

172 FERC ¶ 61,132
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Neil Chatterjee, Chairman;
Richard Glick, Bernard L. McNamee,
and James P. Danly.

Midcontinent Independent System Operator, Inc.

Docket No. ER20-588-000

ORDER ACCEPTING TARIFF REVISIONS SUBJECT TO CONDITION

(Issued August 10, 2020)

1. On December 12, 2019, Midcontinent Independent System Operator, Inc. (MISO) filed, pursuant to section 205 of the Federal Power Act (FPA)¹ and section 35 of the Commission's regulations,² proposed revisions to its Open Access Transmission, Energy, and Operating Reserve Markets Tariff (Tariff) to allow for the selection of a storage facility as a transmission-only asset (SATO) in the MISO Transmission Expansion Plan (MTEP). On March 10, 2020, the Commission found that the proposed Tariff revisions may be unjust, unreasonable, unduly discriminatory, or otherwise unlawful, accepted the Tariff revisions for filing, and suspended their effectiveness for five months, subject to refund, to become effective August 11, 2020, subject to further order by the Commission following a technical conference.³ As discussed below, we accept MISO's proposed Tariff revisions, effective August 11, 2020, subject to the condition that MISO submit a compliance filing within 45 days of the date of this order adding clarifications to the Tariff consistent with MISO's statements on the record in this proceeding.

¹ 16 U.S.C. § 824d (2018).

² 18 C.F.R. § 35.13 (2019).

³ *Midcontinent Indep. Sys. Operator, Inc.*, 170 FERC ¶ 61,186, at P 1 (2020) (March 10 Order).

I. Background

A. Commission Precedent

2. In *Nevada Hydro*, the Commission denied a request that a pumped storage project be treated as a transmission facility under the operational control of the California Independent System Operator Corporation (CAISO) and that the cost of the project be included in CAISO's rolled-in transmission charge.⁴ The Commission found that it would not be appropriate for CAISO to assume operational control over the pumped-storage facility.⁵ Two years later, in *Western Grid*, the Commission granted a petition for declaratory order from Western Grid, a prospective electric storage developer, requesting that the Commission classify its electric storage resources as transmission for cost-based recovery purposes, finding (among other things) that: (1) when operated at CAISO's direction to provide voltage support and thermal overload protection for relevant transmission facilities, the electric storage resources would function as wholesale transmission facilities;⁶ (2) CAISO's independence would be maintained because CAISO would not be responsible for buying power to energize the resources or physically operating the batteries when they were being charged and discharged;⁷ (3) Western Grid would not retain any revenues outside of the transmission access charge and would credit any incidental revenues it may accrue as a result of charging or discharging the electric storage resources to transmission customers;⁸ and (4) the electric storage resources would not undercut competitive bids by other market participants because Western Grid would not be offering the resources into the CAISO markets, but rather would only use the resources to provide voltage support and to address thermal overload situations at CAISO's instruction.⁹

⁴ *Nev. Hydro Co. Inc.*, 122 FERC ¶ 61,272, at PP 82-83 (2008) (*Nevada Hydro*).

⁵ *Id.* P 82.

⁶ *Western Grid Dev., LLC*, 130 FERC ¶ 61,056, at P 43 (2010) (*Western Grid*).

⁷ *Id.* P 45.

⁸ *Id.* P 46. Western Grid explained that it would pay retail energy prices when taking power from the grid and would receive retail credit in releasing energy during a time when reliability concerns trigger such an action. *Id.* P 19.

⁹ *Id.* P 51.

3. In 2017, the Commission issued a policy statement to clarify its precedent in *Nevada Hydro* and *Western Grid*.¹⁰ The 2017 Policy Statement provided: (1) guidance and clarification regarding the ability of electric storage resources to receive cost-based rate recovery for certain services, such as transmission or grid support services, while also receiving market-based revenues for providing separate market-based rate services; and (2) additional guidance on the issues that should be addressed by electric storage resources when seeking to recover their costs through both cost-based and market-based rates concurrently.

B. Initial Filing

4. MISO proposes new Tariff provisions to allow a storage facility to be approved as the preferred solution to Transmission Issues¹¹ identified in the MTEP.¹² MISO asserts that its proposal follows the principles the Commission articulated in *Western Grid* and the 2017 Policy Statement.¹³ MISO asserts that its Tariff provisions ensure that SATOAs are reviewed in the same context and with the same rigor as traditional wires solutions.¹⁴ MISO proposes a new section II.G of Attachment FF (Transmission Expansion Planning Protocol) to its Tariff, which includes: (1) an evaluation process for the SATOA to be included in the MTEP as the preferred solution to a Transmission Issue; (2) the development of operating guides for each SATOA; (3) a description of the market activities and market impacts of a SATOA; (4) a description of the mechanism under which a SATOA recovers costs; and (5) a description of how MISO will consider a SATOA's impacts on resources in the generator interconnection queue.¹⁵

¹⁰ *Utilization of Electric Storage Resources for Multiple Services When Receiving Cost-Based Rate Recovery*, 158 FERC ¶ 61,051, at P 9 (2017) (2017 Policy Statement).

¹¹ Capitalized terms that are not defined in this order have the meaning specified in the MISO Tariff.

¹² Filing, Transmittal Letter at 1.

¹³ *Id.* at 7, 9. MISO explains that the circumstance examined in the 2017 Policy Statement, the ability of storage resources to provide both market and transmission services, is not at issue here. MISO states that the 2017 Policy Statement nonetheless provides guidance for operation of a SATOA regarding double recovery of costs, adverse market impacts, and independence of the Regional Transmission Operator or Independent System Operator (RTO/ISO). *Id.* at 4-5.

¹⁴ *Id.* at 14.

¹⁵ *Id.* at 16, 20.

5. MISO argues that its proposal addresses all concerns raised in the 2017 Policy Statement, *Nevada Hydro*, and *Western Grid*.¹⁶ MISO asserts that: (1) the SATOA will be operated in a manner that preserves MISO's independence because the SATOA owner is responsible for maintaining the necessary state of charge to serve the transmission function for which it was approved in the MTEP; (2) MISO will exercise functional control of the SATOA for transmission purposes only, and will not be responsible for buying power to energize the project; (3) any revenues received by the resource for charging/discharging to meet its transmission obligations are properly credited back to the transmission function; and (4) the project must be identified as the preferred solution to a Transmission Issue. MISO also states that the SATOA will not participate in its markets but will use market settlement mechanisms to settle the charging and discharging functions performed under MISO functional control and direction.¹⁷

6. MISO notes that there currently is a storage resource proposal pending in MTEP19, the Waupaca Area Energy SATOA Project (Waupaca Project), which has been fully reviewed in the MISO planning process and found to be the preferred solution for the identified Transmission Issue.¹⁸ MISO asserts that it will move that project forward for inclusion in the MTEP after any order accepting the proposed Tariff revisions.

7. MISO asserts that its proposal addresses concerns that arose during the two-year stakeholder process.¹⁹ MISO states that the issues receiving the most interest from stakeholders were: (1) whether electric storage resources seeking treatment as a

¹⁶ *Id.* at 14.

¹⁷ *Id.* at 13.

¹⁸ *Id.* at 25. According to the MTEP19 report, the pending project consists of a 2.5 MWh battery storage facility that would be modeled offline except during specific N-1-1 conditions and would be operated as a post contingency automatic action. The report states that the extremely fast discharge capability of the storage device makes it uniquely positioned to provide this post contingency solution. MISO evaluated system performance of the proposed SATOA compared to a traditional wires solution and found that both solutions provided comparable reduction in risk of load loss for the full 10-year planning horizon. The report states that life cycle cost comparison showed that the SATOA is a more cost-effective solution compared to the traditional wires solution. Additionally, MISO assessed generation resources currently in the generator interconnection queue located near proposed SATOA and found that the SATOA would not disadvantage any of the identified generating facilities. The report is available at <https://cdn.misoenergy.org/MTEP19%20Executive%20Summary%20and%20Report398565.pdf>.

¹⁹ Filing, Transmittal Letter at 9-13.

transmission reliability asset should be subject to the generator interconnection process (GIP); (2) how to evaluate electric storage resources in comparison to traditional wires solutions; (3) and the treatment of net revenues associated with charging and discharging a SATOA under MISO functional control for transmission purposes.²⁰ MISO requests that the Commission accept its proposed Tariff revisions for filing, effective March 11, 2020, and grant a waiver of any Commission regulations that the Commission deems necessary.²¹

C. Comments, Protests, and Answers²²

8. Protests to the initial filing were filed by: American Municipal Power, Inc. (AMP); Electric Power Supply Association (EPSA); FirstLight Power Inc. (FirstLight); GlidePath Development LLC (GlidePath); Invenergy Storage Development LLC (Invenergy); Joint MISO Stakeholder Sector Participants (comprised of Alliant Energy Corporate Services, Inc. (Alliant); the American Wind Energy Association (AWEA); the Citizens Against Rate Excess; Citizens Utility Board of Michigan; Citizens Utility Board of Wisconsin; Clean Grid Alliance; Consumers Energy Company (Consumers); DTE Electric Company (DTE); EDF Renewables Development, Inc. (EDF); Invenergy; LSP Transmission Holdings II, LLC (LSP Transmission); Michigan Department of the Attorney General; Michigan Environmental Council; Minnesota Department of Commerce; National Hydropower Association; Natural Resources Defense Council; RWE Renewables Americas, LLC; Savion, LLC; Solar Council; and Sustainable FERC Project); LSP Transmission; and Michigan Public Service Commission (Michigan Commission).

9. Comments on the initial filing were filed by: Energy Storage Association (ESA); Environmental Law & Policy Center and Center for Renewables Integration (together, Public Interest Organizations); Louisiana Energy Users Group; and MISO Transmission Owners.²³

²⁰ *Id.* at 12.

²¹ *Id.* at 26.

²² Our prior order set forth the full summary of comments, protests, and answers. *See* March 10 Order, 170 FERC ¶ 61,186 at PP 25-52.

²³ MISO Transmission Owners for this filing consist of: Ameren Services Company, as agent for Union Electric Company, Ameren Illinois Company and Ameren Transmission Company of Illinois; American Transmission Company LLC; Big Rivers Electric Corporation; Central Minnesota Municipal Power Agency; City Water, Light & Power (Springfield, IL); Cleco Power LLC; Cooperative Energy; Dairyland Power Cooperative; Duke Energy Business Services, LLC for Duke Energy Indiana, LLC; East Texas Electric Cooperative; Entergy Arkansas, LLC; Entergy Louisiana, LLC; Entergy Mississippi, LLC;

10. Clean Energy Entities (comprised of AWEA, Clean Grid Alliance, and Solar Council), MISO, and MISO Transmission Owners filed answers.

11. Commenters and protesters bring up several issues with MISO's proposal. They argue that: (1) MISO's proposal is unduly discriminatory and preferential;²⁴ (2) MISO's criteria for selection of a SATOA are too ambiguous;²⁵ (3) MISO will inappropriately maintain the SATOA's state of charge;²⁶ and (4) MISO fails to address wholesale market impacts.²⁷ They also argue that MISO must provide more information about: (1) what information will be in the operating guides;²⁸ (2) how MISO will restrict cost recovery to the cost of the maximum capacity needed to address the Transmission Issue;²⁹ and (3) how MISO will test any impacts of the SATOA on newly-interconnecting resources

Entergy New Orleans, LLC; Entergy Texas, Inc.; Great River Energy; 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 Energy Company; Minnesota Power (and its subsidiary Superior Water, L&P); 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 Inc.; Northwestern Wisconsin Electric Company; Otter Tail Power Company; Prairie Power Inc.; Southern Illinois Power Cooperative; Southern Indiana Gas & Electric Company; Southern Minnesota Municipal Power Agency; Wabash Valley Power Association, Inc.; and Wolverine Power Supply Cooperative, Inc.

²⁴ Joint MISO Stakeholder Sector Participants Protest at 10-13; Invenergy Protest at 3-7; EPSA Protest at 3; LSP Transmission Protest at 3-4; Michigan Commission Protest at 13-14; GlidePath Protest at 7; Public Interest Organizations Comments at 6, 9-11.

²⁵ FirstLight Protest at 9-11; AMP Protest at 6-13; GlidePath Protest at 4.

²⁶ FirstLight Protest at 8-9; ESA Comments at 3.

²⁷ Joint MISO Stakeholder Sector Participants Protest at 22; FirstLight Protest at 8.

²⁸ Joint MISO Stakeholder Sector Participants Protest at 25.

²⁹ AMP Protest at 4.

in the generator interconnection queue and how it will assess/assign the cost of any necessary mitigation.³⁰ These arguments are addressed below.

D. March 10 Order

12. In the March 10 Order, the Commission found that the proposed revisions to MISO's Tariff had not been shown to be just and reasonable and may be unjust, unreasonable, unduly discriminatory or preferential, or otherwise unlawful.³¹ The Commission accepted the proposed Tariff revisions for filing, suspended them for five months, to become effective on August 11, 2020, subject to refund, and subject to further order by the Commission following a technical conference. The Commission stated that, following the technical conference, parties would have an opportunity to file written comments that would be included in the formal record of the proceeding which, together with the existing record, would form the basis for further Commission action.

E. Technical Conference and Responsive Pleadings

13. The technical conference was held on May 4, 2020, during which Commission staff questioned MISO about several aspects of its filing, including MISO's proposed evaluation and selection criteria for SATOAs, the SATOA's market activities and any potential wholesale market impacts of those activities, how MISO's current formula rate structure accommodates cost recovery for SATOAs, a SATOA's potential impact on the generator interconnection queue, and the operating guides that will apply to a SATOA. Parties that participated in the conference were also given an opportunity to ask questions and provide comments. The due date for post-technical conference comments was originally set at May 25, 2020³² and later extended to June 1, 2020.³³

14. On March 19, 2020, Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor for PJM Interconnection, LLC (PJM Market Monitor) filed a motion to intervene.

15. Post-technical conference comments were filed by: Thomas W. Rose, Principal and Senior Consultant with CMG Consulting LLC (Thomas Rose); MISO; Joint MISO Stakeholder Sector Participants (Stakeholder Participants) (comprised of Alliant; AWEA;

³⁰ Joint MISO Stakeholder Sector Participants Protest at 23-24; ESA Comments at 4; GlidePath Protest at 7.

³¹ March 10 Order, 170 FERC ¶ 61,186 at P 56.

³² Notice of Technical Conference, Docket No. ER20-588-000 (Apr. 10, 2020).

³³ Notice of Extension of Time, Docket No. ER20-588-000 (May 15, 2020).

the Citizens Against Rate Excess; Citizens Utility Board of Michigan; Citizens Utility Board of Wisconsin; Clean Grid Alliance; Consumers; DTE; EDF; Invenegy; Michigan Department of the Attorney General; Michigan Environmental Council; Minnesota Department of Commerce; National Hydropower Association; Natural Resources Defense Council; RWE Renewables Americas, LLC; Savion, LLC; Solar Council; and Sustainable FERC Project); MISO Transmission Owners; and the PJM Market Monitor.

16. MISO, the PJM Market Monitor, and Stakeholder Participants filed answers to the post-technical conference comments.

II. Commission Determination

A. Procedural Issues

17. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214(d) (2019), we grant the late-filed motion to intervene of the PJM Market Monitor, given its interest in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay. We note that Thomas Rose filed post-technical conference comments but did not file a motion to intervene; therefore, Thomas Rose is not a party to this proceeding.

B. Substantive Issues

18. We accept MISO's proposed Tariff revisions as just, reasonable, and not unduly discriminatory or preferential, subject to the condition that MISO make a compliance filing within 45 days of the date of this order adding to the Tariff certain clarifications provided by MISO in its post-technical conference comments.³⁴ As discussed further below, we find that, under the "rule of reason," these clarifications would significantly affect rates, terms, and conditions of service, and accordingly must be reflected in MISO's Tariff.³⁵

³⁴ The United States Court of Appeals for the District of Columbia Circuit has held that, in certain circumstances, the Commission has "authority to propose modifications to a utility's [FPA section 205] proposal *if the utility consents to the modifications.*" *NRG Power Mktg., LLC v. FERC*, 862 F.3d 108, 114-15 (D.C. Cir. 2017) (emphasis in original).

³⁵ *Midcontinent Indep. Sys. Operator, Inc.*, 169 FERC ¶ 61,221, at P 67 (2019) ("Decisions as to whether an item should be included in a tariff or in a business practice manual are guided by the Commission's rule of reason policy, under which provisions that 'significantly affect rates, terms, and conditions' of service, are readily susceptible of

19. We note that, because MISO’s post-technical conference comments provided helpful clarifications of its proposed Tariff revisions, we summarize the initial filing and MISO’s post-technical conference comments together by issue. We also note that, because commenters and protesters (referred to generally as “protesters” herein) in many cases raised similar issues in comments and protests submitted prior to the technical conference and in post-technical conference comments, we summarize and address all the pleadings together by issue in the discussion below.

1. **Evaluating the SATOA as the Preferred Transmission Solution**

a. **Initial Filing and Post-Technical Conference Clarifications**

20. MISO’s proposed Tariff language establishes the evaluation process for selecting a SATOA in the MTEP for purposes of cost allocation or including a SATOA in the MTEP as the preferred solution to a Transmission Issue. The proposal states that, of primary significance, the SATOA must demonstrate a basis to be eligible for inclusion in Appendix A of the MTEP as a transmission by showing:

Unique characteristics or circumstances of the proposed SATOA necessary to meet the identified Transmission System performance requirements and not otherwise available at comparable costs from other proposed solutions, including speed of operation, lead-time to implement, right-of-way or other property considerations.³⁶

MISO states that unique characteristics may include degradation of capacity over time, inverter-based impacts on reliability, and impacts on operating and interconnecting market resources.³⁷ In addition, the proposed Tariff language states that the proposed SATOA must demonstrate “[a] need to resolve the Transmission Issue(s) through the storage facility’s functioning as a SATOA instead of as a Resource that participates in [MISO]’s markets.”³⁸ MISO asserts that demonstrating that the need cannot be met

specification, and are not generally understood in a contractual agreement must be included in a tariff.”) (citations omitted).

³⁶ Filing, Tab A, proposed MISO Tariff, att. FF, § II.G.1.c.i.a (71.0.0).

³⁷ *Id.*, Transmittal Letter at 2. MISO states, for example, that a storage asset can rapidly inject and withdraw real or reactive power in solving Transmission Issues that could not otherwise be resolved if the storage asset was participating in markets. *Id.* n.5.

³⁸ *Id.* at 20, Tab A, proposed MISO Tariff, att. FF, § II.G.1.c.i.b (71.0.0).

through the market is fundamental to providing the opportunity for a storage facility to earn cost-based revenue as transmission-only.³⁹

21. Under the proposal, a SATOA must meet the criteria to be classified as one of the transmission types outlined in Attachment FF (i.e., a Baseline Reliability Project, New Transmission Access Project, Market Efficiency Project, Market Participant Funded Project, Targeted Market Efficiency Project, Multi-Value Project, or Other Project).⁴⁰ If the SATOA meets these criteria, as well as the additional criteria applicable to the SATOA (described below), it will be listed in Appendix A of the MTEP as that project type.⁴¹ The description of the project in the MTEP will disclose that the project includes a storage resource. MISO asserts that this approach will ensure that the project will move forward to construction to resolve the Transmission Issue because of the obligation to construct that applies to MISO's current project types.⁴² MISO also states that requiring a SATOA to qualify as one of the existing project types within the Tariff ensures that cost allocation is identified at the time the SATOA is included in the MTEP.

³⁹ *Id.*, Transmittal Letter at 20.

⁴⁰ *Id.* at 16, Tab A, proposed MISO Tariff, att. FF, § II.G.1 (71.0.0). Market Efficiency Projects and Multi-Value Projects are eligible to use one of MISO's Order No. 1000 regional cost allocation methods and, therefore, MISO must select these projects in the MTEP for purposes of cost allocation. Transmission facilities selected in a regional transmission plan for purposes of cost allocation are transmission facilities that have been selected pursuant to a transmission planning region's Commission-approved regional transmission planning process for inclusion in a regional transmission plan for purposes of cost allocation because they are more efficient or cost-effective solutions to regional transmission needs. *Transmission Planning and Cost Allocation by Transmission Owning and Operating Pub. Utils.*, Order No. 1000, 136 FERC ¶ 61,051, at P 63 (2011), *order on reh'g*, Order No. 1000-A, 139 FERC ¶ 61,132, *order on reh'g and clarification*, Order No. 1000-B, 141 FERC ¶ 61,044 (2012). Other categories of MISO transmission projects that are not eligible to use a regional cost allocation method, such as Baseline Reliability Projects and Other Projects, are included in the MTEP but not selected for purposes of cost allocation. Order No. 1000, 136 FERC ¶ 61,051 at P 318.

⁴¹ Filing, Transmittal Letter at 17.

⁴² *Id.* (citing MISO FERC Electric Tariff, att. FF, § V (“... for each project included in the recommended MTEP Appendix A and prior to approval by the Transmission Provider Board, the plan shall designate one or more Transmission Owners to construct, own, operate, maintain, repair, restore, and finance the recommended project”)).

22. MISO's proposed Tariff revisions outline comparative evaluations of a SATOA that MISO will conduct after it concludes that the project is eligible for consideration in the MTEP as one of the existing project types. First, MISO will evaluate the ability of the potential SATOA to address the Transmission Issue (e.g., loading, voltage, stability) in all hours that the Transmission Issue is determined to exist, with a life-cycle cost that is comparable to other proposed solutions or as otherwise needed to address the Transmission Issue, and after consideration of comparability in system performance to other proposed solutions, including any proposed non-transmission alternatives (NTA).⁴³ MISO also proposes that it will: (1) require assurance of sufficient energy or reactive capability to charge or discharge energy for the period identified as necessary in the planning study; (2) assess system reliability impacts applicable to inverter-based facilities on the same basis and in a manner comparable to the analysis in the GIP as applicable to storage resources as inverter-based facilities; and (3) make any other additional considerations that may support comparative evaluation to other solutions to the Transmission Issue, such as lead-time to develop, right of way or substation impacts, expandability, operational flexibility, and other factors.⁴⁴

23. MISO's proposed Tariff revisions also outline the cost assumptions that MISO will consider in order to evaluate a SATOA's cost effectiveness as compared to other potential solutions.⁴⁵ The entity proposing the SATOA must provide the planning estimate of the SATOA's: (1) direct capital cost; (2) expected useful life; (3) equipment replacement schedules, associated life-cycle costs, and other ongoing costs to maintain the SATOA at its required capacity and energy capability necessary to address the Transmission Issue identified, or otherwise comparable to a traditional wires solution; and (4) any other cost and performance information that MISO may determine is necessary to compare the cost and performance with other proposed solutions to the identified Transmission Issue.

24. MISO also proposes Tariff language to clarify that storage facilities that are not proposed as SATOAs may be considered as NTAs to address system needs when participating as generation or demand-side resources.⁴⁶

⁴³ *Id.* at 18, Tab A, proposed MISO Tariff, att. FF, § II.G.1.a.i (71.0.0). MISO states that the inclusion of SATOA as a transmission asset solution option does not in any way conflict with existing Tariff requirements to consider NTAs in the planning process. *Id.*, Transmittal Letter at 21.

⁴⁴ *Id.* at 18-19, Tab A, proposed MISO Tariff, att. FF, § II.G.1.a.iii - vi (71.0.0).

⁴⁵ *Id.*, Transmittal Letter at 19-20, Tab A, proposed MISO Tariff, att. FF, § II.G.1.b (71.0.0).

⁴⁶ *Id.*, Transmittal Letter at 21, Tab A, proposed MISO Tariff, att. FF, § II.G.3

25. MISO provides some clarifications of its proposed evaluation criteria in its post-technical conference comments. MISO first clarifies its proposed Tariff language stating that a SATOA must demonstrate “unique characteristics or circumstances of the proposed SATOA necessary to meet the identified Transmission System performance requirements and not otherwise available at comparable costs from other proposed solutions, including speed of operation, lead-time to implement, right-of-way, or other property considerations.”⁴⁷ MISO clarifies that the term “Transmission System performance requirement” has the same meaning as the defined Tariff term “Transmission Issue.”⁴⁸ Thus, MISO asserts, in order to be selected as the preferred solution in the MTEP, the SATOA must improve, expand, or modify the transmission system, and may be compliance-based, economic-based, or reflect other needs. MISO also clarifies what it means by “right-of-way or other property considerations.”⁴⁹ MISO states that it intends to consider any advantages of the SATOA over other solutions that may be hampered by right-of-way acquisition problems or substation space limitations, such as the ability to be installed in an existing transmission substation or a smaller installation footprint.

26. MISO next clarifies that the criteria that it will consider for determining whether a SATOA has unique characteristics to meet the identified Transmission Issue will be the same as those used for evaluating traditional wires solutions pursuant to Attachment FF, section 1.C of the Tariff.⁵⁰ MISO explains that these criteria would include, but not be limited to: (1) effectiveness, i.e., whether the SATOA as proposed to operate (e.g., discharge or charge when needed to address voltage, loading, or stability issues) can mitigate the Transmission Issue; (2) longevity, i.e., how many years is the solution expected to be sufficient before an additional upgrade will be needed; and (3) cost. MISO further explains that other factors could include a capability not provided by a traditional wires solution, cost savings, additional benefits beyond addressing the near-term need, and robustness.⁵¹ As an example, MISO states that a SATOA may provide

(71.0.0).

⁴⁷ *Id.*, Tab A, proposed MISO Tariff, att. FF, § II.G.1.c.i (71.0.0).

⁴⁸ MISO Post-Technical Conference Comments at 6.

⁴⁹ *Id.* at 9.

⁵⁰ *Id.* at 8.

⁵¹ *Id.* at 9. For example, MISO states, if one proposed solution had the opportunity for adding a second circuit and the other proposed solution did not, and costs were similar, MISO may choose the first option. MISO notes that this criterion is not outlined in the Tariff but is developed in the stakeholder process as part of identifying the preferred solution selected for inclusion in Appendix A of the MTEP. *Id.* n.26.

grid support by being able to inject/withdraw both VARS (reactive power) or Watts (real power), which is unique compared to a transmission line or substation (which can do neither) or a reactor bank, capacitor bank, or static var compensator (which could only inject/withdraw VARS). MISO contends that the provision for “unique characteristics or circumstances” is intended to recognize that there may be alternative traditional wires solutions that could resolve the issues just as effectively as the proposed SATOA, and, if this is the case, then the preference will be to select the traditional wires solutions.⁵²

27. MISO asserts that the application of the “unique characteristics or circumstances” selection criteria will be reviewed in multiple, transparent stakeholder meetings for each annual MTEP process.⁵³ MISO asserts that this process includes several Sub-Regional Planning Meetings, Planning Advisory Committee Meetings, and Planning Subcommittee meetings, each of which involve an opportunity for stakeholders to provide feedback. For instance, MISO states that the Waupaca Project identified as the preferred transmission solution in MTEP19 was discussed at three separate Sub-regional Planning Meetings and at the Planning Advisory Committee.⁵⁴

28. MISO explains that consideration between potential alternatives will be based on the ability to address the need, the associated costs, and other benefits of the solutions; if everything is equal, MISO will choose a traditional wires solution over a SATOA, as it is less complex to implement.⁵⁵ That is, if everything is equal, there would not be “unique circumstances or characteristics” of a SATOA to meet the need. MISO states that, additionally, if sufficient information is not available to ensure the necessary functionality of the proposed SATOA, the proposed SATOA will not be chosen over a traditional transmission solution.⁵⁶ MISO explains that it initially relies on vendor-supplied information and MISO’s analysis in its planning models, and, as MISO gains more experience over time in the evaluation of SATOA characteristics, MISO may apply its independent expertise in the evaluation of a proposed facility. MISO further asserts that, if two or more proposed SATOAs have unique characteristics that address the

⁵² *Id.* at 8.

⁵³ *Id.* at 10.

⁵⁴ *Id.* at 19, 22.

⁵⁵ *Id.* at 16.

⁵⁶ *Id.* at 17.

Transmission Issue, MISO would compare the SATOA proposals to one another on capability and cost and select the preferred solution through the stakeholder process.⁵⁷

29. MISO also clarifies its proposed Tariff language stating that a SATOA must demonstrate “a need to resolve the Transmission Issue(s) through the storage facility’s functioning as a SATOA instead of as a Resource that participates in [MISO’s] markets.” MISO explains that this provision is intended to ensure that there is something unique about the application that justifies providing the storage facility with cost-based revenue.⁵⁸ MISO further explains that it will evaluate the storage facility as a transmission solution versus if the storage facility was serving as a resource in MISO’s planning models; if a storage facility participating in markets could have its dispatch schedule adjusted to address a Transmission Issue through routine congestion management protocols, then the resource will not qualify as a SATOA.⁵⁹ MISO notes that, for a routine N-1 thermal issue, a SATOA would largely be indistinguishable from a market resource and its discharge to resolve such congestion issues would not qualify the SATOA to receive cost-based revenues.⁶⁰ But MISO asserts that, while routine Security Constrained Economic Dispatch (SCED) of market resources is used to address N-1 thermal issues, other types of Transmission Issues (especially N-2 or stability issues) are not typically addressed in market SCED because they would require the rapid discharge of the facility to avert instabilities or cascading events.⁶¹ MISO explains that the rapid-discharge ability is one example of unique characteristics that can warrant the consideration of a SATOA, as MISO would not have functional control of a market-participating storage facility to ensure its readiness for this type of situation.⁶²

30. MISO states that this Tariff provision, requiring a SATOA to demonstrate “a need to resolve the Transmission Issue(s) through the storage facility’s functioning as a SATOA instead of as a Resource that participates in [MISO’s] markets,” distinguishes between storage facilities to be operated as transmission and storage facilities that may be proposed as NTAs.⁶³ MISO states that it would have functional control of SATOAs and

⁵⁷ *Id.* at 16-17.

⁵⁸ *Id.* at 11.

⁵⁹ *Id.* at 12, 15.

⁶⁰ *Id.* n.22, 12.

⁶¹ *Id.* at 15-16.

⁶² *Id.* at 16.

⁶³ *Id.* at 12.

thus be able to operate them as needed during day-to-day operations according to the operating guide. Additionally, MISO states that SATOAs would have to connect to MISO's transmission system voltage class (100kV+) whereas NTAs would not.⁶⁴

31. MISO contends that its evaluation criteria ensure that SATOAs are limited to only those electric storage resources that perform a transmission-specific function because, if the SATOA is the preferred solution to a Transmission Issue, and listed in Appendix A of the MTEP, the proposed Tariff revisions prohibit the SATOA's operation for any other purposes.⁶⁵ MISO also states that a SATOA is prohibited from participating in the MISO markets other than for withdrawing energy in order to perform the transmission function for which it was included in the MTEP.⁶⁶

32. MISO provides an example of how it applied the proposed evaluation criteria in choosing a SATOA as the preferred solution to the Transmission Issue in MTEP19, the Waupaca Project.⁶⁷ MISO states that the project was recommended to address multiple outage issues during certain system load conditions and will provide operational flexibility to address these limitations. MISO asserts that the Waupaca Project was modeled as offline, except for specific N-1-1 conditions, and operated as a post contingency automatic action. MISO contends that the automatic operation of the Waupaca Project will allow it to monitor voltages, line loadings, and line statuses in the area such that after the second N-1 event, the Waupaca Project will be dispatched automatically to control voltage and thermal violations.⁶⁸ MISO contends that the extremely fast discharge capability of the storage facility makes it uniquely positioned to provide this post-contingency solution, greatly reducing the hours at risk for load loss.⁶⁹ MISO avers that this is a unique set of requirements which could not be assured to be met if the facility was performing market operations.

⁶⁴ *Id.* at 13.

⁶⁵ *Id.* at 17-18.

⁶⁶ *Id.* at 18.

⁶⁷ *Id.* at 13.

⁶⁸ *Id.* at 13-14.

⁶⁹ *Id.* at 14. MISO also states that the Waupaca Project is preferable to a traditional wires solution because the life cycle cost comparison showed that the SATOA is a more cost-effective solution compared to the traditional wires solution and provided other benefits relative to the wires alternative such as no need for expanded right-of-way. *Id.* at 15, 21.

b. Protests and Post-Technical Conference Comments

33. Stakeholder Participants contend that MISO's proposed Tariff provisions requiring a SATOA to show "unique circumstances and characteristics" lack critical details.⁷⁰ They first reference MISO's clarification that, if there is no difference between the costs and benefits of implementing a SATOA versus a wires solution, or if there is insufficient information to approve a proposed SATOA, MISO will choose the wires solution.⁷¹ They state that these criteria are not listed in the Tariff. Second, Stakeholder Participants argue that MISO has failed to explain how it will evaluate a SATOA for economic benefits consistent with its Tariff.⁷² Stakeholder Participants explain that MISO's Tariff allows it to evaluate Baseline Reliability Projects, an eligible project category for a SATOA, for Market Efficiency Project benefits.⁷³ However, they contend, MISO has not stated that, if a SATOA clears the cost hurdle, it will then evaluate the SATOA for Market Efficiency Project benefits as its Tariff requires. Stakeholder Participants argue that this additional assessment is critical because Market Efficiency Projects are put out for competitive bid per MISO's Tariff. Third, Stakeholder Participants assert that MISO has not discussed how a SATOA is uniquely qualified to address needs arising in the following MTEP categories: New Transmission Access Project, Market Efficiency Project, Market Participant Funded Project, Targeted Market Efficiency Project, Multi-Value Project, or Other Project.⁷⁴ Stakeholder Participants assert, for instance, that the "Other Project" category is approved by MISO so long as no harm will occur and without any further testing; yet, MISO has not explained how it will evaluate whether a SATOA proposed as an "Other Project" is actually serving a transmission function and will not be proposed for asset renewal, distribution issues, operational issues, or to relieve congestion, which also apply to Other Projects.⁷⁵ Finally, Stakeholder Participants also contend that, while MISO has explained that SATOAs are not intended to address the

⁷⁰ Stakeholder Participants Post-Technical Conference Comments at 10.

⁷¹ *Id.* at 10, 21.

⁷² *Id.* at 11.

⁷³ *Id.* at 11 (citing MISO Tariff, att. FF, § III.A.2.j ("If the Transmission Provider determines that a project designated as a Market Efficiency Project also meets the criteria to be designated as a Baseline Reliability Project and/or a New Transmission Access Project, the cost of such project shall be allocated in accordance with the Market Efficiency Project allocation procedures.")).

⁷⁴ *Id.* at 12.

⁷⁵ *Id.* at 13.

transmission need in N-1 and N-0 situations, the proposed Tariff does not indicate that market solutions will be given priority in these situations.⁷⁶

34. The PJM Market Monitor contends that MISO's "unique characteristics or circumstances" criteria are subjective, and that meeting the criteria is also subject to the discretion of the transmission owner who could deny access to rights of way and otherwise affect applicability of the stated criteria.⁷⁷

35. Protesters also argue that MISO's proposal creates an unduly discriminatory preference for storage projects proposed by incumbent transmission owners over identical storage projects proposed by similarly situated non-transmission owners.⁷⁸ They state that storage is most likely to qualify as a Baseline Reliability Project or Other Project in the MTEP because the other MTEP categories are subject to requirements that storage projects are not likely to meet; for instance, Market Efficiency Projects must be 345 kV or above and have a total project cost of at least \$5 million, and Multi-Value Projects must have a total cost of \$20 million or more.⁷⁹ Protesters state that the MTEP rules permit only existing MISO transmission owners to build and own transmission projects that are classified as Baseline Reliability Project and Other Projects because transmission owners have a right of first refusal to construct these categories of projects. As a result, protesters argue that non-transmission owner storage developers will not be able to take advantage of the SATOA provisions and will, instead, only be able to propose a storage solution in the MTEP as an NTA that will be subject to additional requirements.⁸⁰ Protesters point out that NTAs, unlike SATOAs, must: (1) go through the interconnection queue and obtain a generator interconnection agreement, and thus will not have time to be considered for MTEP Appendix A projects (those to be built in the following three years); (2) pay

⁷⁶ *Id.* at 12.

⁷⁷ PJM Market Monitor Post-Technical Conference Comments at 2.

⁷⁸ Joint MISO Stakeholder Sector Participants Protest at 10; Invenergy Protest at 3-7; EPSA Protest at 3; LSP Transmission Protest at 3; Michigan Commission Protest at 13-14; GlidePath Protest at 7; Public Interest Organizations Comments at 6; Stakeholder Participants Post-Technical Conference Comments at 13.

⁷⁹ Joint MISO Stakeholder Sector Participants Protest at 12 n.25; Invenergy Protest at 4; LSP Transmission Protest at 3. Joint MISO Stakeholder Sector Participants point out that the National Renewable Energy Laboratory projects that the cost of utility grade storage projects will be \$1,200/kW by the early 2020s and continue to decline. Joint MISO Stakeholder Sector Participants Protest at 12 n.25.

⁸⁰ *Id.* at 13, 18; Invenergy Protest at 5-6; Michigan Commission Protest at 13-14; Public Interest Organizations Comments at 9-11.

transmission charges for energy used to charge; and (3) be dependent solely on energy market revenues to cover these costs.⁸¹

36. Protesters contend that there is nothing unique about storage coming from the MTEP process that makes it more qualified to address the MTEP-identified Transmission Issue, and that it is not appropriate to treat electric storage resources (or any supply-side resources) as equivalent to a traditional transmission wires solution.⁸² They state that all storage devices provide transmission support – such as voltage support, thermal relief, and real or reactive power output which can manage thermal line loading – at potentially lower cost and faster deployment capability, and argue that MISO provides no evidence that electric storage resources need to be treated as transmission assets in order to provide these benefits. Stakeholder Participants state that MISO is creating an unduly discriminatory double standard: SATOAs discharge like generation, but receive cost recovery through transmission rates, while NTAs that charge or discharge to address the same Transmission Issue are precluded from recovering costs through transmission rates.⁸³

37. Stakeholder Participants contend that MISO's approach is unduly discriminatory and violates the principle of Order No. 1000, which allows transmission planning participants to offer alternative means to resolve transmission issues.⁸⁴ Stakeholder Participants note that, although MISO plans to consider an expedited process for NTAs to be processed through the GIP, this proposal may never come to fruition and thus does not resolve the violation of Order No. 1000.⁸⁵ Protesters also argue that, by eliminating or limiting competitive opportunities for non-transmission owner storage developers,

⁸¹ Joint MISO Stakeholder Sector Participants Protest at 12; Invenergy Protest at 6; LSP Transmission Protest at 4; Michigan Commission Protest at 9, 14; Stakeholder Participants Post-Technical Conference Comments at 18. Stakeholder Participants note that an NTA could possibly be considered an MTEP Appendix B project, which can be up to 10 years out, but that Appendix B projects have no guarantee of being selected. Stakeholder Participants Post-Technical Conference Comments at 18-19.

⁸² *Id.* at 8, 13; FirstLight Protest at 10; GlidePath Protest at 4; PJM Market Monitor Post-Technical Conference Comments at 1-2.

⁸³ Stakeholder Participants Post-Technical Conference Comments at 33.

⁸⁴ *Id.* at 19 (referencing Order No. 1000, 136 FERC ¶ 61,051).

⁸⁵ *Id.* Stakeholder Participants also contend that, even if an expedited process came to fruition, there would be significant details to address such as the timing differences and modeling incompatibility between the GIP and the MTEP. *Id.* at 19-20.

MISO's proposal leaves in place barriers to the participation of electric storage resources in contravention of Order No. 841.⁸⁶

38. Protesters disagree with MISO's argument that it needs to have control over the storage facility as a SATOA to address the transmission need.⁸⁷ They contend that MISO could enter into an agreement with the owner of a market participant storage asset or a third-party company that would place appropriate restrictions on operation and commitments to be available to address a transmission need.⁸⁸ Stakeholder Participants explain that MISO is registered with the North American Electric Reliability Corporation (NERC) as a Reliability Coordinator and, as such, has the authority to direct other functional entities, including transmission operators and generator operators, to take certain actions to ensure that its Reliability Coordinator area operates reliably.⁸⁹ Thomas Rose argues that a specialized third-party company would provide substantial benefits, such as: (1) be better equipped to understand its technology and support its operation by providing training to transmission operators on any constraints or special requirements for its operation as part of the contractual agreement; (2) bid against other third-party companies to provide the least-cost solution; (3) be subject to stringent non-performance penalties to reduce performance risk; and (4) allow for repurposing of the storage facility after it solves the Transmission Issue.⁹⁰

39. MISO Transmission Owners oppose the suggestion that transmission owners should be required to contract with a third party for storage asset services.⁹¹ They argue that transmission owners should have flexibility to determine how to best address transmission needs and not be forced to contract with a market participant to do so. MISO Transmission Owners contend that requiring transmission owners to contract for storage

⁸⁶ Joint MISO Stakeholder Sector Participants Protest at 19-20; EPSA Protest at 3-4; Michigan Commission Protest at 5 (all citing *Elec. Storage Participation in Mkts. Operated by Reg'l Transmission Orgs. and Indep. Sys. Operators*, Order No. 841, 162 FERC ¶ 61,127 (Errata Notice, Feb. 28, 2018), *order on reh'g and clarification*, 167 FERC ¶ 61,154 (2019)).

⁸⁷ Stakeholder Participants Post-Technical Conference Comments at 13; Thomas Rose Post-Technical Conference Comments at 3.

⁸⁸ Stakeholder Participants Post-Technical Conference Comments at 14; Thomas Rose Post-Technical Conference Comments at 3.

⁸⁹ Stakeholder Participants Post-Technical Conference Comments at 15.

⁹⁰ Thomas Rose Post-Technical Conference Comments at 3-4.

⁹¹ MISO Transmission Owners Post-Technical Conference Comments at 9.

asset services could create unnecessary risks, such as increased costs to address Transmission Issues and potentially increased reliability concerns, given that transmission owners would be required to rely on another entity to fulfill their obligations to maintain grid reliability. Finally, MISO Transmission Owners note that the ability for a transmission owner to contract with another entity already exists and it is not exclusive to SATOAs; accordingly, they argue that transmission owners should continue to have the flexibility, but not be required, to contract with a third party for services in carrying out their obligation to provide a reliable and efficient transmission system.

40. Stakeholder Participants disagree with MISO's contention that SATOA projects are unique because they can be used for N-2 reliability situations.⁹² Stakeholder Participants argue that MISO currently studies new generation and storage in its GIP to solve for the same N-2 situations and even higher-level contingencies when Local Planning Criteria are applied; thus, interconnection customers pay for network upgrades that are meant to address N-2 situations. Further, they argue, MISO's GIP studies allow generators and storage to operate in a fortified grid environment meant to handle N-2 situations, and Locational Marginal Pricing is used to mitigate congestion.⁹³ Stakeholder Participants argue that the only true transmission issue that is not currently addressed by generation comes when the transmission grid has insufficient capacity to handle the load, and they note that a SATOA cannot increase transmission line capacity.⁹⁴ Thus, they conclude that MISO's attempt to equate SATOA with transmission comes up short.

41. Stakeholder Participants claim that, if what occurred in MTEP19 is representative of the evaluation and disclosure that MISO will undertake in the future, then the Commission should reject MISO's proposal because that MTEP process suffered from significant shortfalls.⁹⁵ Stakeholder Participants explain that MISO determined that the SATOA project would cost around \$9 million, whereas the wires solution would cost around \$12 million; however, the SATOA would only operate for two hours and after that MISO would still need to shed load. Stakeholder Participants contend that this temporal limitation does not exist with a wires solution, nor are other benefits to the grid and consumers captured in the comparison. They note that the SATOA narrowly passed a vote among the Planning Advisory Committee sectors, with just under 50% voting to not include this project in MTEP19.

⁹² Stakeholder Participants Post-Technical Conference Comments at 11.

⁹³ *Id.* at 12, 16.

⁹⁴ *Id.* at 16.

⁹⁵ *Id.* at 23.

42. Finally, protesters propose various alternatives to MISO's proposal. For instance, they argue that: (1) MISO should be directed to develop a just and reasonable, not unduly discriminatory or preferential proposal to allow both transmission owner projects and non-transmission owner projects to participate via the same means, whether that is through MISO's MTEP, GIP, or some other streamlined process;⁹⁶ (2) MISO should either require SATOAs to also obtain a generator interconnection agreement, or propose to exempt both SATOAs and NTAs equally from obtaining a generator interconnection agreement and allow them to be similarly studied in the MTEP;⁹⁷ (3) MISO should be required to remove any restrictions in its Tariff that constrains an electric storage resource to be considered an NTA and verify that MISO's Tariff does not restrict transmission solutions to traditional "wires and poles" technologies;⁹⁸ and (4) the Commission should open a separate docket and consider a wider rulemaking or generally take a broader and more holistic review of this issue than the narrowly focused SATOA proposal.⁹⁹ FirstLight notes that the Commission recently held the Grid Enhancing Technologies workshop in December 2019, which includes the question of whether electric storage should be considered a transmission asset, and argue that a Commission decision in this proceeding could prejudice the Commission's policy on these issues.¹⁰⁰

c. Answers

43. MISO disagrees with Stakeholder Participants' assertion that the proposed Tariff is lacking critical details.¹⁰¹ MISO first addresses Stakeholder Participants' complaint that MISO did not include language in its filed Tariff stating that MISO will choose a wires solution over a SATOA if the two are equal in comparison. MISO explains that the Tariff language states that the SATOA must exhibit unique capabilities – absent such uniqueness, the alternative wires solution will be chosen. MISO next addresses Stakeholder Participants' claim that MISO has not explained how the SATOA will meet the criteria for the various MTEP project categories.¹⁰² MISO asserts that Attachment FF

⁹⁶ Joint MISO Stakeholder Sector Participants Protest at 8; Public Interest Organizations Comments at 12; Michigan Commission Protest at 9-11.

⁹⁷ Clean Energy Entities Answer at 12.

⁹⁸ Public Interest Organizations Comments at 12.

⁹⁹ ESA Comments at 3; Thomas Rose Post-Technical Conference Comments at 4.

¹⁰⁰ FirstLight Protest at 1.

¹⁰¹ MISO Post-Technical Conference Answer at 7.

¹⁰² *Id.* at 8. MISO asserts that, contrary to Stakeholder Participants' characterizations, the SATOA framework does not limit the ownership of a SATOA to

and MISO's Transmission Planning Business Practice Manual No. 020 describe the process, and that a SATOA will be evaluated within the project categories the same as a wires solution.

44. With respect to evaluating a SATOA as an economic project, MISO explains that it may determine if there are adjusted production cost benefits when the SATOA is operated as planned to address the transmission need.¹⁰³ If the SATOA met the criteria as an economic project – the same criteria that applies to a wires solution – and otherwise exhibited unique characteristics, MISO asserts that the SATOA may qualify as an economic project. Stakeholder Participants protest MISO's explanation and contend that MISO has still not explained how it will open up the opportunity to all market participants to bid to construct and own the SATOA project as a Market Efficiency Project, as required by Order No. 1000.¹⁰⁴

45. MISO and MISO Transmission Owners assert that the proposal does not unfairly discriminate against market-based storage resources or non-transmission owner developers, as it merely extends to a SATOA the same project framework as applies to wires solutions in the same project category.¹⁰⁵ MISO states that the proposal includes clear criteria for the assessment and evaluation of a SATOA, and that the framework for the evaluation of a SATOA is explicitly laid out in the stated provisions.¹⁰⁶ MISO contends that protesters are essentially challenging MISO's existing, Commission-approved process for NTAs, and argues that these arguments are beyond the scope of this proceeding, as MISO did not submit any Tariff revisions regarding NTAs.¹⁰⁷

existing transmission owners. MISO contends that the SATOA framework incorporates the existing transmission project types identified in Attachment FF, and that the ownership and opportunity to construct a SATOA will follow the ownership and responsibility to construct that project type, the same as for a traditional wires solution.

¹⁰³ *Id.* n.35 (citing MISO Tariff, att. FF, § II.B.1.a.).

¹⁰⁴ Stakeholder Participants Post-Technical Conference Answer at 5.

¹⁰⁵ MISO Answer to Protests of Filing at 7-8; MISO Transmission Owners Answer to Protests of Filing at 4-5.

¹⁰⁶ MISO Answer to Protests of Filing at 11.

¹⁰⁷ MISO Post-Technical Conference Answer at 7.

46. MISO objects to arguments that it is not appropriate to treat storage resources as if they were transmission.¹⁰⁸ MISO asserts that the Commission has already found that the costs of storage facilities operating as transmission assets are properly recoverable in transmission rates in appropriate circumstances.¹⁰⁹ MISO contends that protesters fail to realize that storage as transmission is distinct from storage as a market resource; MISO reiterates that, if a storage facility can meet the transmission need by operating as a market resource, it will not qualify as a SATOA because it would not be unique.¹¹⁰ MISO points out that generation resources selected as NTAs are also eligible to participate in the MISO markets, while SATOAs cannot; MISO argues that this fundamental distinction supports cost recovery for a SATOA as a transmission asset in cost-based rates.¹¹¹

47. MISO also disagrees with claims that its proposal is problematic because, protesters argue, MISO could contract with the owner of a market participant storage asset for these services.¹¹² MISO argues that these contentions contradict Commission precedent stating that storage resources can be classified as transmission assets in appropriate circumstances.¹¹³ MISO next argues that these contentions ignore that a transmission asset's resolution of Transmission Issues is subject to the Transmission Owners Agreement, which includes an obligation to build the asset and to yield functional control to MISO.¹¹⁴ MISO asserts that MISO's functional control over a transmission asset is the foundation of the safe and reliable operation of the transmission system. MISO states that, for reliability issues, it has an obligation to ensure that the solution will be there and, if a storage facility seeks to solve a Transmission Issue, there

¹⁰⁸ *Id.* at 12.

¹⁰⁹ *Id.* at 15 (citing 2017 Policy Statement, 158 FERC ¶ 61,051 at 2; *Western Grid*, 130 FERC ¶ 61,056 at PP 44-46).

¹¹⁰ *Id.* at 5.

¹¹¹ *Id.* at 15-16.

¹¹² *Id.* at 10.

¹¹³ *Id.* at 10-11 (citing *Western Grid*, 130 FERC ¶ 61,056; 2017 Policy Statement, 158 FERC ¶ 61,051).

¹¹⁴ *Id.* at 13 (referencing Agreement of Transmission Facilities Owners to Organize the Midcontinent Independent System Operator, Inc., a Delaware Non-Stock Corporation, MISO Tariff, Rate Schedule 1 (Transmission Owners Agreement)).

must be a framework to ensure that unit is available as intended. For a SATOA, MISO contends, that framework is the Transmission Owners Agreement.¹¹⁵

48. MISO disagrees with Stakeholder Participants' argument SATOAs are not unique in addressing N-2 situations because, Stakeholder Participants argue, generation is studied in the GIP to handle N-2 situations.¹¹⁶ MISO states that generation is studied in the GIP to ensure that it does not *cause* a violation during an N-2 contingency; the GIP does not evaluate a generating facility to identify if it *solves* an existing potential N-2 situation. Stakeholder Participants disagree with MISO's explanation – they note that both the MTEP and GIP processes use the same applied NERC contingency list, which includes many N-2 contingency scenarios, to determine transmission constraints that will require mitigation under the Tariff.¹¹⁷

49. MISO defends the approval process for the Waupaca Project in MTEP19, arguing that the evaluation and analysis of the SATOA was developed over several stakeholder meetings and with significant stakeholder review and input.¹¹⁸

50. According to MISO, requests that MISO take a more holistic view are beyond the scope of this proceeding.¹¹⁹ MISO states that the applicable standard is the justness and reasonableness of the SATOA provisions, not the allegedly greater efficiency of other alternatives.

51. The PJM Market Monitor asserts that the inclusion of batteries in the definition of transmission assets is an effort to expand the domain of assets subject to cost of service regulation and the associated guaranteed rates of return, at the cost of shrinking the domain of competitive markets.¹²⁰ The PJM Market Monitor contends that MISO simply assumes that there are benefits to treating storage as transmission and proceeds from that unsupported premise, but that nothing in MISO's filing distinguishes the salient features of storage from those of generation. The PJM Market Monitor states that MISO's arguments apply to combustion turbines as well as to batteries, and that a pumped hydro

¹¹⁵ *Id.* at 13-14. MISO states that, where a storage facility is classified as an NTA, the governing framework is provided by the generator interconnection agreement.

¹¹⁶ *Id.* at 6.

¹¹⁷ Stakeholder Participants Post-Technical Conference Answer at 4.

¹¹⁸ MISO Post-Technical Conference Answer at 9.

¹¹⁹ *Id.* at 14.

¹²⁰ PJM Market Monitor Post-Technical Conference Answer at 2.

facility would also meet MISO's stated criteria. The PJM Market Monitor asserts that MISO's arguments would support inclusion of any generation asset in the definition of transmission.

d. Commission Determination

52. We find that MISO's proposed evaluation criteria establish a just and reasonable and not unduly discriminatory or preferential framework for SATOAs to be evaluated in the MTEP using the same qualification requirements that the Commission has already approved for existing transmission project types, plus appropriate additional criteria specific to the SATOA.

53. We first find that MISO's proposed evaluation criteria will result in MISO choosing SATOAs that are properly characterized as transmission assets eligible for cost recovery in transmission rates. MISO will include a SATOA in the MTEP or select a SATOA in the MTEP for purposes of cost allocation only as the preferred solution to a particular Transmission Issue identified in MISO's regional MTEP process. More specifically, a storage facility will not qualify as a SATOA unless it is needed to resolve a discrete, non-routine transmission need (such as N-2 or stability issues) that only can be addressed by an asset under MISO's functional control, and not by a resource operating in MISO's markets. When included in the MTEP or selected in the MTEP for purposes of cost allocation through MISO's regional MTEP process for this purpose, and then actively operated in this manner, a SATOA will be used to provide a transmission service. By contrast, and as discussed further below, MISO's consideration of NTAs in its regional MTEP process addresses whether certain transmission facilities, including potential SATOAs, should be included in MISO's regional transmission plan (i.e., whether investment in those transmission facilities may be deferred, de-scoped, or withdrawn altogether).¹²¹ Consideration for that purpose does not result in an NTA (or, for that matter, any other resource operating in MISO's markets) being used to provide a transmission service.

54. Further, MISO's proposed evaluation criteria will enable MISO to determine that a SATOA will be the preferred solution to a particular Transmission Issue identified in MISO's regional MTEP process, as compared to a traditional wires solution, if the proposed SATOA has some relevant quality that a traditional transmission solution does not have (for instance, if it can solve the identified Transmission Issue more flexibly, if it has a smaller installation footprint, if it has lower cost, etc.). We find that MISO's discretion in choosing a SATOA is appropriately bounded by the technical requirements established in the proposed Tariff, the transparent evaluation in the planning process, and

¹²¹ MISO Transmission Planning Business Practice Manual No. 020-r22, § 4.3.1.2 (effective May 1, 2020).

the fact that, if sufficient information is not available to ensure the necessary functionality of the proposed SATOA in solving a particular non-routine transmission need, the proposed SATOA will not be included in the MTEP or selected in the MTEP for purposes of cost allocation over a traditional transmission solution.

55. We find that MISO's proposal is consistent with Commission precedent recognizing the viability of classifying electric storage facilities as transmission assets for cost-recovery purposes. In *Western Grid*, the Commission granted a petition for declaratory order requesting that the Commission classify several electric storage resources as transmission, finding in part that, when operated at CAISO's direction to provide voltage support and thermal overload protection for relevant transmission facilities, the electric storage resources would function as wholesale transmission facilities.¹²² We find that, while MISO's proposal to establish a framework for certain storage facilities to qualify as transmission assets is broader than *Western Grid*'s facility-specific proposal, the Commission stated in both *Western Grid* and the 2017 Policy Statement that *Western Grid* does not necessarily present the only scenario in which the Commission might conclude that storage costs can be included in transmission rates.¹²³

56. We find that MISO's proposal to require that a proposed SATOA be classified as one of the existing MTEP project types is just and reasonable and not unduly discriminatory or preferential. Under this approach, SATOAs must meet the same qualification requirements as required for traditional transmission solutions for all existing Commission-approved project types. MISO's proposal ensures that SATOAs have no competitive advantage as transmission solutions in the MTEP process and that they are evaluated in the same manner as traditional transmission solutions. In addition, this approach applies to SATOAs the cost allocation method applicable to existing MTEP project types, eliminating the need to establish a stand-alone cost allocation method if SATOAs were evaluated outside of the existing transmission project type framework. MISO asserts that, to be an owner of a transmission facility, the owner is required to be (or to become) a transmission owner and a party to the Transmission Owners Agreement, and adhere to all the rights, responsibilities, and obligations that are attendant to that role – including the obligation to construct and the requirement to transfer functional control to MISO.¹²⁴ We find that MISO's requirement for a SATOA owner to be or to become a transmission owner is just and reasonable and not unduly discriminatory or preferential because it ensures that a SATOA needed for the safe and reliable operation of the

¹²² *Western Grid*, 130 FERC ¶ 61,056 at P 43.

¹²³ *Id.* P 56; 2017 Policy Statement, 158 FERC ¶ 61,051 at 9.

¹²⁴ MISO Answer to Clean Energy Entities Answer at 6; MISO Answer to Protests of Filing at 9.

transmission system will be built, and, as discussed above, we agree that MISO's functional control over a SATOA is necessary to ensure its readiness for non-routine transmission needs.

57. We further find that the proposal ensures that SATOAs will be subject to adequate scrutiny in order to ensure that the SATOA is the preferred solution to an identified transmission need. Specifically, in addition to the requirements above (unique characteristics or circumstances, the need for functional control, and the application of current MTEP category criteria), a proposed SATOA would be subject to a comparative analysis to evaluate the ability of the SATOA to address the Transmission Issue in all hours that the Transmission Issue is identified to exist, including a life-cycle cost comparable to other proposed solutions. SATOAs would further be required to provide certain cost estimates to be considered as a potential transmission solution.

58. Although we find MISO's proposal to be just and reasonable and not unduly discriminatory or preferential, we agree with Stakeholder Participants that, while MISO has explained that SATOAs are not intended to address routine (i.e., N-1 and N-0) reliability Transmission Issues that could be addressed by a market solution, this restriction is not outlined in the proposed Tariff. We find that this clarification would significantly affect rates, terms, and conditions of service because MISO's need for functional control of a SATOA in order to address a non-routine Transmission Issue is fundamental to the SATOA qualifying as a transmission asset eligible for cost-based rate recovery. Therefore, we direct MISO to submit a compliance filing within 45 days of the date of this order proposing Tariff revisions to clarify that a storage facility will not be evaluated as a potential SATOA unless MISO requires functional control of the resource in order to resolve a non-routine (i.e., not an N-0 or N-1) reliability Transmission Issue that could not be addressed by a market solution.

59. We disagree with Stakeholder Participants' argument that MISO has provided insufficient information about how MISO will evaluate a potential SATOA that qualifies to be included in the MTEP as a Baseline Reliability Project to determine if it has sufficient economic benefits to instead be selected in the MTEP for purposes of cost allocation as a Market Efficiency Project.¹²⁵ As MISO explains in its answer,¹²⁶ MISO will determine whether a potential SATOA being reviewed as a Baseline Reliability Project will provide economic benefits, such as adjusted production cost savings, when the potential SATOA is operated as planned to address the identified reliability need. Based on this statement, our understanding is that, if MISO identifies sufficient economic benefits and the SATOA otherwise meets the Market Efficiency Project qualification

¹²⁵ Stakeholder Participants Post-Technical Conference Comments at 11.

¹²⁶ MISO Post-Technical Conference Answer at n.35.

criteria, MISO would select the SATOA in its MTEP for purposes of cost allocation as a Market Efficiency Project, which would then subject the SATOA to MISO's competitive developer selection process.

60. We disagree with Stakeholder Participants' argument that MISO has not addressed how it will evaluate a potential SATOA as an Other Project.¹²⁷ As MISO notes in its answer,¹²⁸ it evaluated the Waupaca Project as a reliability Other Project, which provides a blueprint for how MISO will evaluate potential SATOAs as Other Projects in the future. MISO will identify and evaluate potential SATOA solutions to a transmission need the same way it does today for a potential wires solution. If a potential storage facility meets the SATOA qualification requirements outlined in the Tariff, then MISO will evaluate it the same as any potential wires solution, and, if chosen, the SATOA will be listed in Appendix A as one of the existing transmission project categories in the Tariff.¹²⁹

61. We also disagree with Stakeholder Participants' argument that MISO's proposed Tariff is lacking critical details because it contains no clarification that, if there is no difference between the costs and benefits of implementing a SATOA versus a wires solution, or if there is insufficient information to approve a proposed SATOA, MISO will include the wires solution in the MTEP or select the wires solution in the MTEP for purposes of cost allocation.¹³⁰ We find that MISO's Tariff language clearly states that the storage resource must exhibit unique capabilities to be eligible for SATOA designation, and that MISO will undergo a comparative evaluation of the SATOA versus other potential solutions to the Transmission Issue; absent a finding that the SATOA is the preferred transmission solution, the SATOA will not be included in the MTEP or selected in the MTEP for purposes of cost allocation.

¹²⁷ Stakeholder Participants Post-Technical Conference Comments at 12.

¹²⁸ MISO Post-Technical Conference Answer at n.39.

¹²⁹ *Id.* at 13.

¹³⁰ Stakeholder Participants Post-Technical Conference Comments at 10, 21.

62. We disagree with protesters' arguments that MISO's evaluation criteria are unjust and unreasonable because they are ambiguous or subjective.¹³¹ We find that MISO's proposed Tariff revisions, as clarified in MISO's post-technical conference comments and subject to the clarifications in the compliance filing directed herein, are sufficiently clear and are just and reasonable. Specifically, MISO's proposed Tariff language provides several discrete examples of how these criteria might be met, and the compliance filing directed herein will make clear that a storage facility should not be evaluated as a potential SATOA to address routine reliability Transmission Issues. We also disagree with the PJM Market Monitor's contention that meeting the criteria is subject to the discretion of the transmission owner who could affect applicability of the stated criteria.¹³² The proposed Tariff language puts MISO in charge of evaluating the appropriateness of the proposed SATOA as the preferred solution to the Transmission Issue, and, as MISO states, the application of the "unique characteristics or circumstances" selection criteria will be reviewed in multiple, transparent stakeholder meetings for each annual MTEP process.¹³³

63. We are not persuaded by protesters' arguments that MISO's proposal is unduly discriminatory toward non-transmission owners seeking to develop storage for transmission uses.¹³⁴ As protesters assert, a SATOA is most likely to qualify as a Baseline Reliability Project or Other Project, and Order No. 1000 allows transmission owners to maintain a right of first refusal for such categories of transmission projects.¹³⁵ However, MISO's proposal does not make any changes to existing Commission-approved transmission project types – once a storage project qualifies as one of the existing categories of transmission projects and MISO chooses that SATOA as the preferred solution to an identified Transmission Issue, the SATOA should be subject to

¹³¹ FirstLight Protest at 9-11; AMP Protest at 6-13; GlidePath Protest at 4; PJM Market Monitor Post-Technical Conference Comments at 2.

¹³² PJM Market Monitor Post-Technical Conference Comments at 2.

¹³³ MISO Post-Technical Conference Comments at 10.

¹³⁴ Joint MISO Stakeholder Sector Participants Protest at 10; Invenergy Protest at 3-7; EPSA Protest at 3; LSP Transmission Protest at 3; Michigan Commission Protest at 13-14; GlidePath Protest at 7; Public Interest Organizations Comments at 6; Stakeholder Participants Post-Technical Conference Comments at 13.

¹³⁵ Order No. 1000 does not require MISO to eliminate its existing federal right of first refusal for Other Projects and Baseline Reliability Projects because those projects are local transmission facilities that are not selected in a regional transmission plan for purposes of cost allocation. Order No. 1000, 136 FERC ¶ 61,051 at P 262; Order No. 1000-A, 139 FERC ¶ 61,132 at P 425.

the same requirements as any other transmission project in that category. Protesters' concerns about those existing requirements, such as the right of first refusal, implicate aspects of the Tariff that MISO does not propose to change in the instant filing and are therefore beyond the scope of this proceeding.

64. We are not persuaded by arguments that MISO has not justified its proposal to treat SATOAs as transmission assets because all storage facilities (and similar supply-side resources) can provide the same benefits acting as a market resource.¹³⁶ As MISO notes, the Commission has already found that the costs of storage facilities operating as transmission assets are properly recoverable in transmission rates in appropriate circumstances.¹³⁷ In this case, a storage resource will not be included in the MTEP or selected in the MTEP for purposes of cost allocation as a SATOA unless MISO requires functional control of the asset in order to resolve a non-routine Transmission Issue; as MISO explains, MISO would not have such functional control over a market resource. We also disagree with the PJM Market Monitor's statement that MISO's proposal would support inclusion of any generation asset in the definition of transmission.¹³⁸ A storage asset must meet a multitude of requirements in order to qualify as a SATOA, as explained above – it must meet the criteria applicable to the existing MTEP, show unique characteristics not applicable to traditional transmission solution, resolve the Transmission Issue under MISO's functional control, and pass muster in various comparative analyses against other potential solutions. These specific requirements will ensure that a specific SATOA is uniquely situated to act as the preferred solution to a specific Transmission Issue.

65. We disagree with Stakeholder Participants' argument that MISO's proposal violates Order No. 1000 because, they argue, it prevents storage facility NTAs from participating in the MTEP process.¹³⁹ As Stakeholder Participants point out, Order No. 1000 requires that, when evaluating the merits of alternative transmission solutions in the transmission planning process, transmission providers must consider proposed NTAs on a comparable basis.¹⁴⁰ However, in explaining that requirement, the Commission

¹³⁶ FirstLight Protest at 10; GlidePath Protest at 4; PJM Market Monitor Post-Technical Conference Comments at 1-2; Stakeholder Participants Post-Technical Conference Comments at 8, 13.

¹³⁷ MISO Post-Technical Conference Answer at 15 (citing 2017 Policy Statement, 158 FERC ¶ 61,051 at 2; *Western Grid*, 130 FERC ¶ 61,056 at PP 44-46).

¹³⁸ PJM Market Monitor Post-Technical Conference Answer at 2.

¹³⁹ Stakeholder Participants Post-Technical Conference Comments at 19.

¹⁴⁰ Order No. 1000, 136 FERC ¶ 61,051 at P 148.

stated that Order No. 1000 does not require more in a regional transmission planning process than considering proposed NTAs as compared to potential transmission solutions, similar to what the Commission in Order No. 890¹⁴¹ required for local transmission planning.¹⁴² MISO's SATOA proposal does not change MISO's existing process to consider transmission and NTAs on a comparable basis, which the Commission has found complies with the requirements of Order No. 890 and Order No. 1000.¹⁴³ As noted above, a SATOA will be evaluated in the regional MTEP process as a potential transmission facility, while MISO's consideration of NTAs in its regional MTEP process addresses whether certain transmission facilities, including potential SATOAs, should be included in the MTEP or selected in the MTEP for purposes of cost allocation (i.e., whether investment in those transmission facilities may be "deferred, de-scoped, or withdrawn as appropriate...").¹⁴⁴ Thus, both SATOAs and NTAs will be considered appropriately in the MTEP process.

66. In addition, to the extent that Stakeholder Participants' arguments are about cost recovery for NTAs, the Commission explained that, while the comparison of NTAs to transmission facilities may affect whether certain transmission facilities are selected in a regional transmission plan, the issue of cost recovery for NTAs is beyond the scope of the cost allocation reforms adopted in Order No. 1000, which address allocating the costs of new regional transmission facilities.¹⁴⁵ Under MISO's proposal, storage facilities that can be used to solve an identified Transmission Issue appropriately will be considered in the transmission planning process as if they are traditional transmission solutions, while storage facilities that do not meet that standard may be considered as NTAs and will be

¹⁴¹ *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 118 FERC ¶ 61,119, *order on reh'g*, Order No. 890-A, 121 FERC ¶ 61,297 (2007), *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh'g*, Order No. 890-C, 126 FERC ¶ 61,228, *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009).

¹⁴² Order No. 1000-A, 139 FERC ¶ 61,132 at P 193.

¹⁴³ *Midwest Indep. Transmission Sys. Operator, Inc.*, 142 FERC ¶ 61,215, at P 48 (2013) (finding that MISO's process outlining how stakeholders may propose NTAs and how MISO will evaluate such alternatives complies with the comparability principle).

¹⁴⁴ MISO Transmission Planning Business Practice Manual No. 020-r22, § 4.3.1.2 (effective May 1, 2020).

¹⁴⁵ Order No. 1000, 136 FERC ¶ 61,051 at P 779 and Order 1000-A, 139 FERC ¶ 61,132 at P 738.

considered in the transmission planning process the same way as other NTAs and other resources operating in MISO's markets are considered.

67. We also disagree with arguments that MISO's proposal for a storage facility to qualify as a transmission asset violates Order No. 841.¹⁴⁶ Similar to *Western Grid*, MISO proposes in the instant filing that SATOAs may only participate in MISO's markets to the extent necessary to allow the SATOA to be ready to receive energy from the transmission system and to inject energy into the transmission system to provide the services for which it was included in the MTEP or selected in the MTEP for purposes of cost allocation.¹⁴⁷ MISO explains that this will ensure that SATOAs, which are eligible for cost recovery in transmission rates, are limited to only those storage facilities that are performing a transmission-specific function under MISO's functional control and are properly characterized as transmission assets. As discussed above, we find that MISO's proposal is a just and reasonable and not unduly discriminatory or preferential framework for certain storage facilities to qualify as transmission assets.¹⁴⁸ We do not believe that MISO's proposal is contrary to Order No. 841. Order No. 841 does not address how electric storage resources may qualify as transmission and, indeed, found such issues to be outside the scope of that proceeding.¹⁴⁹ Instead, in Order No. 841, the Commission found that existing RTO/ISO *market rules* were unjust and unreasonable in light of barriers that those market rule presented to the participation of electric storage resources in the RTO/ISO markets. The Commission recently addressed MISO's second filing in compliance with Order No. 841,¹⁵⁰ and our approval of this filing will not limit the reforms the Commission adopted in Order No. 841 nor counteract MISO's compliance with the Commission's directives.

¹⁴⁶ Joint MISO Stakeholder Sector Participants Protest at 19-20; EPSA Protest at 3-4; Michigan Commission Protest at 5.

¹⁴⁷ See *infra* at P 88.

¹⁴⁸ MISO states in its post-technical conference comments that the proposed Tariff provisions reflect the start of MISO's phased approach to implementation of storage-as-transmission and that MISO may consider the potential dual functionality of a storage facility as both a transmission asset and as a market resource in future proceedings. We note that no such proposal is currently before the Commission, and that arguments regarding any such future filing are beyond the scope of this proceeding.

¹⁴⁹ Order No. 841, 162 FERC ¶ 61,127 at PP 329, 331 (finding that issues protesters raised with respect to compensation or cost recovery under the 2017 Policy Statement are out of scope).

¹⁵⁰ *Midcontinent Indep. Sys. Operator, Inc.*, 172 FERC ¶ 61,120 (2020).

68. We disagree with the argument that MISO has not justified its approval of a SATOA based on the need for functional control of the asset in order to resolve a non-routine transmission need because, protesters argue, MISO could contract with a third party for storage asset services.¹⁵¹ As MISO Transmission Owners note, this approach would require MISO and MISO transmission owners to rely on a non-transmission owner to fulfill their obligation to ensure the safe and reliable operation of the transmission system. We accept MISO's explanation of the importance of an existing framework to ensure that the resource is available as needed to resolve a non-routine Transmission Issue, and agree that this framework is reasonably provided by the Transmission Owners Agreement, which confers an obligation to build and requires the relinquishment of functional control to MISO.

69. We are not persuaded by Stakeholder Participants' argument SATOAs are not unique in addressing N-2 reliability situations because, they argue, generation is studied in the GIP process to handle N-2 situations.¹⁵² We accept MISO's explanation that proposed generation is studied in the GIP to ensure that it does not cause a reliability violation during an N-2 contingency; the GIP does not evaluate a generating facility to identify if it solves an existing potential N-2 reliability situation. In MISO, an interconnection customer is responsible for 100% of network upgrade costs, with a possible 10% reimbursement for network upgrades that are 345 kV and above.¹⁵³ Because of MISO's pricing policy, the generating facility does not address any issues during N-2 contingencies that are unrelated to the addition of the generating facility. We find that N-2 contingencies can occur for reasons outside of the addition of a new generating facility; therefore, they need to be addressed in a way that is commensurate with other transmission issues.

70. We do not address protests of the approval process for the Waupaca Project in MTEP19.¹⁵⁴ We address only what is before us in this proceeding – MISO's proposed Tariff revisions to allow for the inclusion or selection of a storage facility as a transmission-only asset in the MTEP. The evaluation process for the specific Waupaca Project is outside the scope of the SATOA framework established by MISO's proposed Tariff revisions. We note that MISO considered the Waupaca Project through its open and transparent transmission planning process, which provided all stakeholders with the

¹⁵¹ Stakeholder Participants Post-Technical Conference Comments at 13-15; Thomas Rose Post-Technical Conference Comments at 3-4.

¹⁵² Stakeholder Participants Post-Technical Conference Comments at 11-12, 16.

¹⁵³ *Midwest Indep. Transmission Sys. Operator, Inc.*, 129 FERC ¶ 61,060, at P 8 (2009).

¹⁵⁴ Stakeholder Participants Post-Technical Conference Comments at 23.

ability to participate and provide input into MISO's evaluation of the project. To the extent that protestors have concerns with MISO's evaluation process, they may file a separate complaint under FPA section 206.

71. We disagree with FirstLight's assertion that a Commission determination in this proceeding would prejudice Commission policy resulting from the staff-led Grid Enhancing Technologies workshop in Docket No. AD19-19-000.¹⁵⁵ We note that, while the staff-led workshop considered the question of whether there are circumstances in which an electric storage resource could be operated such that it acts as a transmission asset, the purpose of the workshop was to gather information. However, the Commission has not taken an action or made any final determinations in the Grid Enhancing Technologies proceeding, whereas MISO has met its burden under FPA section 205 to show that its proposed Tariff revisions are just, reasonable, and not unduly discriminatory or preferential. If MISO's Tariff revisions conflict with any such future policy, MISO may be required to adjust its Tariff.¹⁵⁶

72. Finally, having found MISO's proposal to be just and reasonable, we need not address the merits of the alternative proposals suggested by the protestors.¹⁵⁷

2. Operating Guides

a. Initial Filing and Post-Technical Conference Clarifications

73. MISO states that operation of a SATOA in real time will be under MISO's functional control.¹⁵⁸ For each SATOA included in the MTEP or selected in the MTEP for purposes of cost allocation, MISO will develop an operating guide specifying the operating practices applicable to the SATOA and consistent with the system performance requirements determined through the planning study supporting the inclusion or selection

¹⁵⁵ FirstLight Protest at 1.

¹⁵⁶ See *Indianapolis Power & Light Co. v. Midcontinent Indep. Sys. Operator, Inc.*, 158 FERC ¶ 61,107, at P 71 (2017).

¹⁵⁷ *Cal. Indep. Sys. Operator Corp.*, 128 FERC ¶ 61,282, at P 31 (2009) (finding that, because the Commission found the proposal to be just and reasonable, it need not assess the justness and reasonableness of an alternative proposal); *Entergy Servs., Inc.*, 116 FERC ¶ 61,275, at P 32 (2006) (finding that "[a] proposal does not need to be perfect, or the most desirable way of doing things, it need only be just and reasonable").

¹⁵⁸ Filing, Transmittal Letter at 13.

of the SATOA in the MTEP.¹⁵⁹ The operating guide will include limitations on the operation of the SATOA above the maximum capacity determined to be needed to address the Transmission Issue. More specifically, MISO states that its planning staff will coordinate with the owner of the SATOA, MISO Operations, and the transmission operator to develop the operating guide that establishes conditions for which the SATOA should be discharged and charged to meet the anticipated planning objective. MISO states that the operating guide will also establish boundaries for operation that will be consistent with this objective and will reflect the unique operating parameters of the individual SATOA. For example, MISO asserts that a SATOA planned as a reliability asset will not be operated to relieve congestion; however, the storage device may be operated to avoid load shedding in declared emergency conditions. MISO notes that it will post the Critical Energy Infrastructure Information (CEII)-redacted operating guide on its Open Access Same-Time Information System website.¹⁶⁰

74. In its post-technical conference comments, MISO provides some further clarifications of its proposal to establish an operating guide for each SATOA. MISO states that an operating guide will be created for each SATOA approved for inclusion in the MTEP, similar to the creation of any other operating guide for a transmission facility.¹⁶¹ MISO explains that an operating guide gives operators, both for the transmission asset and MISO, clear directions for managing the transmission asset to maintain the reliability of the transmission system for the range of likely system conditions.¹⁶² MISO asserts that this information could include processes for communication, pre-planned actions of the transmission operator and MISO, and conditions and circumstances that would trigger those actions to maintain transmission system reliability.¹⁶³ MISO notes that an operating guide for a SATOA will leverage this existing practice between MISO as the Reliability Coordinator and the transmission operators to ensure that the SATOA is operated as was planned in the MTEP.

75. MISO provides specific examples of the information to be contained in the operating guide, including: (1) the purpose of the SATOA facility; (2) coordination requirements between the transmission operator and MISO as the Reliability Coordinator for charging and discharging; (3) area or system load levels at which reliability issues may occur; (4) line facility outages that in combination could cause a reliability concern;

¹⁵⁹ *Id.* at 21, Tab A, proposed MISO Tariff, att. FF, § II.G.2 (71.0.0).

¹⁶⁰ *Id.*, Transmittal Letter at 21 n.100.

¹⁶¹ MISO Post-Technical Conference Comments at 46.

¹⁶² *Id.* at 46-47.

¹⁶³ *Id.* at 47.

(5) operational requirements of the SATOA needed to resolve reliability issues; (6) communication protocols, including that the SATOA may be discharged either by verbal communication between the Reliability Coordinator and the transmission operator and/or that it may be discharged when triggered by automatic protective relay operation following a critical contingency; (7) limits on the operation of the SATOA above the maximum capacity determined to be needed to address the Transmission Issue; and (8) protocols to reflect that the SATOA will not be used for congestion management when market congestion management protocols are available.¹⁶⁴

76. MISO explains that each operating guide is reviewed annually for usefulness and accuracy.¹⁶⁵ MISO notes that, while the operating guide may be updated to reflect changes in system topology, the operating guide will reflect the operating practices applicable to the SATOA “consistent with the system performance requirements determined through the planning study supporting the selection of the SATOA for inclusion in the MTEP.”¹⁶⁶ MISO states that the operating guide would also outline that MISO as the Reliability Coordinator, or the transmission operator, could call on a SATOA during emergency conditions; however, MISO asserts that this would be a rare event and require coordination between MISO and the transmission operator.¹⁶⁷ Finally, MISO states that the operating guide is not expected to be public, as operating guides generally include non-public information.

b. Protests and Post-Technical Conference Comments

77. MISO Transmission Owners support MISO’s proposal for operating guides.¹⁶⁸ MISO Transmission Owners explain that, as with all transmission assets subject to operating guides and under MISO’s functional control, SATOAs would strictly follow the guidelines provided in the operating guide developed for the device and would be subject to the circumstances and conditions for which the project was included in Appendix A of the MTEP. For example, MISO Transmission Owners state that a reliability-based SATOA would only be used for the intended purpose for which it was

¹⁶⁴ *Id.*

¹⁶⁵ *Id.*

¹⁶⁶ *Id.* at 47-48 (citing Filing, Tab A, proposed MISO Tariff, att. FF, § II.G.2 (71.0.0)).

¹⁶⁷ *Id.* at 48. MISO notes that the MISO Emergency Operating Procedures, which are vetted and approved by stakeholders, define the specific actions taken by MISO during declared transmission and capacity emergencies. *Id.* n.134.

¹⁶⁸ MISO Transmission Owners Post-Technical Conference Comments at 8.

studied in the MTEP (e.g., thermal, voltage, or stability issues) and the operating guide and the SATOA's function always would be coordinated between the Reliability Coordinator and transmission operator functions. MISO Transmission Owners agree with MISO that, although the operating guide would specify that MISO or the transmission operator could call on the SATOA during emergency conditions, and would describe the operation of the SATOA during these conditions, such an event would be rare. MISO Transmission Owners further argue that, if any other market mitigation were available to address the relevant issue (e.g., redispatch, reconfiguration, etc.), MISO would prioritize those mitigations before calling on a SATOA.¹⁶⁹

78. MISO Transmission Owners also generally support considering with stakeholders whether it is possible to create publicly available versions of SATOA operating guides.¹⁷⁰ MISO Transmission Owners explain that this approach provides stakeholders with the opportunity to weigh significant grid security, including CEII material and market sensitivity issues, against the importance of transparency.

79. Stakeholder Participants do not support MISO's proposal to rely almost entirely on operating guides to implement SATOAs, notwithstanding that the operating guides have not been developed and therefore cannot be evaluated to determine the justness and reasonableness of the SATOA construct.¹⁷¹ Stakeholder Participants note that MISO has not readily used operating guides with a resource that injects energy.¹⁷² Stakeholder Participants contend that MISO has not explained how operating guides will be developed in an open and transparent process, noting that MISO's stakeholder process does not involve public review and development of operating guides.¹⁷³ Stakeholder Participants state that critical details, such as how MISO will handle the discharge of multiple SATOA projects or how MISO will ensure that the SATOAs' operation will not impact markets and congestion, should not be left to non-public operating guides.¹⁷⁴ Stakeholder Participants further argue that MISO failed to explain how it will ensure proper oversight and enforcement of the use of its operating guides to prevent abuse and

¹⁶⁹ *Id.* at 8-9.

¹⁷⁰ *Id.* at 9.

¹⁷¹ Joint MISO Stakeholder Sector Participants Protest at 25; Stakeholder Participants Post-Technical Conference Comments at 5.

¹⁷² Stakeholder Participants Post-Technical Conference Comments at 44.

¹⁷³ *Id.* at 5.

¹⁷⁴ *Id.* at 6, 45.

market manipulation.¹⁷⁵ For instance, protesters argue that there are no penalties for operating outside of the bounds of the operating guide and that MISO has proposed no transparent means to monitor compliance with the operating guides.¹⁷⁶ Stakeholder Participants state that storage could thus be used in ways to benefit a utility that owns generation or purchases power under a long-term power-purchase agreement, or be dispatched to reap economic benefits via other means.¹⁷⁷

80. Stakeholder Participants state that MISO has disallowed the use of operating guides and Remedial Action Schemes to address impacts in the GIP, explaining that it could jeopardize grid reliability because MISO cannot know the state of the grid and respond quickly enough when these items would be used.¹⁷⁸ Yet, Stakeholder Participants argue, MISO now intends to manage numerous SATOAs, amounting to tens of thousands of cycles per year.¹⁷⁹ Stakeholder Participants argue that MISO has not demonstrated that it can now handle these logistics. Stakeholder Participants further contend that, if MISO can now manage these operating guides without impacting the reliability of the grid, their use should be allowed to address GIP impacts as well.¹⁸⁰

81. Thomas Rose argues that a specialized third-party storage provider would be in the best position to manage the performance risk of a facility based on stringent penalties for non-performance per the operating guide in the contract.¹⁸¹

c. Answer

82. MISO argues that Stakeholder Participants' speculations about potential gaming of the use of the SATOA are without merit.¹⁸² MISO asserts that, as with all other operating guides currently used for transmission facilities, the operating guide associated with each

¹⁷⁵ *Id.* at 5, 44-45.

¹⁷⁶ Joint MISO Stakeholder Sector Participants Protest at 45; Clean Energy Entities Answer at 13; Stakeholder Participants Post-Technical Conference Comments at 44.

¹⁷⁷ Stakeholder Participants Post-Technical Conference Comments at 44-45.

¹⁷⁸ *Id.* at 6, 45.

¹⁷⁹ *Id.* at 6, 46.

¹⁸⁰ *Id.* at 46.

¹⁸¹ Thomas Rose Post-Technical Conference Comments at 4.

¹⁸² MISO Post-Technical Conference Answer at 16.

SATOAs will specify the operating practices consistent with the performance requirements to meet the identified transmission need. MISO also disagrees with the Stakeholder Participants' argument about the use of operating guides in the GIP, noting that they confuse the application of an operating guide to operate the SATOA to serve the transmission need for which it was selected with the use of an operating guide to resolve constraints caused by a generating facility in the GIP.¹⁸³

d. Commission Determination

83. We find MISO's proposal to create an operating guide for each SATOA to be just and reasonable. We find that MISO has adequately explained that, for each SATOA approved in the MTEP, it will strictly follow the detailed guidelines provided in the operating guide for each device, as with all transmission assets subject to operating guides and under MISO's functional control. The information MISO proposes to include in the operating guide is comparable to that provided in operating guides for traditional transmission assets.

84. We dismiss as speculative Stakeholder Participants' argument that MISO has not demonstrated that it can handle the logistics of managing the operating guides of multiple SATOA projects.¹⁸⁴ MISO already has multiple operating guides in place for its existing transmission facilities, and Stakeholder Participants have not provided any support for their suggestion that MISO would not be able to manage more operating guides associated with SATOAs.

85. We are not persuaded by Stakeholder Participants' contention that it is not possible to determine the justness and reasonableness of MISO's SATOA construct when MISO intends to rely almost entirely on operating guides, which are confidential and not reviewed by stakeholders.¹⁸⁵ MISO's proposed use of confidential operating guides for SATOAs is no different from MISO's current use of operating guides for traditional transmission assets. However, we encourage MISO to work with stakeholders to explore creating a publicly available version of SATOA operating guides, noting that MISO Transmission Owners indicated that they would support this approach.¹⁸⁶

86. We also find that MISO has sufficiently described how operating guides will be implemented for SATOAs. We disagree with protesters' arguments that MISO has failed

¹⁸³ *Id.* at 19.

¹⁸⁴ Stakeholder Participants Post-Technical Conference Comments at 6, 46.

¹⁸⁵ *Id.* at 5; Joint MISO Stakeholder Sector Participants Protest at 25.

¹⁸⁶ MISO Transmission Owners Post-Technical Conference Comments at 9.

to explain how it will ensure proper oversight and enforcement of the use of its operating guides, and that SATOA owners may therefore commit some kind of abuse or market manipulation.¹⁸⁷ The operating guides contain specific operating practices applicable to the SATOA, consistent with the system performance requirements determined through the planning study supporting the inclusion of the SATOA in the MTEP or the selection of the SATOA in the MTEP for the purposes of cost allocation, including limitations on the operation of the SATOA above the maximum capacity determined to be needed to address the Transmission Issue. The operating guide gives operators, both for the SATOA and MISO, clear directions for managing the transmission asset, including coordination and communication requirements between the SATOA operator and MISO. In addition, the Transmission Owners Agreement gives MISO broad enforcement authority, including the authority to impose penalties or sanctions on any transmission owner for intentionally ignoring or disobeying any material directive from MISO, such as operating orders.¹⁸⁸ Protesters do not explain how a SATOA owner might operate the SATOA outside the bounds of the operating guide to reap some economic benefit; given the explicit instructions to be included in the operating guide and the enforcement authority in the Transmission Owners Agreement, we see little potential for gaming or market abuse.

87. We find outside the scope of the proceeding Stakeholder Participants' argument that, if MISO can manage multiple operating guides for SATOAs without impacting the reliability of the grid, then their use should be allowed to address GIP impacts as well.¹⁸⁹ Moreover, as MISO notes in its answer, there is a difference between using an operating guide for a SATOA to address an identified transmission need and using an operating guide to resolve constraints caused by a generating facility in the GIP. We also dismiss as outside of the scope of the proceeding Thomas Rose's argument that a third-party storage provider would be in the best position to manage the performance risk of the facility.¹⁹⁰

¹⁸⁷ Joint MISO Stakeholder Participants Protest at 25; Clean Energy Entities Answer at 13; Stakeholder Participants Post-Technical Conference Comments at 5-6, 44-45.

¹⁸⁸ Transmission Owners Agreement § V.A.

¹⁸⁹ Stakeholder Participants Post-Technical Conference Comments at 46.

¹⁹⁰ Thomas Rose Post-Technical Conference Comments at 4.

3. SATOA Market Activities and Market Impacts

a. Initial Filing and Post-Technical Conference Clarifications

88. MISO asserts that the SATOA owner is responsible for maintaining the necessary state of charge to serve the transmission function for which it was approved in the MTEP, and that MISO will exercise functional control of the SATOA for transmission purposes only.¹⁹¹ MISO's proposed Tariff language states that a SATOA may only participate in MISO's markets to the extent necessary to receive energy from the transmission system and to inject energy into the transmission system to provide services for which it was included in the MTEP, and that a SATOA may not otherwise participate in MISO's markets or Planning Resource Auction "unless and until the Tariff includes provisions for storage facilities recovering cost-based revenues as transmission assets to also participate in these or other Market Activities."¹⁹² MISO proposes that any revenues collected from the SATOA's market activities directed under MISO's functional control shall be credited through transmission rates in a manner consistent with the treatment of costs associated with the project category in transmission rates. MISO further proposes that costs resulting from a SATOA's market activities directed under MISO's functional control shall be collected through transmission rates in a manner consistent with the treatment of costs associated with the transmission project type in which the SATOA is included in Appendix A to the MTEP.

89. MISO also proposes Tariff modifications to reflect that the SATOA will derive revenues or incur costs when charging and discharging but will not be eligible to serve as a market resource.¹⁹³ Specifically, the SATOA owner will need a registered market participant to receive energy net costs, i.e., the difference between Real-Time Ex Post Locational Marginal Price for Non-Excessive Energy and the charge for Non-Excessive Energy withdrawals. Under the proposal, the market participant for a SATOA will be credited the applicable Real-Time Ex Post Locational Marginal Price for Non-Excessive Energy and will be charged for Non-Excessive Energy withdrawals. The SATOA market participant then must provide the net revenues back to the transmission owner, and those net revenues will offset the transmission revenue requirement associated with the resource. The SATOA will have its own commercial pricing node. MISO asserts that the treatment of the SATOA is different from the Commission's requirements for electric

¹⁹¹ Filing, Transmittal Letter at 6.

¹⁹² *Id.*, Tab A, proposed MISO Tariff, att. FF, § I.C (71.0.0).

¹⁹³ *Id.*, Transmittal Letter at 23, Tab A, proposed MISO Tariff, Module C, § 40.3.3.3.a.i (44.0.0).

storage resources under Order No. 841.¹⁹⁴ In particular, whereas Order No. 841 requires that a resource using the participation model for electric storage resources be dispatchable and able to set the wholesale market clearing price as both a wholesale seller and wholesale buyer, MISO states that its proposed provisions make clear that the SATOA will *not* set the price; rather, the SATOA will be a price taker.

90. Finally, MISO's filing states that compliance with the Commission's standards of conduct (Standards of Conduct) shall be as outlined in the Commission's regulations and Appendix A of the Transmission Owner's Agreement, and asserts that the Standards of Conduct do not need to be addressed separately for purposes of including the SATOA in the MTEP.¹⁹⁵ Rather, MISO contends, the Standards of Conduct apply independently of the SATOA's inclusion in the transmission system.

91. In its post-technical conference comments, MISO provides some further clarification of how MISO will direct a SATOA's market activities under MISO's functional control.¹⁹⁶ MISO notes that, in practice, functional control is accomplished through coordinated operations between MISO as Reliability Coordinator and the transmission owner (i.e., SATOA owner) as the transmission operator through the NERC Reliability Functional Model. MISO states that the same functional control requirements that apply to transmission lines and substations also apply to a SATOA.¹⁹⁷ MISO explains that it (as the Reliability Coordinator) is responsible for maintaining reliability and compliance with NERC requirements, and will direct the SATOA owner to operate a transmission facility as needed to ensure reliability.¹⁹⁸ MISO states that its proposal ensures that a SATOA will be available to meet a transmission need because the SATOA is expected, and will be instructed, to be ready to charge or discharge to meet the transmission need in accordance with performance requirements specified in the operating guide and as required by the MISO Tariff.¹⁹⁹ MISO explains that "meeting" a transmission need refers to the MISO Reliability Coordinator directing the SATOA owner to charge or discharge to maintain system reliability for the transmission need identified in the operating guide. In contrast, being "ready to serve" the transmission needs refers to the SATOA owner operating its transmission facility to ensure that the

¹⁹⁴ *Id.*, Transmittal Letter at 23 (citing Order No. 841, 162 FERC ¶ 61,127 at P 20).

¹⁹⁵ *Id.* at 24.

¹⁹⁶ MISO Post-Technical Conference Comments at 23.

¹⁹⁷ *Id.* at 24.

¹⁹⁸ *Id.* at 25.

¹⁹⁹ *Id.* at 27.

SATOA is in the proper state to be able to meet its operating requirements established in its operating guide.²⁰⁰ MISO states that the SATOA owner will be responsible for the purchase of energy when charging to be ready to serve the transmission need.²⁰¹

92. MISO explains that coordination between the Reliability Coordinator and the SATOA owner may vary based on circumstances.²⁰² For example, MISO as the Reliability Coordinator may direct the SATOA to charge/discharge at a specific time to be ready to serve the transmission need, or MISO may rely on the SATOA owner to perform its function at a certain time and coordinate with the SATOA owner on its preparation for readiness. MISO states that it may, as the Reliability Coordinator, direct the SATOA owner to manually operate the SATOA, or the SATOA owner may automate the SATOA to discharge by a protective relay action to rapidly avert a stability issue.²⁰³ MISO explains that both circumstances may be included in the applicable operating guide, and that the SATOA will be operated like other transmission assets under MISO's functional control.²⁰⁴

93. MISO states that any entity that is a market participant could serve that same role for a SATOA (e.g., an entity affiliated with the SATOA or an agent representing the SATOA owner under an agreement).²⁰⁵ MISO clarifies that neither the SATOA owner nor the market participant representing the SATOA would have market-based rate authority, and could not set market price because it will not be able to submit bids or offers into the MISO markets.²⁰⁶ MISO notes that a market participant will serve as the entity with which to settle the costs and revenues of the SATOA's charging and discharging activities, and does not play a role in the functional control of those activities. MISO reiterates that the existing Standards of Conduct for transmission owners will apply to SATOAs.²⁰⁷

²⁰⁰ *Id.* at 25.

²⁰¹ *Id.* at 26.

²⁰² *Id.*

²⁰³ *Id.* at 24.

²⁰⁴ *Id.* at 25.

²⁰⁵ *Id.* at 30.

²⁰⁶ *Id.* at 30-31.

²⁰⁷ *Id.* at 31 (citing 18 C.F.R. pt. 358).

94. MISO's post-technical conference comments also further clarify a SATOA's market impacts. MISO states that the SATOA would not affect the capacity, ancillary services, or day-ahead energy markets because it is not eligible to participate in these markets.²⁰⁸ With respect to the real-time energy market, MISO states that a SATOA's operation could have "some incidental impact" on this market, similar to the impact due to the operation of other transmission assets.²⁰⁹ Specifically, MISO states that the operation of, or changes to, any transmission asset – such as switching in or out lines or transformers, operating circuit breakers, modifying ratings, or adding facilities – will change grid topology or system capability, and therefore affect wholesale energy markets as part of maintaining transmission system reliability. MISO reiterates that, like other transmission assets that act to directly control the flow on transmission lines, SATOAs will be operated in accordance with operating guides to address the Transmission Issue in the most efficient and practical way.

95. MISO states that SATOAs will be price takers in the market and will be charged or credited the Real-Time Ex Post Locational Marginal Price for Non-Excessive Energy, which is the Locational Marginal Price at the commercial pricing node at which the SATOA's injection or withdrawal occurs.²¹⁰ MISO clarifies that a specific commercial pricing node will be established for this purpose, with no other trading activities allowed at this node.

96. MISO states that, because it expects SATOAs to be used in a limited manner, the impact on the energy market will likely be *de minimis*.²¹¹ MISO notes that a SATOA will increase demand on the system when charging, requiring additional energy from unloaded capacity of an existing generation asset, which could increase the Locational Marginal Price. Likewise, the Locational Marginal Price could decrease when the SATOA is discharging. MISO explains that, in this latter case, a SATOA could displace all or a portion of a marginal or infra-marginal generation resource, depending on the size of the resource relative to the SATOA.

97. MISO emphasizes that the SATOA's impact on the Locational Marginal Price critically depends on whether any nearby transmission elements are binding constraints, and that this impact is no different than what can occur due to planned or forced outages,

²⁰⁸ *Id.* at 27.

²⁰⁹ *Id.* at 28.

²¹⁰ *Id.*

²¹¹ *Id.* at 29.

or transmission system reconfigurations.²¹² Specifically, MISO notes that the operation of a SATOA is planned to avoid the occurrence of an N-1 binding constraint condition that is not mitigated in the planning process, and that any impacts that do occur will not occur for normal operating conditions. MISO further notes that the proposed Tariff provisions prohibit SATOAs from being selected in the MTEP process in cases where the storage facility would be expected to resolve a constraint as a market resource does, via congestion management. Instead, a SATOA will generally be selected to address lower probability, more infrequent contingencies (i.e., non-N-1 contingencies) or stability issues.²¹³

98. MISO lastly provides some clarification as to a SATOA's emergency operations and how MISO will handle any emergency payments the SATOA receives.²¹⁴ MISO states that operating guides will address any scenarios where a SATOA might be called upon under emergency conditions to relieve an issue outside of the specific Transmission Issue for which the SATOA was selected. MISO explains that the SATOA will be included in transmission and generation emergency operations procedures as a step after routine congestion management but before calling load shedding. MISO asserts that this would be the only exception to the boundaries limiting the SATOA's operation so as not to interfere with market operations. However, MISO maintains, these will not be out-of-market operations; whether for capacity emergencies or transmission emergencies, Locational Marginal Prices are established throughout the range of emergency operations. MISO states that the SATOA is not a participating market asset and its costs to perform as a transmission asset is an operating expense or credit to be settled as part of its transmission rate, whether operating under normal or emergency procedures.²¹⁵

b. Protests and Post-Technical Conference Comments

99. Protesters contend that MISO fails to address wholesale market impacts.²¹⁶ They contend that the SATOA will maintain its needed state of charge by charging and discharging in the MISO market, which will impact energy prices, transmission capacity and congestion, possibly usurping injection and transmission capacity that generation has paid for via network upgrades and other resources' opportunities to meet energy and

²¹² *Id.*

²¹³ *Id.* at 29-30.

²¹⁴ *Id.* at 48.

²¹⁵ *Id.* at 48-49.

²¹⁶ Joint MISO Stakeholder Sector Participants Protest at 22; FirstLight Protest at 8.

ancillary service needs. Some protesters argue that MISO's proposed Tariff appears to inappropriately put MISO in the role of maintaining the SATOA's state of charge.²¹⁷

100. Stakeholder Participants state that MISO does not know what a SATOA's impacts will be on the wholesale energy markets, and they argue that MISO's belief that these impacts will be minimal is not a sound basis on which to introduce SATOAs into MISO's markets.²¹⁸ Stakeholder Participants assert that MISO's Tariff does not preclude SATOAs from operating under N-0 and N-1 conditions, and it is possible that significant market impacts will arise if SATOAs are frequently called upon to do so.²¹⁹ Stakeholder Participants aver that the Commission must prevent MISO from moving ahead without any understanding of SATOAs' market impacts, particularly given the potential adverse consequences that will result from the implementation of "hundreds" of SATOAs.²²⁰ Stakeholder Participants further state that MISO has not modeled the market impact of its proposal to establish a specific node where market participants will inject energy from a SATOA.²²¹ Stakeholder Participants assert that the possibility of significant market distortions grows as the number of SATOAs increases.

101. Stakeholder Participants state that SATOAs and transmission wires are not equivalent.²²² They argue that, when a SATOA charges or discharges, it impacts power flows and can "usurp" capacity when charging or cause congestion when discharging, impacting Locational Marginal Prices.²²³ In contrast, wires affect system topology by increasing capacity to allow more throughput, thereby reducing congestion and lowering Locational Marginal Prices.²²⁴ Stakeholder Participants liken wires to adding more lanes to a freeway and more freeways to the system; in contrast they liken SATOAs to adding more cars without increasing freeway capacity.

²¹⁷ FirstLight Protest at 8-9; ESA Comments at 3.

²¹⁸ Stakeholder Participants Post-Technical Conference Comments at 30.

²¹⁹ *Id.* at 29-30.

²²⁰ *Id.* at 30.

²²¹ *Id.* at 35.

²²² *Id.* at 30.

²²³ *Id.* at 30-31.

²²⁴ *Id.* at 31.

102. Stakeholder Participants assert that MISO's statement that SATOAs will be used infrequently is contrary to information that MISO provided in the stakeholder process.²²⁵ Specifically, Stakeholder Participants estimate that, based on MISO's assumptions for storage lifecycles and replacement frequency, a SATOA would cycle more than 100 times each year over a 40-year lifetime.

103. With regard to MISO's statement about which entities could serve as market participants on behalf of a SATOA, Stakeholder Participants assert that a market participant cannot supply energy to charge the SATOA without having Commission authorization to do so under FPA section 205, and that being a price taker does not exempt the entity from this requirement.²²⁶ Further, Stakeholder Participants assert that the operation of the SATOA will implicate the Standards of Conduct. Specifically, Stakeholder Participants assert that, when MISO communicates to the MISO transmission owner the need to have the SATOA ready to serve the transmission need, the MISO transmission owner must then communicate this information to the market participant; if the market participant is the merchant function of the MISO transmission owner or an affiliate, the market participant will be provided with non-public knowledge of upcoming MISO transmission conditions. Stakeholder Participants hold that this is a strict violation of Standards of Conduct that would provide the MISO transmission owner's merchant function or affiliate with an opportunity to benefit from this knowledge.

104. Thomas Rose states that, in addition to pure cost considerations, there are many risks associated with a new electric energy storage facility, including least-cost, technology, reliability, performance, and stranded asset risks.²²⁷ Thomas Rose contends that, consistent with competitive market principles, a competitive, third-party storage company should bear these risks, rather than a transmission company and its captive customers. The PJM Market Monitor argues that supply-side resources treated as transmission assets will unavoidably affect the energy and ancillary services markets and therefore affect competitive market outcomes.²²⁸ The PJM Market Monitor states that such resources would be subsidized resources competing with market resources, and contends that there is no reason to introduce a new form of subsidy when the

²²⁵ *Id.* (citing MISO, *Review of ATC Proposed 15947 Waupaca Area Storage as a Transmission-Only Asset (SATO) Project*, <https://cdn.misoenergy.org/20190531%20WSPM%20Item%2003d%20ATC%20SATO%20review%20results349901.pdf>).

²²⁶ *Id.* at 35.

²²⁷ Thomas Rose Post-Technical Conference Comments at 2.

²²⁸ PJM Market Monitor Post-Technical Conference Comments at 3.

Commission is acting to mitigate the impact of state subsidies on the wholesale power markets.²²⁹

105. Joint MISO Stakeholder Sector Participants state that the SATOA proposal should be revised to address potential cross-subsidization that would occur if an electric storage resource developed to address reliability concerns is called on under emergency conditions to address a transmission reliability issue that extends beyond the transmission pricing zone in which it operates.²³⁰ They argue that this revision will prevent rates paid by transmission customers in one zone from subsidizing another zone. Stakeholder Participants assert that, if a SATOA is discharged in an emergency and the market participant is providing the energy, the compensation would be emergency pricing.²³¹ Stakeholder Participants state that, if typical discharge (energy) costs will be captured in transmission rates as MISO proposes, there would be no difference if that discharge occurs during an emergency; they argue that this would place an additional cost on transmission customers.

106. Finally, FirstLight asks the Commission to strike MISO's proposed Tariff language which states that a SATOA may not otherwise participate in MISO's markets or Planning Resource Auction "unless and until the Tariff includes provisions for storage facilities recovering cost-based revenues as transmission assets to also participate in these or other Market Activities."²³² FirstLight contends that any future proposal for dual participation as a transmission asset and market asset should be considered when proposed, and argues that the quoted language should be stricken to avoid prejudicing the issue prospectively.²³³

c. Answer

107. MISO asserts that the market impacts of a SATOA will be no different than those of a traditional wires solution, similar to taking transmission lines and facilities in and out of service.²³⁴ Further, MISO reiterates that these impacts are expected to be limited given

²²⁹ *Id.* (referencing *PJM Interconnection, L.L.C.*, 169 FERC ¶ 61,239 (2019)).

²³⁰ Joint MISO Stakeholder Sector Participants Protest at 29.

²³¹ Stakeholder Participants Post-Technical Conference Comments at 46-47.

²³² FirstLight Protest at 12 (citing Filing, Tab A, proposed MISO Tariff, att. FF, § I.C (71.0.0)).

²³³ *Id.* at 13.

²³⁴ MISO Post-Technical Conference Answer at 15.

the multiple contingency events that the SATOA would most typically be uniquely qualified to address.

d. Commission Determination

108. We find that MISO's proposed Tariff revisions, with one required clarification explained below, place just and reasonable limitations on a SATOA's market activities. We find that MISO's proposal preserves MISO's independence, even though MISO must assert functional control over the resource in order to address a transmission need, because the SATOA owner is responsible for managing the SATOA's state of charge to ensure readiness to address that need. We also accept MISO's clarifications of how MISO, as Reliability Coordinator, will direct the SATOA to charge or discharge to maintain system reliability for the transmission need identified in the operating guide. This division of responsibilities is comparable to what might be seen with conventional transmission solutions where the transmission operator directs the operation of the asset while the owner maintains it. Furthermore, placing these responsibilities with MISO and the SATOA owner, while using a separate SATOA market participant as a passive conduit for payments to and from the energy market, prevents violations of the Standards of Conduct while permitting the SATOA to be maintained in readiness for, and used to address, the transmission need for which it was chosen.²³⁵ As explained further below, we agree with MISO that the potential market impacts of SATOA operations will likely be very limited, and that the pass-through to transmission ratepayers of the costs and revenues from these limited market activities is appropriate.

109. We find that one aspect of MISO's proposed Tariff revisions lacks clarity. MISO's proposed Tariff provisions state that the SATOA owner will need a registered market participant to receive energy net costs. MISO will credit the market participant for a SATOA with the applicable Real-Time Ex Post Locational Marginal Price for Non-Excessive Energy and will charge it for Non-Excessive Energy withdrawals at the commercial pricing node at which the injection or withdrawal occurs. The SATOA market participant then must provide the net revenues back to the transmission owner, and those net revenues will offset the transmission revenue requirement associated with the resource. MISO clarifies in its post-technical conference comments that a specific commercial pricing node will be established for this purpose, with no other trading activities allowed at this node.²³⁶ However, we find that, while section 40.3.3.3 of the proposed Tariff describes the Locational Marginal Price that will apply to the SATOA owner's market activity, it does not explicitly restrict other trading activity at such nodes. We find that this detail should be included in the Tariff because the existence of any other

²³⁵ MISO Post-Technical Conference Comments at 30-31.

²³⁶ *Id.* at 28.

trading activity at this special purpose SATOA node would be inconsistent with the proposal that the SATOA was only being used to address an identified transmission need. Therefore, we require MISO, in the compliance filing due within 45 days from the date of this order, to revise its Tariff to make clear that trading activity at a SATOA's commercial pricing node will be restricted only to charging and discharging activity needed for the SATOA to meet or be ready to serve the identified transmission need for which the SATOA was included in the MTEP or selected in the MTEP for purposes of cost allocation.²³⁷

110. We are not persuaded by arguments that MISO's proposed Tariff revisions appear to put MISO in the role of maintaining the SATOA's state of charge.²³⁸ We find that MISO's proposed Tariff revisions, as clarified in MISO's post-technical conference comments, make clear that the SATOA owner is responsible for maintaining the SATOA's state of charge to be ready to serve the identified transmission need.

111. We find that the concerns raised with respect to the market impacts of a SATOA²³⁹ have been adequately addressed. MISO maintains that a SATOA will be operated like any other transmission asset under MISO's functional control and will have a minimal impact on the real-time energy market, similar to the impacts of other transmission assets. While we agree with Stakeholder Participants that the operation of a SATOA, whether directed by MISO to meet a transmission need or initiated by a SATOA owner to be ready to serve a need, could influence the real-time Locational Marginal Price,²⁴⁰ we find that those impacts are likely to be limited because a SATOA's operations (i.e., to address infrequent non-N-1 contingencies) are unlikely to have significant real-time energy market impacts. We find that MISO's explanation of the likely operation of SATOAs, as well as the proposed Tariff provisions establishing the two-prong test for a SATOA's inclusion/selection and operation, adequately reduce the risk of significant market price impacts.

112. We disagree with Stakeholder Participants' comment that market impacts may arise due to the likelihood that SATOAs will be frequently called upon to address N-0 or

²³⁷ We find that this required clarification addresses Stakeholder Participants' argument that MISO has not modeled the market impact of its proposal to establish a specific node where market participants will inject energy from a SATOA. Stakeholder Participants Post-Technical Conference Comments at 35.

²³⁸ FirstLight Protest at 8-9; ESA Comments at 3.

²³⁹ Joint MISO Stakeholder Sector Participants Protest at 22; FirstLight Protest at 8; Stakeholder Participants Post-Technical Conference Comments at 29-31.

²⁴⁰ Stakeholder Participants Post-Technical Conference Comments at 30-31.

N-1 reliability Transmission Issues because, they argue, MISO's proposed Tariff provisions do not explicitly restrict SATOAs from addressing these conditions.²⁴¹ As discussed above, we direct MISO to file Tariff revisions to make clear that a storage facility will not qualify as a SATOA unless MISO requires functional control of the resource in order to address non-routine (i.e., not N-0 or N-1) reliability Transmission Issues.

113. With respect to Stakeholder Participants' assertion that a market participant cannot supply energy to charge the SATOA without having Commission authorization to do so under FPA section 205, and that being a price taker does not exempt the entity from this requirement, we find those concerns misplaced. A SATOA charging to be ready to address a transmission need would be purchasing energy from the energy market, and Commission authorization is not required to purchase energy here where the market participant is simply ensuring that the SATOA is able to respond to a transmission need when MISO directs it to do so.²⁴² Concerns regarding whether a third-party seller of energy has appropriate authorizations are outside of the scope of this proceeding.

114. We disagree with Stakeholder Participants' argument that the operation of a SATOA would necessarily violate the Standards of Conduct.²⁴³ As described by MISO, a SATOA's market participant must lack market-based rate authority, and will not play a role in the functional control of charging or discharging activities.²⁴⁴ As a result, the SATOA market participant, contrary to what the name may imply, does not actually participate in the market. This, coupled with the fact that the SATOA market participant will not play a role in the functional control of charging or discharging activities, means that the SATOA market participant merely facilitates payments to or from the energy market in connection with the SATOA's charge/discharge operations. Furthermore, it is the SATOA owner, not the SATOA market participant, that decides when to charge and discharge to be ready to serve the identified transmission need. Thus, there is no sharing of non-public transmission information between transmission function staff and a market participant because the SATOA market participant is not truly a market participant, and in any event, all functional control is retained by either the SATOA owner (for operations to be ready to serve the transmission need) or MISO (for actually serving the transmission need). Coupled with MISO's commitment that the Standards of Conduct

²⁴¹ *Id.* at 29-30.

²⁴² MISO Post-Technical Conference Comments at 25.

²⁴³ Stakeholder Participants Post-Technical Conference Comments at 35.

²⁴⁴ MISO Post-Technical Conference Comments at 30-31.

will apply to a SATOA's operation,²⁴⁵ we do not share Stakeholder Participants' concerns.

115. Regarding protesters' argument that MISO's proposal raises questions about SATOAs' alignment with competitive market principles,²⁴⁶ we find no inconsistencies. The Commission's approval of the requirement for SATOAs to have unique characteristics or circumstances in order to be included in the MTEP or selected in the MTEP for purposes of cost allocation, including that the SATOA can only solve the transmission need by operating as a SATOA rather than as a market resource, should ensure that SATOAs remain consistent with competitive market principles; SATOAs will only be chosen if market resources are unable to address the transmission need and meet the other criteria set forth by MISO.

116. We are not persuaded by protesters' arguments regarding potential market impacts resulting from a SATOA's emergency operations.²⁴⁷ We find that the additional information provided by MISO in its post technical conference comments sufficiently clarifies MISO's process during emergency operations; specifically, the costs to perform as a transmission asset during an emergency are settled as part of transmission rates, and specific Locational Marginal Prices are established throughout the range of emergency operations.²⁴⁸

117. We decline FirstLight's request that the Commission strike MISO's proposed Tariff language which states that a SATOA may not otherwise participate in MISO's markets or Planning Resource Auction "unless and until the Tariff includes provisions for storage facilities recovering cost-based revenues as transmission assets to also participate in these or other Market Activities."²⁴⁹ We find that this language does not prejudice the issue prospectively, as FirstLight asserts. Irrespective of what this language states, any proposal to allow storage facilities recovering cost-based revenues as transmission assets to also participate in these or other market activities will require an FPA section 205

²⁴⁵ *Id.* at 31; Filing, Transmittal Letter at 24.

²⁴⁶ Thomas Rose Post-Technical Conference Comments at 2; PJM Market Monitor Post-Technical Conference Comments at 3.

²⁴⁷ Joint MISO Stakeholder Sector Participants Protest at 29; Stakeholder Participants Post-Technical Conference Comments at 46-47.

²⁴⁸ MISO Post-Technical Conference Comments at 48-49.

²⁴⁹ FirstLight Protest at 12.

filing with appropriate support, and intervenors will have the ability to protest such a filing.

4. Cost Recovery Mechanism for SATOAs

a. Initial Filing and Post-Technical Conference Clarifications

118. MISO's proposed Tariff revisions state that a SATOA is eligible for cost recovery consistent with the cost recovery for its MTEP project type under Attachment FF of MISO's Tariff (i.e., Baseline Reliability Project, Other Project, etc.).²⁵⁰ MISO proposes that cost recovery for a SATOA under transmission rates will be limited to the cost of the maximum capacity needed to address the Transmission Issue and will be pro-rated on that basis if a SATOA of higher capacity is proposed, approved for inclusion in the MTEP, and installed. MISO states that this will ensure that transmission customers do not subsidize any excess capacity.²⁵¹ MISO also states that any SATOA with excess capacity beyond the required capacity selected as the preferred solution in the MTEP will be required to go through the full GIP described in Attachment X of MISO's Tariff if the SATOA seeks to offer that excess capacity into the market.²⁵²

119. In its post-technical conference comments, MISO provides some further clarifications of the cost recovery process for SATOAs. MISO states that transmission projects recommended through the MTEP process, and listed in Appendix A of the MTEP report (Appendix A projects), currently have their costs recovered through Attachments O, GG, and MM of the MISO Tariff, and that SATOA projects would follow a similar process.²⁵³ MISO explains that Attachment O, which is populated by FERC Form No. 1, uses all of a transmission owner's transmission rate base, expenses, and capital structure to calculate the Attachment O revenue requirement.²⁵⁴ MISO states that this revenue requirement also includes the revenue requirements of any Attachments

²⁵⁰ Filing, Tab A, proposed MISO Tariff, att. FF, § II.G.1 (71.0.0). MISO notes that no transmission service charges are applicable to the operation of a SATOA because its operation is under the direction of MISO for transmission purposes. *Id.*, Transmittal Letter at 21-22, Tab A, proposed MISO Tariff, att. FF, § II.G.5 (71.0.0).

²⁵¹ *Id.*, Tab A, proposed MISO Tariff, att. FF, § II.G.1.a.ii (71.0.0).

²⁵² *Id.*, Transmittal Letter at 13 n.67.

²⁵³ MISO Post-Technical Conference Comments at 32, 34.

²⁵⁴ *Id.* at 33.

GG and MM projects.²⁵⁵ When there are revenue requirements for Attachments GG and MM projects, a portion of the Attachment O expense categories and return on rate base is allocated to Attachments GG and MM. MISO explains that the allocators used in Attachments GG and MM are developed by dividing the expense category (Operating and Maintenance (O&M) expenses, taxes other than income taxes, income taxes) and return on rate base, by either the gross transmission plant or net transmission plant amounts reported in Attachment O.²⁵⁶ These allocators are then used to allocate the expenses and return on rate base to each Attachment GG and Attachment MM project to derive the project's annual revenue requirement. MISO states that the Attachments GG and MM total revenue requirements are then deducted from the Attachment O revenue requirement to calculate the Attachment O revenue requirement.²⁵⁷ MISO states that SATOA projects would follow the same process and would be treated the same way as any like kind traditional wires transmission asset. MISO explains that transmission project costs included in the transmission owner's annual revenue requirement calculated in Tariff Attachments O, GG, or MM, are recovered through transmission rate Schedules 7, 8, 9, 26, and 26-A.²⁵⁸

120. MISO asserts that the transmission owners are responsible for populating Attachments O, GG, and MM, and are also responsible for ensuring that their formula rates structures will accommodate cost recovery for a SATOA.²⁵⁹ MISO states that it does not anticipate that a transmission owner would use a separate rider for real-time energy costs or revenues, as current formula rate structures will accommodate cost recovery for SATOAs, and no modifications to the Attachment O templates are required.²⁶⁰

121. For illustrative purposes, MISO provides a more detailed description of the two-part formula cost recovery process for a SATOA project: (1) the cost recovery of the SATOA asset through rate base, and (2) the recovery of the O&M expenses for SATOA projects, including the recovery of the expenses and revenues associated with charging

²⁵⁵ Attachment GG involves Network Upgrade and Targeted Market Efficiency Project Charges, while Attachment MM involves Multi-Value Project Charges.

²⁵⁶ MISO Post-Technical Conference Comments at 33.

²⁵⁷ *Id.* at 33-34.

²⁵⁸ *Id.* at 35.

²⁵⁹ *Id.*

²⁶⁰ *Id.* at 35, 39.

and discharging the SATOA.²⁶¹ As to the first part, MISO states that the gross plant value, accumulated depreciation balance, adjustments to rate base, material and supplies, and prepayments associated with the SATOA project will be accounted for by the transmission owner and reflected in the appropriate pages and lines of FERC Form No. 1. MISO contends that, per the Accounting and Reporting Guide for New Electric Storage Technology,²⁶² a portion of the transmission storage asset should be recorded in Account 351, Energy Storage Equipment, which will be included in the total transmission plant value reported on Attachment O.²⁶³ MISO states that other portions of the storage asset will likely be booked to other existing transmission plant accounts such as land and structures. MISO states that the remaining SATOA rate base items, such as accumulated depreciation and adjustments to rate base, would be reflected in Attachment O in a manner consistent with any new traditional wires project.

122. As to the second part, MISO explains that O&M expenses (excluding any costs incurred for charging or revenues received for discharging the SATOA) would be booked to the appropriate accounts by the transmission owner and be reported on Attachment O.²⁶⁴ MISO explains that the only costs/revenues unique to a SATOA project are the costs/revenues associated with charging and discharging the SATOA, as a SATOA needs to charge and discharge in order to perform its transmission function.²⁶⁵ MISO states that it will send the market participant for the SATOA an invoice summarizing the costs and revenues associated with charging and discharging the SATOA, and on a periodic basis the market participant will send the transmission owner an invoice documenting the costs and revenues associated with operating the SATOA as a transmission facility. In turn, MISO explains, the transmission owner will record net costs/revenues monthly to Account 562.1, Operations of Energy Storage Equipment, or Account 555.1, Power Purchased for Storage Operations. These costs would then be reflected in Attachment O and ultimately included in the annual transmission revenue requirement.

123. MISO asserts that, although the Accounting and Reporting Guide recommends the costs for charging the SATOA be booked to Account 555.1, Account 562.1 is also acceptable and may be preferred for a SATOA asset because the cost of charging the

²⁶¹ *Id.* at 36.

²⁶² *Accounting and Reporting Guide for New Electric Storage Technology*, Docket No. AI14-1-000 (February 20, 2014) (“Accounting and Reporting Guide”).

²⁶³ MISO Post-Technical Conference Comments at 36.

²⁶⁴ *Id.* at 36-37.

²⁶⁵ *Id.* at 37.

SATOA is an expense “incurred in the operation of the energy equipment.”²⁶⁶ MISO contends that, by using Account 562.1, all the costs of charging the SATOA will be reported to an O&M account, eliminating the need for Attachment O modifications and additional inputs into the Attachment O template. MISO states that the transmission owners have indicated a willingness to provide a supporting workpaper, upon request, to specifically illustrate the costs of charging the asset. MISO also asserts that Account 562.1 is the appropriate account to record revenues received from discharging the SATOA during operation of the asset.²⁶⁷ MISO explains that, similar to the cost of charging the SATOA, the revenues received by the market participant from MISO for discharging the SATOA will be passed through to the transmission owner, and eventually to the MISO customers. MISO asserts that revenues associated with discharging the SATOA are a by-product of operating the SATOA so that it can perform its transmission function, and should therefore be reported in Account 562.1 and used to reduce the SATOA’s operating expenses, which will reduce the revenue requirement and rates charged to customers.

124. MISO states that its formula rate protocols require Attachment O to be posted on MISO’s website each year, after which interested parties have an opportunity to send questions to transmission owners and submit challenges to the inputs of the Attachment O template.²⁶⁸ MISO further notes that the transmission owner is required to make an informational filing with the Commission, and that interested parties may challenge the justness and reasonableness of amounts reported in Attachment O. MISO contends that these processes will provide an opportunity for any MISO customer to seek a better understanding of how a transmission owner is reporting and recovering any market-derived costs and revenues associated with the operation of SATOA projects.

125. MISO also clarifies its proposed Tariff language which states that comparative evaluations of a proposed SATOA will include minimum and maximum capacity required to address the Transmission Issue, and that cost recovery under transmission rates is limited to the cost of the maximum capacity needed to address the Transmission Issue.²⁶⁹ MISO states that it will determine the maximum capacity needed to address the Transmission Issue in the same manner as evaluating the ability of a traditional transmission solution. For instance, for a shunt reactive device (e.g., a capacitor bank, a

²⁶⁶ *Id.* at 37-38 (citing 18 C.F.R. pt. 101, Account 562.1). MISO notes that maintenance expenses, i.e., those that enable the SATOA to maintain constant general readiness, may be recovered in Account 570.1. *Id.* at 38.

²⁶⁷ *Id.* at 39.

²⁶⁸ *Id.* at 34-35.

²⁶⁹ *See* Filing, Tab A, proposed MISO Tariff, att. FF, § II.G.1.a.ii (71.0.0).

static var compensator, or a static synchronous compensator injecting/withdrawing reactive power into the grid to address voltage, loading, or stability issues) or for a power control device (e.g., a phase angle regulator or voltage source converter), the Transmission Issue will require only a specific amount of MW or MVar injection or withdrawing capability.²⁷⁰ MISO contends that this is no different than sizing a capacitor bank, static var compensator, or conductor to size. MISO asserts that, if a SATOA's capacity is larger than the amount needed to address the Transmission Issue, with consideration for any amount needed to account for degradation over time, the operating guide will prohibit the use of any capacity over the maximum needed and would only compensate the SATOA for the portion needed to address the Transmission Issue.²⁷¹

b. Protests and Post-Technical Conference Comments

126. MISO Transmission Owners support MISO's proposal. MISO Transmission Owners agree with MISO that the current formula rate structures will accommodate cost recovery for SATOAs, and that SATOAs would be treated in the same manner as any other transmission asset with respect to cost recovery.²⁷² MISO Transmission Owners state that settlements from charging and discharging for all SATOAs would be handled by either a market participant affiliated with the transmission owner or a market participant agent representing the transmission owner.²⁷³ MISO Transmission Owners explain that the market participant or agent, on a monthly or other agreed upon timeframe, would issue a debit or credit to the transmission owner that equals the net of charging and discharging at the Locational Marginal Price (and any agent fees). These amounts would be reflected annually in the transmission owner's operating expenses as debit or credit, which would increase or decrease the transmission owner's cost of service billed to its transmission customers regardless of whether the transmission owner uses historic rates (the actual expense would be recovered in the future rates) or forward-looking rates (the actual expense, including a reduction from what was projected, would be reflected in the true-up).²⁷⁴ MISO Transmission Owners state that, although the net of charging and discharging may result in "revenue" or a credit, these amounts would be

²⁷⁰ MISO Post-Technical Conference Comments at 22.

²⁷¹ *Id.* at 22-23.

²⁷² MISO Transmission Owners Post-Technical Conference Comments at 5.

²⁷³ *Id.* at 7.

²⁷⁴ *Id.* at 7-8.

applied to operating expenses as a credit because the activity of charging and discharging is required to operate the SATOA.²⁷⁵

127. MISO Transmission Owners contend that MISO's proposal ensures that SATOAs will not be credited or compensated for excess capacity through transmission rates, and argue that this should not be confused with over-sizing to account for degradation of a battery and to maintain the capacity over the life of the battery needed to address the Transmission Issue.²⁷⁶ MISO Transmission Owners contend that SATOA owners will instead likely take an "augmentation" approach and add battery cells periodically to maintain the needed capacity and incur O&M expenses over the life of the asset to address degradation. MISO Transmission owners note, however, that in certain circumstances an oversizing approach to addressing degradation might be lower cost than augmentation. They argue that this oversizing approach should therefore be available to entities proposing SATOAs to address transmission needs, with the costs of doing so considered as part of the overall cost in MISO's MTEP evaluation.

128. Stakeholder Participants state that MISO has not explained why a SATOA can be installed on the grid with excess capacity, and argue that the Commission should require that a SATOA can only be installed to the MW size needed to address the identified transmission need.²⁷⁷ Protesters argue that, if market participation is later adopted for pre-existing SATOA resources, the oversized SATOA owned by the transmission owner will have an unjust competitive advantage over new storage because it will already be permitted, sited, and installed, and infrastructure and installation costs will have already been paid for by ratepayers.²⁷⁸ Protesters state that this is the exact situation the Commission sought to remedy when it issued Order Nos. 888 and 890: preventing transmission providers from exerting undue discrimination in the use of transmission to prefer their own generation resources.²⁷⁹ They state that MISO's proposal carves out a

²⁷⁵ *Id.* at 8.

²⁷⁶ *Id.* at 4.

²⁷⁷ Stakeholder Participants Post-Technical Conference Comments at 22.

²⁷⁸ *Id.* at 26; AMP Protest at 3, GlidePath Protest at 5.

²⁷⁹ Joint MISO Stakeholder Sector Participants Protest at 21-22; EPSA Protest at 4; Public Interest Organizations Comments at 6 (all referencing *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Pub. Utils.; Recovery of Stranded Costs by Pub. Utils. and Transmitting Utils.*, Order No. 888, FERC Stats. & Regs. ¶ 31,036 (1996) (cross-referenced at 75 FERC ¶ 61,080, *order on*

transmission owner preference in violation of the Commission's basic open access and comparability policies.

129. Protesters argue that, although MISO states that cost recovery under transmission rates is limited to the cost of the maximum capacity determined to be needed to address the Transmission Issue and will be pro-rated on that basis if a SATOA of higher capacity is proposed, MISO has not provided any details to show how the pro-rating process would work.²⁸⁰ Stakeholder Participants have several questions about MISO's proposal, such as: (1) how MISO will account for the buswork and construction infrastructure that will have already been paid for; (2) how MISO will ensure that the capacity dispatched to address the transmission need does not exceed the capacity approved for recovery in Attachment O; (3) whether an affiliated merchant entity can add additional capacity to a SATOA while sharing facility and/or operating costs, which would raise further competitive and ratepayer subsidy issues; (4) whether, if a portion of the SATOA is approved subsequently as a market asset, state commissions would have jurisdictional control over the portion of the asset that is dispatched to serve load as a generation asset; and (5) whether there is a maximum size/duration of a SATOA project (for instance, would MISO allow 100 MW storage when a two MW Transmission Issue need was identified).

130. Stakeholder Participants argue that MISO's SATOA proposal will "open the floodgates" and result in hundreds of oversized SATOA.²⁸¹

c. Commission Determination

131. We find that MISO's proposal to make a SATOA eligible for cost recovery consistent with the cost recovery for its MTEP project type under Attachment FF of MISO's Tariff is just and reasonable. The operation of a SATOA would be limited to serving a transmission function, and it is appropriate that a SATOA recover costs in the same manner as existing transmission facilities in the same MTEP project category. Except as discussed below, we find that the current formula rate structures will accommodate cost recovery for SATOAs, as explained in MISO's detailed description of

reh'g, Order No. 888-A, FERC Stats. & Regs. ¶ 31048 (cross-referenced at 78 FERC ¶ 61,220), *order on reh'g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *order on reh'g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998); Order No. 890, 118 FERC ¶ 61,119).

²⁸⁰ Stakeholder Participants Post-Technical Conference Comments at 27; AMP Protest at 4-5.

²⁸¹ Stakeholder Participants Post-Technical Conference Comments at 28. Stakeholder Participants note that two SATOAs have already been proposed in MTEP20.

the two-part formula cost recovery process for a SATOA project. However, we discuss the proper method of accounting for energy charged or discharged by a SATOA.

132. In 2013, the Commission issued Order No. 784, which addressed both third-party provision of ancillary services and accounting and financial reporting for new electric storage technologies.²⁸² In that final rule, the Commission required that the installed costs of energy storage assets be recorded in the accounts based on the function or purpose the asset serves. On this basis, an asset that performs a single function will have its cost recorded in a single plant account. Where an energy storage asset instead performs more than one function, the cost of the asset will be allocated among the relevant energy storage plant accounts— production, transmission, and distribution – based on the functions performed by the asset and the allocation of the asset’s costs through cost-based rates that are approved by a relevant regulatory agency, whether federal or state.²⁸³

133. The Commission, in establishing its accounting regulations for energy storage assets, concluded that the costs to purchase power for use in storage operations are recorded in Account 555.1 (Power Purchased for Storage Operations), the costs of maintaining and operating transmission storage assets are recorded in Account 562.1 (Operation of Energy Storage Equipment), and the revenues derived from energy storage operations are recorded in the relevant revenue accounts.²⁸⁴ The Commission stated in Order No. 784 that the modifications to its accounting regulations are to increase

²⁸² *Third-Party Provision of Ancillary Services; Accounting and Financial Reporting for New Electric Storage Technologies*, Order No. 784, 144 FERC ¶ 61,056 (2013), *order on clarification*, Order No. 784-A, 146 FERC ¶ 61,114 (2014).

²⁸³ Order No. 784, 144 FERC ¶ 61,056 at PP 126, 141.

²⁸⁴ *Third-Party Provision of Ancillary Services; Accounting and Financial Reporting for New Electric Storage Technologies*, Notice of Proposed Rulemaking, 139 FERC ¶ 61,245, at P 100 (2012):

The current revenue accounts provide for recording revenue based on sales of electricity and other products and services by type of customer, product, or service. Revenue derived from the operation of energy storage assets will originate from one or more of these items.... Companies using energy storage assets to provide utility service must record revenues associated with use of the assets in existing revenue accounts in accordance with the instructions of the accounts, as appropriate.

transparency for energy storage facilities, and MISO's proposed accounting is contrary to this goal and to the Commission's accounting regulations.

134. Accordingly, as provided in Order No. 784 and the Commission's regulations and related accounting guidance, MISO transmission owners must record the transmission storage asset in Account 351 (Energy Storage Equipment - Transmission), expenses associated with charging the transmission storage asset in Account 555.1 (Power Purchased for Storage Operations), and record the revenues associated with discharging the asset in the appropriate revenue accounts.²⁸⁵ The expenses incurred that are associated with the operations and maintenance of the transmission storage asset are to be recorded in Account 562.1 (Operation of Energy Storage Equipment) and Account 570.1 (Maintenance of Energy Storage Equipment), respectively. The Commission's regulations further provide that, to the extent the revenues associated with discharging the storage asset are associated with net settlements for exchange of electricity or power, such revenues are to be recorded in Account 555.1, a production account not included in the MISO transmission formula rates.²⁸⁶ Accordingly, a MISO transmission owner that develops a SATOA will need to make a filing pursuant to FPA section 205 to update its Attachment O with a line item to ensure any revenues or expenses associated with the discharging and charging of the SATOA are treated in a manner consistent with the treatment of costs associated with the project category in transmission rates.²⁸⁷ Further, a MISO transmission owner is required to include a workpaper with its annual informational filing showing the sales of the charging and discharging of the storage asset for transparency purposes.

135. We find that protesters' arguments regarding the potential unjust competitive advantage if market participation is later adopted for pre-existing SATOA facilities are

²⁸⁵ *Accounting and Reporting Guidance for New Electric Storage Technologies*, Docket No. AI14-1-000 (February 20, 2014). See also 18 C.F.R. pt. 101, Account Definitions for Accounts 351, 555.1, 562.1 and 570.1 (2019).

²⁸⁶ See 18 C.F.R. pt. 101, Account Definitions for Account 555.1 (2019).

²⁸⁷ MISO states that its proposal meets the Commission's concerns regarding double recovery laid out in the 2017 Policy Statement. Filing, Transmittal Letter at 4-5, Tab A, proposed MISO Tariff, att. FF, § II.G.6.a and § II.G.6.b (71.0.0). The Commission's guidance above is tailored to the specifics of MISO's currently structured proposal. As noted in the Commission's 2017 Policy Statement, there are potentially many ways to address the issue of double recovery for storage devices.

outside the scope of this proceeding.²⁸⁸ MISO's current proposal clearly states that it is limited to utilizing storage as transmission assets only.²⁸⁹

136. We disagree with protesters' argument that MISO has not provided any details to show how the pro-rating process would work.²⁹⁰ First, Stakeholder Participants' comment that MISO has not explained how it will "account for the buswork and construction infrastructure that will have already been paid for" does not clearly describe what is lacking from MISO's proration methodology.²⁹¹ MISO explains that cost recovery, in the event excess capacity is installed, will be based on the pro-rated cost of the facility needed to address the Transmission Issue.²⁹² We find that, based on MISO's explanation and the proposed Tariff language, if a SATOA includes capacity beyond what MISO finds is necessary to address the Transmission Issue, only a pro-rated portion of the full cost of the SATOA project will be recoverable in transmission rates. For example, as MISO explains, if the maximum capacity required to address the transmission issue is 10 MW and a SATOA owner elects to install a 20 MW storage facility, the costs of the project will be prorated to reflect that only 10 MW of capacity was required as a SATOA.²⁹³

137. Second, regarding Stakeholder Participants' questions concerning how MISO will ensure that the capacity dispatched to address the transmission need does not exceed the capacity approved for recovery in Attachment O,²⁹⁴ we find that the accounting procedures used in Attachments O and FF, where cost recovery will be based on the pro-rated cost of the facility needed to address the Transmission Issue as MISO described, in addition to the proposed limitations on market participation and the proposed operational limitations in the operating guides,²⁹⁵ will sufficiently ensure that the capacity dispatched

²⁸⁸ Stakeholder Participants Post-Technical Conference Comments at 26; AMP Protest at 3, GlidePath Protest at 5.

²⁸⁹ Filing, Transmittal Letter at 4.

²⁹⁰ Stakeholder Participants Post-Technical Conference Comments at 27; AMP Protest at 4-5.

²⁹¹ Stakeholder Participants Post-Technical Conference Comments at 27.

²⁹² Filing, Transmittal Letter at 18.

²⁹³ MISO Answer to Protests of Filing at 13.

²⁹⁴ Stakeholder Participants Post-Technical Conference Comments at 27.

²⁹⁵ Filing, Tab A, proposed MISO Tariff, att. FF, § II.G.1.a.ii and § II.G.2 (71.0.0).

to address the transmission need does not exceed the capacity approved for recovery in Attachment O.

138. Third, with respect to Stakeholder Participants' concern that an affiliated merchant entity can add additional capacity to a SATOA while sharing facility and/or operating costs, we find that this concern is premature.²⁹⁶ MISO's proposed revisions include revising the definition of "Generating Facility" in Attachment X to specifically exclude SATOAs. Additionally, MISO explained that any SATOA with excess capacity beyond that required as the preferred solution for inclusion in the MTEP or for selection in the MTEP for purposes of cost allocation will be required to go through the GIP if it seeks to offer that excess capacity into the market.²⁹⁷ Thus, if an affiliated merchant entity adds additional capacity to a SATOA, such capacity would not have market access beyond that required for the transmission need. To the extent that issues relating to sharing facility and/or operating costs arise in a proposal to allow a storage device to function as both a SATOA and a market resource, the Commission will address the issue in that context.

139. Fourth, we find that Stakeholder Participants' question regarding whether state commissions would have jurisdictional control over portions of assets that are subsequently approved as a market asset²⁹⁸ is outside the scope of this proceeding, as market access for SATOA resources is not set forth in this filing.

140. Fifth, we find that Stakeholder Participants' question regarding whether there is a maximum size/duration of a SATOA²⁹⁹ has been addressed. We find that MISO's response clarifies that, although there is not a maximum size of a SATOA, cost recovery under transmission rates is limited to the cost of the maximum capacity determined to be needed to address the Transmission Issue.³⁰⁰

²⁹⁶ Stakeholder Participants Post-Technical Conference Comments at 27.

²⁹⁷ Filing, Transmittal Letter at 13.

²⁹⁸ Stakeholder Participants Post-Technical Conference Comments at 27.

²⁹⁹ *Id.*

³⁰⁰ MISO Post-Technical Conference Comments at 22-23.

5. Impact on the Generator Interconnection Queue

a. Initial Filing and Post-Technical Conference Clarifications

141. MISO's proposed Tariff states that MISO will consider a SATOA's impacts on resources in the generator interconnection queue.³⁰¹ If MISO or a stakeholder identifies any potential impacts to newly-interconnecting generation resources in the interconnection study process, MISO will assess whether the proposed SATOA will impact the newly-interconnecting generation resources. Such assessment may include targeted contingency analyses applying NERC transmission planning reliability standards and applicable regional and local planning criteria to evaluate the incremental impact of the proposed SATOA on interconnection queue projects in proximity to the SATOA in the MTEP model to compare loading and other system performance impacts attributable to the addition of the SATOA. If the assessment demonstrates that the necessary operating mode of the SATOA would cause the need for additional system mitigation, the cost of such mitigation will be included in the evaluation of the proposed SATOA against other potential transmission solutions.

142. In its post-technical conference comments, MISO provides further details on how MISO would assess the impact of a proposed SATOA on newly-interconnecting generation resources and compute costs if system mitigation is needed.³⁰² Specifically, to assess the potential impact of a proposed SATOA on interconnecting generators within the annual MTEP, MISO will include generation in the current Definitive Planning Phase (DPP)³⁰³ of the interconnection study processes in the expansion planning models. The expansion planning model with the DPP generating facilities incorporated will be tested with and without the SATOA operation under the NERC transmission planning reliability standard contingent conditions for which, and in the manner which, the SATOA will be operated. If the incremental SATOA operation causes any facilities to exceed limits with the DPP generating facilities modeled, the costs of any necessary upgrades as mitigation will be included in the SATOA project costs and will be considered part of the overall

³⁰¹ Filing, Transmittal Letter at 20-21, Tab A, proposed MISO Tariff, att. FF, § II.G.1.d (71.0.0).

³⁰² MISO Post-Technical Conference Comments at 40.

³⁰³ The DPP is the final phase of MISO's generator interconnection study process, during which MISO conducts reliability and deliverability studies that determine whether there is available transmission capacity to accommodate the interconnection of a new, proposed generation facility or whether network upgrades are needed.

SATOAs project.³⁰⁴ If the SATOA project is still the preferred solution based upon cost, performance, and other evaluation criteria in the Tariff, the combined project costs will be included in the MTEP and eligible for cost recovery through the appropriate Attachment and Schedule of the Tariff.³⁰⁵ MISO asserts that the analysis of the impact of the proposed SATOA in the MTEP, or on newly interconnecting generation resources, will be available to market participants in the regional transmission planning process and to interconnection customers in the interconnection queue.³⁰⁶

143. MISO contends that this expansion planning analysis does not cause a restudy in the separate interconnection study process because the analysis happens in the annual expansion planning process only, and the expansion planning analysis would mitigate the impact to the DPP such that there would be no restudy needed as a result of selection of a SATOA for inclusion in the MTEP.³⁰⁷ MISO further explains that, when a DPP cycle is kicked off (twice annually, where each DPP cycle is comprised of three DPP phases) the latest approved MTEP model is utilized as the base case for the DPP models.³⁰⁸ MISO states that different models are built for different DPP analyses (ranging from steady state thermal and voltage analysis to short circuit analysis) and that these base case models and the transmission equipment represented in these models will not change regardless of whether future MTEP projects are approved prior to the completion of the DPP cycle.³⁰⁹ The model does change during each DPP phase because interconnection requests are removed when they drop out of the queue, but the base case assumptions do not change.³¹⁰ MISO contends that a SATOA approved in the middle of a DPP cycle could not negatively impact an interconnection request that is already in the queue, potentially causing a restudy, because each DPP cycle model only includes MTEP projects (including SATOAs) approved as of the last MTEP when the DPP cycle begins.

³⁰⁴ MISO Post-Technical Conference Comments at 41.

³⁰⁵ *Id.* at 46.

³⁰⁶ *Id.* at 41.

³⁰⁷ *Id.*

³⁰⁸ *Id.* at 42.

³⁰⁹ *Id.* at 42-43.

³¹⁰ *Id.* at 43.

144. MISO states that SATOAs will be studied in the expansion planning process with the same rigor that MISO studies storage as NTAs in the interconnection queue.³¹¹ MISO explains that a storage device interconnecting in either process is considered on a case-by-case basis for potential impacts on various aspects of system stability. MISO states that the need for specific studies depends on many factors, including the strength of the system in the area, interactions with other generation resources, and characteristics of that generation. MISO notes that, when a SATOA is being considered as a solution to a Transmission Issue, it is first tested to see if its proposed manner of use will solve the problem. For example, to address the issue of a discharge needed to maintain voltage or stability, MISO would use planning model simulations to determine if the discharge is effective in mitigating the system impacts of the disturbance, including speed and duration of discharge.³¹² If MISO determines that the SATOA can satisfactorily address a Transmission Issue, it will also consider the SATOA's impact on the system, such as the impact of the SATOA's operation if there were a fault on the system during the operation of the storage facility.³¹³ MISO avers that this is the same general approach that is used in testing any proposed wires solution for effectiveness and reliability impacts.

145. MISO notes, however, that a SATOA approved in the MTEP after the start of a DPP cycle may become a contingent facility³¹⁴ listed in an interconnection request's eventual generator interconnection agreement if the SATOA mitigates a constraint identified in the GIP.³¹⁵ MISO notes that any other traditional transmission asset could similarly be considered as a contingent facility in the MTEP process.³¹⁶

³¹¹ *Id.* at 49.

³¹² *Id.* at 49-50.

³¹³ *Id.* at 50.

³¹⁴ MISO states that contingent facilities are those unbuilt interconnection facilities and network upgrades upon which the interconnection request's costs, timing, and study findings are dependent, and if delayed or not built, could cause a need for restudies of the interconnection request or a reassessment of the interconnection facilities and/or network upgrades and/or costs and timing. Contingent facilities may include facilities identified in the MTEP that if delayed or not built could impact the timing of the interconnection request. *Id.* n.125.

³¹⁵ *Id.* at 44-45. MISO notes that no network upgrades for the SATOA would be assigned to interconnection customers in the queue. *Id.* at 45-46.

³¹⁶ *Id.* at 41.

b. Protests and Post-Technical Conference Comments

146. Protesters argue that MISO should provide more information in the Tariff about how MISO will assess any impacts of the SATOA on newly-interconnecting resources in the generator interconnection queue and how it will assess/assign the cost of any necessary mitigation.³¹⁷ For instance, Stakeholder Participants state that wires solutions increase transmission capacity, while SATOA will be injecting energy, which requires the use of transmission capacity.³¹⁸ Stakeholder Participants argue that MISO admitted at the technical conference that a SATOA could usurp capacity from earlier-in-time generating facilities in the GIP queue, and that MISO's Tariff has no means to account for this usurpation of transmission capacity in GIP study models.³¹⁹ They also contend that the Tariff does not reflect MISO's statement at the technical conference that, if a SATOA will harm a generating facility in the GIP queue, then MISO will not select it.³²⁰

147. Stakeholder Participants also contend that any mitigation would be deficient because MTEP modeling is different than GIP modeling; in MTEP modeling, MISO only dispatches enough generation in the local balancing area to meet load needs locally, whereas in the GIP studies, MISO backs down generation throughout its entire footprint.³²¹ Additionally, with respect to how MISO studies SATOAs for reliability impacts, Stakeholder Participants note that the study methodologies of the MTEP and the GIP differ significantly. Thus, Stakeholder Participants assert that, if the same 100 MW was added in both studies, it is highly unlikely that the same constraints would show up in both studies. They state that MISO has yet to model SATOAs in the GIP, and thus stakeholders have not been provided with enough information to see the differences.³²²

148. Stakeholder Participants further argue that mitigation is deficient because SATOA is an inverter-based technology.³²³ They contend that, when there are concentrated levels

³¹⁷ Joint MISO Stakeholder Sector Participants Protest at 23-24; ESA Comments at 4; GlidePath Protest at 7; Stakeholder Participants Post-Technical Conference Comments at 39, 42.

³¹⁸ Stakeholder Participants Post-Technical Conference Comments at 38.

³¹⁹ *Id.* at 39, 42.

³²⁰ *Id.* at 41.

³²¹ *Id.* at 40.

³²² *Id.* at 47.

³²³ *Id.* at 40.

of inverter-based technology in a location, it can lead to subsynchronous resonance between inverters that must be mitigated. Stakeholder Participants aver that MISO has not, however, specified that subsynchronous resonance will be part of the mitigation or even the impact study.

149. Stakeholder Participants reject MISO's statement that the costs of any required mitigation will be recovered in transmission rates and will not be passed onto interconnection customers.³²⁴ They argue that the proposed Tariff provisions do not reflect this statement and, given that MISO does not seem to have worked out the issues surrounding impacts to generators in the GIP, the Commission should give no weight to MISO's statement.³²⁵ Stakeholder Participants also point out that MISO has not explained how it would address a situation in which a SATOA becomes operational (and its costs are therefore recovered in transmission rates), only to later become obsolete from generation or network upgrades or both.

150. Stakeholder Participants claim that the problems with the "no harm" test are illustrated by the patently deficient test conducted for the proposed Waupaca Project in MTEP19.³²⁶ They state that the MTEP19 evaluation included DPP 2018 projects, which had reached the generator interconnection agreement execution phase, but not DPP 2017 or DPP 2019 projects, both of which had not yet reached the generator interconnection agreement execution phase. They also contend that the modeling done in MTEP19 was not as robust as the modeling done in the GIP: (1) the MTEP19 report did not provide line loading information before and after the SATOA under the conditions of 100% of the SATOA output for comparison, as would be presented in GIP reliability impact studies to determine impacts to other generating facilities; (2) MTEP19 used local balancing authority dispatch in its MTEP studies (rather than assessing against MISO's entire footprint); (3) it is not clear whether MISO assessed the impact of the SATOA at full output under shoulder/off-peak conditions; (4) it is unclear under which of the N-2 contingencies (or all of them) that the SATOA was dispatched at full output for injection or withdrawal; and (5) the MTEP19 report did not mention power systems computer-aided design models or confirm that there were no adverse interactions in terms of subsynchronous resonance or low short circuit issues.³²⁷

³²⁴ *Id.* at 42.

³²⁵ *Id.* at 43.

³²⁶ *Id.* at 23.

³²⁷ *Id.* at 23-25.

c. Answers

151. MISO reiterates that a SATOA approved for inclusion in the MTEP will be included in the model at the start of a queue cycle.³²⁸ MISO argues that, if a SATOA is approved for inclusion in the MTEP during a queue cycle, that queue cycle is unaffected. MISO states that the model in the queue cycle will not be updated to reflect the inclusion of the SATOA *unless* the SATOA (or other transmission facility) would otherwise resolve an issue identified in the GIP process. MISO contends that its planning processes are fully outlined in its Tariff and related Business Practice Manuals.

152. MISO also disagrees with Stakeholder Participants' assertion that the expansion planning process is not as rigorous as the GIP.³²⁹ MISO explains that SATOAs, as with other projects in the expansion planning process, will be discussed at multiple stakeholder meetings, which are open to MISO stakeholders and where feedback on identified Transmission Issues and proposed solutions is solicited. MISO states that generator interconnection customers concerned about impacts from the expansion planning process may attend and participate in those stakeholder meetings. Further, MISO argues, any SATOA selected for inclusion in the MTEP will not adversely impact a generating facility in the DPP phase as those DPP studies are not updated for changes to the MTEP that occur after the DPP phase has begun. Finally, MISO asserts that there is no cost shift from a SATOA because any mitigation needed as a result of a SATOA will be included as part of the SATOA project.

153. Stakeholder Participants argue that MISO has not demonstrated that SATOA evaluations will not harm proposed generation in the GIP queue.³³⁰ Stakeholder Participants explain that, in their view, MISO apparently defines "current" as the next study group and not projects that are currently being studied in the GIP. Stakeholder Participants explain that they believe this to be the case based on the evaluation that MISO undertook when the Waupaca Project was considered in MTEP19. At that time, Stakeholder Participants state, the August 2017 West study group was in mid-process (as it still is today), and MISO did not consider this generation when it assessed the impact of that SATOA project on generation in the GIP queue. Therefore, Stakeholder Participants conclude that MISO has not thought through how SATOA evaluations must be modeled to ensure that there will be no harm to generation projects that are currently being studied by MISO in the GIP.

³²⁸ MISO Post-Technical Conference Answer at 17.

³²⁹ *Id.* at 18.

³³⁰ Stakeholder Participants Post-Technical Conference Answer at 8-9.

154. Next, Stakeholder Participants argue that MISO has failed to take into account that the study standards in the MTEP are significantly different than the study standards in the GIP.³³¹ Stakeholder Participants assert that a wires-based transmission asset impacts proposed generation in the generator interconnection queue much differently than a resource such as a SATOA, which physically generates and injects power and that MISO does not study SATOA projects with sufficient rigor. Stakeholder Participants explain that these differences between the MTEP and DPP processes completely mask expected transmission conditions to other generating facilities, which is fundamentally unfair because these generation developers cannot make informed decisions about whether to complete the DPP process and build their proposed generating facilities. Stakeholder Participants add that a lack of comparable rigor can also lead to cost shifts in the form of network upgrades or potentially unexpected capital costs to mitigate power quality issues after DPP projects are constructed and operating.

155. Stakeholder Participants continue by stating that the introduction or removal of a SATOA project in the middle of a DPP study could easily result in the assignment of new network upgrade costs to generation projects in that cycle because of changes in power flows, interactions with other inverter-based generation technologies and application of MISO transmission owner Local Planning Criteria.³³² Stakeholder Participants argue that such conditions would warrant a DPP restudy, which, they argue is counter to Commission policy.

156. Finally, Stakeholder Participants take issue with MISO's statement that it will undertake a sensitivity case in the MTEP where DPP study generating facilities will be added.³³³ Stakeholder Participants believe that MISO's proposed analysis is flawed because it will not consider MISO transmission owner Local Planning Criteria as applied to generators, inverter interactions with queued projects that are mid-cycle, and affected systems. Stakeholder Participants conclude that there is no evidence in the record in this docket that supports MISO's explanation that no network upgrades for the SATOA will be assigned to customers in the interconnection queue. Stakeholder Participants believe that the network upgrades will instead be shifted to later-queued cycles or undertaken as a market-participant project by operating generation because the level of market curtailment after commercial operation resulting from SATOA projects is greater than was studied in the GIP.

³³¹ *Id.* at 9-11.

³³² *Id.* at 11.

³³³ *Id.* at 12.

d. Commission Determination

157. We find that MISO has shown that a proposed SATOA will not affect the generator interconnection queue in an unjust and unreasonable or unduly discriminatory or preferential manner, subject to the condition below. We agree with MISO that the separation between the MTEP and GIP processes allows for the approval of MTEP projects without impacting generating facilities in the interconnection queue. However, we agree with protesters' assertion that MISO's proposed Tariff language does not provide sufficient clarity as to how MISO will evaluate the impact of a SATOA on the interconnection queue and how MISO will ensure that no costs of mitigating a SATOA's impact on the interconnection queue are passed on to generating facilities.³³⁴ Without this information, an interconnection customer may not understand how MISO will evaluate potential SATOAs to determine their relationship to an individual interconnection request and whether those SATOAs would impact their network upgrade cost assignment.

158. MISO's post-technical conference comments clarify its proposal.³³⁵ In those comments, MISO explains that its expansion planning model with the DPP generating facilities incorporated will be tested with and without the SATOA operation under the NERC transmission planning reliability standard contingent conditions for which, and in the manner which, the SATOA will be operated. MISO adds that, if the incremental SATOA operation causes any facilities to exceed limits with the DPP generating facilities modeled, the costs of any upgrades necessary as mitigation will be included in the SATOA project costs and will be considered part of the overall SATOA project. If the SATOA project is still the preferred solution based upon cost, performance, and other evaluation criteria in the Tariff, then the combined project costs will be included in the MTEP and eligible for cost recovery through the appropriate Attachment and Schedule of the Tariff. We find that these details must be included in the Tariff because they significantly affect rates, terms, and conditions of service; the costs of any mitigation required to address impacts will be included in transmission rates. We further find that the inclusion of these details will provide the requisite clarity to render this portion of MISO's proposal just and reasonable and not unduly discriminatory or preferential by ensuring that MISO's analyses will be applied to SATOA proposals on a consistent basis. Therefore, we direct MISO, in the compliance filing due within 45 days from the date of this order, to revise its Tariff to include these details.

³³⁴ Joint MISO Stakeholder Sector Participants Protest at 23-24; ESA Comments at 4; GlidePath Protest at 7; Stakeholder Participants Post-Technical Conference Comments at 39-42.

³³⁵ MISO Post-Technical Conference Comments at 40-41, 46, 49-50.

159. We disagree with Stakeholder Participants' argument that a SATOA could usurp capacity in the GIP, and that this would not be the case if a traditional transmission solution were included in the MTEP or selected in the MTEP for purposes of cost allocation, as that type of asset would not take up any interconnection service.³³⁶ We find that Stakeholder Participants oversimplify the situation. When a traditional transmission solution goes into service, it inevitably changes system topology in a way that may change the amount of available interconnection capacity in a specific location. MISO has committed to mitigate any specific impacts from a SATOA on prospective generating facilities, so it appears that Stakeholder Participants are concerned about owners of potential future generating facilities who do not yet have any expectation of the availability of interconnection service.

160. We disagree with Stakeholder Participants' argument that MISO will be unable to fully realize the extent of a SATOA's potential impact on the interconnection queue because MISO's modeling standards for the MTEP differ from its modeling standards for the GIP.³³⁷ While we agree that the modeling standards are not identical, we find that appropriate because the reason for modeling a transmission asset is different than the reason for modeling a prospective generating facility. MISO will evaluate the SATOA's impact on the generator interconnection queue in the same manner it does for any other transmission asset. We also disagree with Stakeholder Participants' argument that MISO's proposal is deficient because the addition of inverter-based generation (a SATOA) in a specific local area may create reliability concerns.³³⁸ We find that MISO has adequately explained how it will mitigate reliability impacts caused by the addition of a SATOA, and, as stated above, we are requiring MISO to add this clarification to its Tariff.

161. We dismiss as speculative Stakeholder Participants' concern regarding the potential operation of a SATOA once the SATOA is no longer needed to resolve the transmission need.³³⁹ MISO's Tariff explains that the SATOA may be removed from the transmission system by going through the MTEP planning process.³⁴⁰ If a SATOA that was no longer needed to serve its transmission need would like to participate as an electric storage resource in the market, the device would need to enter the interconnection

³³⁶ Stakeholder Participants Post-Technical Conference Comments at 39, 42.

³³⁷ *Id.* at 40, 47; Stakeholder Participants Post-Technical Conference Answer at 9-11.

³³⁸ Stakeholder Participants Post-Technical Conference Comments at 40.

³³⁹ *Id.* at 43.

³⁴⁰ Filing, Tab A, proposed MISO Tariff, att. FF, § II.G.7 (71.0.0).

queue as an interconnection customer, just as any other generating facility seeking to participate in the market. Additionally, the specific operating guide for the SATOA will dictate the narrow set of circumstances under which the SATOA will be allowed to operate unless it proceeds through the entire interconnection process.

162. We dismiss Stakeholder Participants' attempt to point to the evaluation of the Waupaca Project in MTEP19 as indicative of how MISO will implement these Tariff revisions in a way that is unfair to generating facilities in the interconnection queue.³⁴¹ We find that these arguments, which surround a project identified by MISO prior to Commission approval of its Tariff revisions, are outside the scope of this proceeding. We also note that MISO considered the Waupaca Project through its open and transparent transmission planning process, which provided all stakeholders with the ability to participate and provide input into MISO's evaluation of the project. To the extent that protestors have concerns with MISO's evaluation process, they may file a separate complaint under FPA section 206.

163. Finally, we are not persuaded by Stakeholder Participants' argument that, despite MISO's assurances to the contrary, the addition of a SATOA during a queue cycle could result in restudies.³⁴² As MISO explains, if a SATOA is approved for inclusion in the MTEP during a queue cycle, the model in the queue cycle will not be updated to reflect the inclusion of the SATOA unless the SATOA (or other transmission facility) would otherwise resolve an issue identified in the GIP process.³⁴³ We find MISO's explanation to be sufficient and disagree with Stakeholder Participants that a restudy would be required under these circumstances. We note that the mid-cycle situation is not a situation that is unique to a SATOA, but rather could occur with the addition of any transmission asset.

The Commission orders:

(A) MISO's proposed Tariff revisions are hereby accepted, subject to condition, to become effective August 11, 2020, as discussed in the body of this order.

³⁴¹ Stakeholder Participants Post-Technical Conference Comments at 23.

³⁴² Stakeholder Participants Post-Technical Conference Answer at 11.

³⁴³ MISO Post-Technical Conference Answer at 17.

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(B) MISO is hereby directed to submit a compliance filing within 45 days of the date of this order, as discussed in the body of this order.

By the Commission. Commissioner Danly is dissenting with a separate statement attached.

(S E A L)

Kimberly D. Bose,
Secretary.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Midcontinent Independent System Operator, Inc.

Docket No. ER20-588-000

(Issued August 10, 2020)

DANLY, Commissioner, *dissenting*:

1. I oppose the order in this case as impermissibly blurring the line between generation and transmission. No matter how our order characterizes the function of energy storage facilities, the service contemplated by Midcontinent Independent System Operator, Inc.'s (MISO) filing is accomplished through the discharge of energy from storage units into the MISO transmission system. That, in my view, is a generation function, not a transmission function.
2. Section 201(a) of the Federal Power Act distinguishes between “Federal regulation of matters relating to generation” and “that part of such [utility] business which consists of the transmission of electric energy in interstate commerce.”¹ This statutory provision recognizes that generation and transmission are two wholly distinguishable categories of functions carried out by utilities, and it reflects the real differences between the two categories. The output of generation is amenable to being sold in a competitive market construct in a way that building long-term, capital-intensive transmission infrastructure is not.
3. MISO's filing would eliminate the distinction between generation and transmission facilities based on function, and instead define transmission facilities based on the service provided. However, at least since the issuance of Order No. 888,² the Commission has resisted such definitions, and instead required that services provided by generation facilities that support transmission be supplied as ancillary services. I agree

¹ 16 U.S.C. § 824(a) (2018).

² *Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities*, Order No. 888, FERC Stats. & Regs. ¶ 31,036 (1996) (cross-referenced at 75 FERC ¶ 61,080), *order on reh'g*, Order No. 888-A, FERC Stats. & Regs. ¶ 31,048 (cross-referenced at 78 FERC ¶ 61,220), *order on reh'g*, Order No. 888-B, 81 FERC ¶ 61,248 (1997), *order on reh'g*, Order No. 888-C, 82 FERC ¶ 61,046 (1998), *aff'd in relevant part sub nom. Transmission Access Policy Study Group v. FERC*, 225 F.3d 667 (D.C. Cir. 2000), *aff'd sub nom. New York v. FERC*, 535 U.S. 1 (2002).

with the Commission's determination in Order No. 888 and subsequent decisions that ancillary services are deemed to be transmission services. More importantly for this proceeding, I also agree with the Commission's determination in Order No. 888 that the cost of ancillary services, which are provided by generation facilities, be unbundled from the cost of transmission service provided by transmission facilities.³

4. What, at root, is the problem with MISO's proposal? Without regard for the real, functional differences between transmission and generation, MISO's filing assigns transmission status to storage facilities performing a generation function. In so doing, MISO grants such facilities, by virtue of that assignment, the benefit of guaranteed recovery of costs and profit. MISO justifies this treatment on the grounds that storage facilities are providing a transmission service. In response to protestors' claims of undue discrimination, MISO responds—somewhat blithely—that there is no undue discrimination because the proposal “merely extends to SATOA the same project framework as applies for similar wires solutions in the same project category.”⁴ This response ignores the Commission's established practice of unbundling from transmission rates the cost of transmission services provided by generation facilities. It is as unsatisfying as it is legally insufficient. More of an explanation is required for why discrimination between similarly situated parties is not undue.

5. I recognize that MISO has made a good faith effort to carefully design its proposal so as to confer eligibility upon those energy storage units that only provide support for transmission reliability in limited, specified situations. But I am concerned that, once the door is opened, it can swing in only one direction, and we soon will be faced with proposals seeking to widen the opening ever further. Indeed, the order in this case providing for a generic definition of storage as a transmission only asset already represents a significant expansion of the Commission's *Western Grid* decision, in which the Commission stated that it would evaluate such requests on a case-by-case basis.⁵

6. The further we expand the definition of transmission by including facilities that inject energy into the system, the more difficult it will be to prevent yet further expansion. And the Commission will find it challenging to justify its actions in the face

³ Order No. 888, FERC Stats. & Regs. ¶ 31,036, at 31,706. The Commission also distinguished between capacitors as a transmission resource and generators providing reactive power as falling in different categories: “A poor power factor at a customer's delivery point creates a need for either transmission reactive facilities (*i.e.*, capacitors) or local generator-supplied voltage support.” *Id.* at 31,707.

⁴ MISO February 5, 2020 Answer at 8.

⁵ *Western Grid Dev., LLC*, 130 FERC ¶ 61,056, *reh'g denied*, 133 FERC ¶ 61,029 (2010) (*Western Grid*).

of the discrimination claims that inevitably will be raised by generators seeking the same full cost of service treatment afforded to transmission assets. All of which is to say that it would be preferable to maintain the bright line between generation and transmission previously established by the Commission based on function and hold that facilities injecting energy into a transmission system are not transmission facilities.

7. Of course, storage facilities can provide the transmission-related services that MISO contemplates when they offer the best solution to a transmission constraint. However, provision of such services should be through the sale of an ancillary service in competition with other generation facilities, as is done today for ancillary services such as reactive power and frequency control.

8. As I noted, in *Western Grid*, the Commission granted a petition for declaratory order finding that certain energy storage projects were eligible for inclusion in transmission rates based on the way in which the projects were to be operated. I believe that we now should reject MISO's filing and explicitly find that our holding in *Western Grid* was in error.

For these reasons, I respectfully dissent.

James P. Danly
Commissioner

Document Content(s)

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