165 FERC ¶ 61,016
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Kevin J. McIntyre, Chairman;
Cheryl A. LaFleur, Neil Chatterjee,
and Richard Glick.

Midcontinent Independent System Operator, Inc. Docket Nos. ER18-1410-000
ER18-1410-001

ORDER ACCEPTING TARIFF REVISIONS

(Issued October 12, 2018)

1. On April 20, 2018 (April 20 Filing), as amended on August 13, 2018 (August 13 Amendment), Midcontinent Independent System Operator, Inc. (MISO), pursuant to section 205 of the Federal Power Act,[1] filed proposed revisions to its Open Access Transmission, Energy, and Operating Reserve Markets Tariff (Tariff) to add a set of connection procedures and a connection agreement for Merchant High Voltage Direct Current (MHVDC) transmission projects. MISO further proposes to revise its Generator Interconnection Procedures (GIP) in Attachment X of its Tariff to include an Injection Rights construct for MHVDC Connection Customers' use.[2] In this order, we accept MISO's proposed revisions, as discussed below.

I. Background

2. MISO states that its current Tariff does not have specific procedures for connecting external MHVDC transmission facilities to the MISO system, and that in the past several years, it has received connection requests from transmission developers

[1] 16 U.S.C. § 824d (2012).

[2] MHVDC Connection Customer refers to the developer of the MHVDC transmission project that is a MISO customer seeking to connect its MHVDC transmission line to the MISO transmission system pursuant to the connection procedures and agreement discussed herein. External generators who are customers of the MHVDC transmission line itself are distinct from MHVDC Connection Customers.

seeking to connect proposed MHVDC transmission lines external to the MISO grid.[3] MISO states that it initially processed those requests under its GIP based on the assumption that the flow of power on MHVDC transmission lines was controllable, meaning MISO could treat MHVDC transmission lines similarly to generator lead lines. However, MISO states that stakeholders had differing opinions on whether it was appropriate to process MHVDC connection requests through the GIP, with several calling for the development of procedures tailored to the specific attributes of MHVDC transmission lines in order to better account for the business needs of MHVDC Connection Customers and the external generating facilities that will make use of MHVDC transmission lines.[4]

3. MISO notes that it has significantly restructured its GIP. According to MISO, this restructuring raised new questions about how to handle several MHVDC connection requests that were pending in its generator interconnection queue, which MISO had placed in the now-defunct System Planning and Analysis Phase (SPA Phase) of the queue.[5] MISO had scheduled to eliminate the SPA Phase on June 16, 2017; accordingly, MISO made a filing in advance of that date to transfer the pending MHVDC requests to the new Pre-Queue Phase. In that filing, MISO explained that the proposed transfer was a transitional mechanism to handle both pending and potential new MHVDC connection requests prior to the adoption of formal MHVDC connection procedures. On September 28, 2017, the Commission issued an order accepting this transitional mechanism, noting that the filing presented "an interim mechanism that maintains the queue priority of pending HVDC Interconnection Requests, as well as provides a temporary pathway for new HVDC requests, prior to the adoption of more formalized HVDC connection procedures."[6]

4. MISO states that its MHVDC connection proposal is the result of approximately two years of extensive stakeholder discussions and collaboration. MISO states that early

[3] MISO intends the transmission connection procedures and agreement proposed in the instant proceeding to apply only to external MHVDC transmission lines, which it defines as HVDC lines that connect to MISO's system at one termination point. *See* MISO Tariff, Attachment GGG, § 1. Accordingly, all references in this order to MHVDC transmission lines refer to external MHVDC transmission lines.

[4] MISO Filing at 2.

[5] *Id.* at 3 (citing *Midcontinent Indep. Sys. Operator, Inc.*, 158 FERC ¶ 61,003, *order on reh'g*, 161 FERC ¶ 61,137 (2017)).

[6] *Id.* (citing *Midcontinent Indep. Sys. Operator, Inc.*, 160 FERC ¶ 61,132, at P 11 (2017) (September 28 Order)).

and frequent stakeholder engagement has enabled it to develop the Tariff revisions submitted in the instant proceeding, which MISO asserts effectively balance stakeholder preferences and both leverage and complement MISO's existing interconnection processes.[7]

II. Filing

5. To establish a new, separate MHVDC connection process, MISO proposes to revise its GIP as well as add a new Attachment GGG to its Tariff to include a new set of MHVDC Connection Procedures, a *pro forma* MHVDC connection request form, and a *pro forma* Transmission Connection Agreement. The MHVDC Connection Customer may, at any time in the process, elect to take traditional transmission service[8] to import electricity into MISO or obtain a new product called Injection Rights.

6. Under the Injection Rights option, the MHVDC Connection Customer may obtain a pre-certification of the MISO system's capability to receive energy and capacity up to the full MW capacity of the proposed MHVDC transmission line. Once acquired, the MHVDC Connection Customer may allocate Injection Rights to upstream, external generating facilities that interconnect to the MHVDC transmission line through the External Network Resource Interconnection Service (E-NRIS)[9] conversion process. Finally, MISO proposes that, if an MHVDC Connection Customer chooses to instead use the MHVDC transmission line to withdraw energy from the MISO grid, all such transactions shall be subject to all applicable MISO rates and Tariff schedules.

7. MISO asserts that the proposed Tariff revisions are just and reasonable and that the Commission should accept its proposal for several reasons. First, MISO states that the proposed revisions fulfill its commitment to stakeholders by providing a set of Tariff procedures that, carefully crafted with their input, resolve their identified need for a

[7] *Id.* at 4.

[8] "Traditional transmission service" refers to point-to-point transmission service over a transmission line in MISO's system. The transmission customer could also be designated as a network resource or take secondary network service.

[9] Network Resource Interconnection Service (NRIS) allows an interconnection customer to interconnect its generating facility to the MISO transmission system or distribution system, as applicable, and integrate its generating facility with the transmission system. Additionally, MISO's Tariff states that "Network Resource Interconnection Service does not convey transmission service." MISO Tariff, Attachment X, § 1. An E-NRIS customer is an interconnection customer with a project outside of the MISO footprint seeking NRIS interconnection service.

separate MHVDC connection process. Second, MISO states that, as a set of standard procedures, the MHVDC connection process will benefit MHVDC developers and other affected parties because they will increase transparency and ensure that MISO will handle MHVDC connection requests uniformly, efficiently, and without undue discrimination. Third, MISO contends that the Injection Rights option will enhance opportunities for external generators that are connected to MHVDC transmission lines to participate in MISO's markets. Fourth, MISO asserts that Injection Rights help accommodate diverse MHVDC business models. Finally, MISO states that in the September 28 Order, the Commission noted that MISO had convened a stakeholder process to develop MHVDC Connection Procedures.[10] According to MISO, the proposal in the instant proceeding fulfills that expectation.[11] MISO requests that proposed Tariff revisions take effect as of July 19, 2018.

8. On July 12, 2018, Commission staff issued a deficiency letter that asked MISO to clarify aspects of its filing (Deficiency Letter). On August 13, 2018, MISO submitted a response with amendments to its proposed Tariff revisions (Deficiency Response).

III. Notice of Filing and Responsive Pleadings

9. Notice of MISO's April 20 Filing was published in the *Federal Register*, 83 Fed. Reg. 18,547-01 (2018), with interventions and protests due on or before May 11, 2018. Timely motions to intervene were filed by: Ameren Services Company; Entergy Services, Inc.; NRG Power Marketing LLC and GenOn Energy Management, LLC; American Municipal Power, Inc.; and Pattern Transmission LP. SOO Green Renewable Rail, LLC (SOO Green) filed a timely motion to intervene and protest (Filing Protest). On May 30, 2018, MISO filed an answer to SOO Green's protest (MISO Answer). On June 4, 2018, SOO Green filed an answer to MISO's answer (SOO Green Answer).

10. Notice of MISO's Deficiency Response and August 13 Amendment was published in the *Federal Register*, 83 Fed. Reg. 42,285-02 (2018), with interventions and protests due on or before September 4, 2018. The Missouri Joint Municipal Electric Utility Commission filed a timely motion to intervene. On September 5, 2018, SOO Green filed a protest to MISO's Deficiency Response (Deficiency Response Protest). On September 24, 2018, MISO filed an answer to SOO Green's Deficiency Response Protest (MISO Answer to Deficiency Response Protest).

[10] *See* September 28 Order, 160 FERC ¶ 61,132 at P 12.

[11] MISO Filing at 10-11.

IV. Discussion

A. Procedural Matters

11. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2018), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

12. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2018), prohibits an answer to a protest or answer unless otherwise ordered by the decisional authority. We accept the answers filed by MISO and SOO Green because they have provided information that assisted us in our decision-making process.

B. Substantive Matters

13. As discussed more fully below, we find that MISO's proposal to revise its Tariff to include MHVDC Connection Procedures, a *pro forma* MHVDC connection request form, a *pro forma* Transmission Connection Agreement – which, together, establish the MHVDC connection process and the Injection Rights construct – is just, reasonable, and not unduly discriminatory or preferential. Thus, we accept the Tariff revisions, to be effective July 19, 2018, as requested.

1. Comparability to the Generator Interconnection Agreement (GIA) and GIP

a. Deficiency Letter

14. In the Deficiency Letter, Commission staff requested information to aid the Commission in evaluating MISO's proposed Tariff revisions. Among other things, Commission staff requested that MISO explain why it was appropriate to base certain provisions in its proposed MHVDC Connection Procedures and Transmission Connection Agreement on provisions in its existing GIP and GIA. Further, Commission staff asked that, to the extent that MISO had *not* based certain provisions in its proposed MHVDC Connection Procedures and Transmission Connection Agreement on its existing GIP and GIA, MISO should provide detailed explanations of how its MHVDC connection process deviates from the GIP and GIA and its reasoning for why such deviations were appropriate and reasonable. Further, Commission staff asked MISO to clarify if it intended to update the Transmission Connection Agreement consistent with updates to the GIA, and if not, to explain any deviations given that MISO acknowledged that it intended the Transmission Connection Agreement to follow the GIA.

b. Deficiency Response

15. In its Deficiency Response, MISO states that unlike the GIA, where there is a Commission *pro forma* agreement, the Commission has not adopted any *pro forma* transmission connection procedures or agreements. MISO also notes that it currently files transmission connection agreements involving its transmission-owning members on an *ad hoc* basis. MISO states that these agreements do not utilize any standard or *pro forma* terms and vary on a case-by-case basis.[12] MISO states that other Regional Transmission Organizations (RTO) have adopted various transmission connection procedures and *pro forma* agreements for their customers, which MISO notes it reviewed when creating its proposal. MISO states that other RTOs' transmission connection procedures were often developed based on the RTOs' generator interconnection procedures and/or agreements. MISO also states that the Commission accepted these different models and found them to be just and reasonable and noted that it was reasonable to take into account the RTOs' generator interconnection procedures when developing transmission connection procedures, except where the differences between generation and transmission facilities dictate otherwise.[13]

16. MISO states that, informed by this precedent, it used its GIP as a starting point to develop the proposed revisions. However, MISO notes that MHVDC transmission lines are not generators and, therefore, procedures for connecting MHVDC facilities cannot be identical to generator interconnection procedures, particularly given that the MHVDC Connection Procedures will apply only to external facilities. MISO states that the technical differences between MHVDC transmission lines and generating facilities, and the limited number of MHVDC connection requests that MISO expects to receive, make copying the GIP in all respects unnecessary and impractical.[14]

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[12] Deficiency Response at 2-3.

[13] *Id.* at 3 (citing *ISO New England, Inc.*, 151 FERC ¶ 61,024 (2015) (accepting interconnection procedures and a *pro forma* agreement for, among other things, merchant transmission facilities that were based on Commission-approved large generator interconnection procedures and a *pro forma* large generator interconnection agreement) (*ISO-NE*); *PJM Interconnection, L.L.C.*, 102 FERC ¶ 61,277, at P 13 (2003) (accepting merchant transmission interconnection procedures that apply "the same study procedures and, except where physical differences between transmission and generation facilities dictate otherwise, the same standard terms and conditions of interconnection and related construction agreements that apply" to generator interconnections) (*PJM*)).

[14] *Id.*

17. MISO notes that the proposed revisions also include a unique product that has no counterpart in the GIP: Injection Rights. MISO states that although requests for Injection Rights will be processed under the GIP, the construct requires certain, additional provisions that have no parallel in the GIP or other RTOs' procedures. MISO states that because of differences in the nature of the facilities (i.e., generation vs. transmission), the fact that MHVDC transmission lines are external facilities, and the unique design of the Injection Rights product, MISO and its stakeholders developed a specific set of procedures, including the Transmission Connection Agreement, that adopts some elements from MISO's GIP and GIA while containing many *sui generis* or unique requirements and provisions. MISO argues that the Commission should evaluate the proposed revisions on their merits under the just and reasonable standard of section 205 of the FPA, because there are no *pro forma* transmission connection procedures in the Commission's regulations, and the *pro forma* GIP does not apply to transmission facilities. Thus, MISO states that it should not be required to justify the proposed revisions under any explicit or implicit "consistent with or superior to" standard applicable to deviations from *pro forma* agreements.

18. Finally, MISO states that it will assess any future changes to GIA provisions on an individual basis to determine whether corresponding changes to the Transmission Connection Agreement are warranted. If so, MISO affirms that it will propose appropriate revisions pursuant to section 205 of the FPA. However, MISO believes that a rigid rule mandating in advance that parallel revisions be made to substantially identical provisions in the Transmission Connection Agreement and the GIA is not justified.[15]

c. Deficiency Response Protest

19. SOO Green asserts that although MISO's proposed MHVDC Connection Procedures and *pro forma* Transmission Connection Agreement are modeled after MISO's GIP and GIA, respectively, MISO's revisions to the GIP should be reviewed under the Commission's "consistent with or superior to" standard. SOO Green also requests that the Commission require MISO to establish that its proposed MHVDC Connection Procedures and *pro forma* Transmission Connection Agreement are just and reasonable and not unduly discriminatory or preferential.[16] SOO Green further states that no MHVDC project has executed a Transmission Connection Agreement with MISO and that MISO's proposed Transmission Connection Agreement should be treated as a "guideline," instead of a *pro forma* agreement, to allow the parties more freedom to negotiate terms based on their circumstances. SOO Green also notes that MISO will be

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

[16] Deficiency Response Protest at 2-3.

in a better position to propose a *pro forma* Transmission Connection Agreement after it has first executed a Transmission Connection Agreement with an MHVDC project.[17]

d. Commission Determination

20. We find that it was reasonable for MISO, in crafting its proposed MHVDC Connection Procedures and Transmission Connection Agreement, to review its GIP and GIA as well as other RTOs' transmission connection procedures, and adopt various elements for its MHVDC Connection Procedures and Transmission Connection Agreement. We also agree with MISO that the inherent differences between transmission and generation, the nature of external MHVDC projects, and the design of the Injection Rights construct make it impractical to require that the MHVDC Connection Procedures and Transmission Connection Agreement mirror the GIP and GIA, respectively, and that these inherent differences may justify certain deviations.[18] We therefore disagree with SOO Green that this proposal should be evaluated as "consistent with or superior to" MISO's GIP. Our approach in evaluating MISO's MHVDC Connection Procedures and Transmission Connection Agreement is consistent with the approach the Commission took when it considered the transmission connection processes accepted in the *ISO-NE* and *PJM* cases discussed above.[19]

21. Additionally, we find it appropriate for MISO, as it states in its Deficiency Response, to assess any future changes to GIA provisions on an individual basis to determine whether corresponding changes to the Transmission Connection Agreement are warranted and, if so, to propose appropriate revisions pursuant to section 205 of the FPA.

2. General MHVDC Connection Procedures

a. Filing

22. MISO states that the proposed MHVDC Connection Procedures are set forth in a new Attachment GGG to the Tariff. MISO states that in designing the MHVDC Connection Procedures, it generally followed the template set forth in the existing GIP, with necessary adjustments. MISO states that the proposed MHVDC Connection Procedures apply to: (i) the connection of a new MHVDC transmission line at a new point of connection, (ii) additional capacity requested for an existing MHVDC transmission line at an existing point of connection, or (iii) a substantive modification to

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

[18] *See* Deficiency Response at 4.

[19] *See supra* n.13.

the operating characteristics on an existing MHVDC transmission line. MISO notes that the MHVDC Connection Procedures apply only to merchant facilities and will not apply to transmission facilities that are included in the rate base of any public utility and on which a regulated return is earned. Further, MISO explains that because the MHVDC Connection Procedures are designed for external facilities, they will not apply to any new or existing transmission facilities included in the MISO transmission system or any interconnection facilities that are included in a GIA. Finally, MISO states that any existing HVDC lines or facilities within MISO or any HVDC generator lead lines that qualify as interconnection facilities under the GIP will not be subject to the proposed MHVDC Connection Procedures.[20]

23. MISO states that the product the MHVDC Connection Customer obtains under the MHVDC Connection Procedures is MHVDC transmission connection service.[21] MISO explains that this product allows the MHVDC Connection Customer to physically connect its MHVDC transmission line with the MISO transmission system. MISO states that the MHVDC transmission line will be an external facility over which MISO will not have functional control. MISO notes that once the proposed MHVDC transmission line is constructed and placed in service, it will be operated by the MHVDC Connection Customer under its own Commission-approved open access transmission tariff or a reciprocal non-jurisdictional tariff. MISO states that, to the extent the MHVDC Connection Customer wants to transfer any of its facilities to MISO's functional control, it must become a MISO Transmission Owner and follow the procedures set forth in the MISO Transmission Owners Agreement, subject to its terms and conditions.[22]

24. To initiate the process of MHVDC connection, the customer submits an MHVDC transmission connection request and a study deposit in the amount of $100,000 to MISO.[23] Shortly thereafter, MISO arranges the scoping meeting between MISO, the MHVDC Connection Customer, and the MISO Transmission Owner to which the MHVDC Connection Customer will connect (host Transmission Owner).[24] MISO then conducts a study to determine the required connection facilities and any network or Necessary Upgrades to allow for connection of the MHVDC transmission line.[25] The

[20] MISO Filing at 5.

[21] *See* MISO Tariff, Attachment GGG, § 3.2.

[22] MISO Filing at 6.

[23] MISO Tariff, Attachment GGG, § 3.3.1.

[24] *Id.* § 3.3.5.

[25] *Id.* § 5.

MHVDC Connection Customer is responsible for the costs of all upgrades to allow it to inject the full output of its MHVDC transmission line onto the MISO system.

25. MISO states that once it completes its evaluation of the impact of an MHVDC transmission line's request for transmission connection service on the MISO system, the MHVDC Connection Customer, the host Transmission Owner, and MISO will negotiate and execute a Transmission Connection Agreement, substantially in the form as set forth in Appendix 2 to Attachment GGG. MISO states that the Transmission Connection Agreement establishes the parties' responsibilities with respect to construction of connection facilities, study and construction of various upgrades, operations and maintenance responsibilities, requirements applicable to emergencies, various equipment requirements and specifications, and necessary legal provisions. MISO states that the procedures for tender, negotiation, execution, and filing of the Transmission Connection Agreement are consistent with those applicable to GIAs in the GIP.

b. Commission Determination

26. We find MISO's proposed MHVDC Connection Procedures, which allow MHVDC Connection Customers to connect to MISO's transmission system and are contained in new Attachment GGG in the Tariff, are just and reasonable and not unduly discriminatory or preferential. We agree with MISO that the proposed revisions meet the need for a separate MHVDC connection process that MISO and its stakeholders identified. Below, we discuss in more detail specific aspects of the MHVDC Connection Procedures and the Transmission Connection Agreement.

27. We find the proposed Transmission Connection Agreement, contained in Appendix 2 of new Attachment GGG, to be a just and reasonable way to set forth the parties' responsibilities. Certain details related to the Transmission Connection Agreement are discussed further below. We further find just and reasonable the process through which the MHVDC Connection Customer moves through the MHVDC Connection Procedures culminating in receipt and execution of a Transmission Connection Agreement. We note that this process is generally similar to the generator interconnection study process under the GIP, which proceeds through studies to the execution of a GIA.

28. We note that once the MHVDC Connection Customer connects to MISO, the MHVDC Transmission Connection Procedures require, among other things, that the MHVDC Connection Customer provide transmission service "subject to a [Commission]-approved open access transmission tariff or reciprocity tariff."[26] Alternatively, if the

[26] *See* MISO Tariff, Attachment GGG, § 5.3.5.

MHVDC Connection Customer chooses to transfer any of its facilities to MISO's functional control, it would become a MISO Transmission Owner under MISO's Tariff.

3. Injection Rights

a. Filing

29. MISO's proposed revisions include an Injection Rights construct. MISO explains that Injection Rights do not provide any interconnection service or transmission service but instead serve as a pre-certification of the MISO transmission system's capability to receive energy from the MHVDC transmission line at the requested point of connection, and in the specified MW quantity, without degrading the reliability of the transmission system.[27] MISO states that the MHVDC Connection Customer can seek Injection Rights, which MISO then converts to E-NRIS for use by the generation customers of the MHVDC transmission line, in order to facilitate delivery of power into MISO. MISO states that, if an MHVDC Connection Customer elects to connect to MISO without Injection Rights, then MISO will conduct the necessary studies to determine the required connection facilities and upgrades needed to enable a reliable physical connection between the proposed MHVDC transmission line and the MISO transmission system. MISO explains that, by itself, this physical connection does not grant any rights to inject energy into the MISO transmission system, either for the MHVDC Connection Customer or any third party, and that the MHVDC Connection Customer or other eligible customers would need to procure transmission service on the MISO transmission system to engage in any injection or withdrawal transactions between the MISO transmission system and the MHVDC transmission line.[28]

30. MISO states that once it receives a request for Injection Rights, that request is placed in the generator interconnection queue and is processed in accordance with the GIP to determine required network upgrades. MISO states that because Injection Rights essentially represent an aggregate injection evaluation for upstream generating facilities up to the total available capability of the MHVDC transmission line, this evaluation is performed in accordance with the procedures set forth in the GIP. If the MHVDC Connection Customer obtains Injection Rights, MISO notes that those rights will be documented in an appendix to the Transmission Connection Agreement.[29]

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[27] MISO Filing at 7.

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

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

31. Once acquired, the MHVDC Connection Customer can allocate the Injection Rights, without any additional studies, to upstream generating facilities that have obtained service on the MHVDC transmission line through the E-NRIS conversion process.[30] Under the E-NRIS conversion process, MISO will require the external generator interconnected to the MHVDC transmission line who seeks to convert Injection Rights to E-NRIS to provide the following information: (1) a request for E-NRIS pursuant to Appendix 1 of the GIP, to include the requested MW amount to be converted and transferred; (2) documentation of the agreement between the external generator and the MHVDC Connection Customer authorizing the conversion and transfer of the requested Injection Rights; and (3) documentation that the external generator has long-term firm transmission service from its facility to the point of connection with MISO, to include any transmission service agreements over the MHVDC transmission line. MISO also states that the MHVDC Connection Customer is required to provide it with the customer's procedures for allocating Injection Rights to the upstream generating facilities that have obtained service on the MHVDC transmission line. MISO states that these procedures must be non-discriminatory and consistent with the Commission's approval of the MHVDC Connection Customer's right to charge negotiated (market-based) rates for service on the applicable MHVDC transmission line. Upon receipt of the required information, MISO will convert the requested amount of the MHVDC Connection Customer's Injection Rights to E-NRIS and grant that E-NRIS to the applicable upstream generating facility that has obtained service on the MHVDC transmission line; MISO requires such an entity to execute a service agreement for E-NRIS, as set forth in Appendix 13 of the GIP. MISO explains that the conversion is performed without any additional studies, and it will require no further deposits, milestones, or other payments as part of the conversion process, to the extent the MHVDC Connection Customer has already made those payments as part of its Injection Rights studies.[31]

32. Finally, MISO states that any amount of a MHVDC Connection Customer's Injection Rights that is not converted into E-NRIS within three years of the commercial operation date of the MHVDC transmission line, as set forth in the Transmission Connection Agreement, will terminate.[32] Further, MISO states that if an E-NRIS customer with service converted from Injection Rights terminates its own operation within three years of the commercial operation date of the MHVDC transmission line set forth in the Transmission Connection Agreement, that service will revert to the MHVDC Connection Customer as Injection Rights; if an E-NRIS customer terminates its own

[30] *Id.* at 7.

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

[32] *Id.* at 9.

operation after that date, there will be no reversion. MISO asserts that these provisions strike an appropriate balance between competing interests of the various parties involved in the MHVDC connection process and provides MHVDC Connection Customers with the ability to make different decisions based on their particular business models.

b. Filing Protest

33. SOO Green states that MISO should clarify that Injection Rights studies may be limited to the MHVDC transmission line's portion of transmission capacity seeking Injection Rights, as opposed to the MHVDC transmission line's full capacity, because requiring Injection Rights studies to be conducted at a project's full capacity would needlessly increase costs and may be economically infeasible.[33] SOO Green argues that MISO's proposal limits Injection Rights to external generators without explanation, a limitation that SOO Green argues is anticompetitive and unduly discriminatory and would inhibit trade between MISO and other RTOs.[34] In addition, SOO Green claims that allowing external generators to only convert Injection Rights to E-NRIS, without an option to convert those Injection Rights to Energy Resource Interconnection Service (ERIS),[35] is unduly preferential to on-system generators. Furthermore, SOO Green contends that Injection Rights for operational MHVDC transmission lines should not be subject to termination unless the MHVDC Connection Customer is fully compensated for its upgrade costs.[36]

c. MISO Answer

34. MISO contends that SOO Green's arguments regarding Injection Rights are misplaced. With respect to clarifying that Injection Rights studies may be limited to the MHVDC transmission line's portion of transmission capacity seeking Injection Rights, MISO asserts that the Injection Rights option provides the MHVDC Connection Customer with "an evaluation of the MISO Transmission System's capability to accept specified amounts of aggregate energy and capacity, *up to* the total available capability of

[33] Filing Protest at 10.

[34] *Id*. at 11.

[35] ERIS allows an interconnection customer to connect its generating facility to the MISO transmission system or distribution system, as applicable, and to be eligible to deliver the generating facility's electric output using the existing firm or non-firm capacity of the transmission system on an as-available basis. MISO Tariff, Attachment X, § 1.

[36] Filing Protest at 10-11.

the MHVDC Transmission Line."[37] Regarding the proposal to limit Injection Rights to external generators, MISO explains that it grants Injection Rights to MHVDC Connection Customers, and MISO may convert those Injection Rights to E-NRIS for use by external generators seeking to connect to MISO. MISO states that it currently permits external generators to obtain E-NRIS pursuant to the GIP and that the instant proceeding provides another mechanism for external generators to obtain E-NRIS. MISO argues that given this comparable treatment of all external generators, SOO Green's assertion of undue discrimination is unsupported. Similarly, MISO explains that it does not provide external ERIS for external generating facilities and thus treats all external generators comparably. Regarding SOO Green's argument that Injection Rights should not be subject to termination, MISO states that the only use for Injection Rights is to convert them to E-NRIS. MISO states that if that use does not occur, then it is the functional equivalent of a generator not being operational. MISO argues that because system conditions change, Injection Rights should not continue into perpetuity, and the three-year expiration period aligns with the time period afforded generator interconnection customers to retain their interconnection service without achieving or maintaining commercial operation.[38]

d. SOO Green Answer

35. SOO Green argues that because MISO's proposal does not permit conversion of Injection Rights into external ERIS, the provisions limit the ability of market participants to conduct arbitrage transactions by injecting only energy into the MISO market. SOO Green also contends that by tying Injection Rights to particular generators, MISO's proposal limits the pool of potential service providers and the amount of any injections; SOO Green points to an electric marketer as an example of an entity unable to obtain Injection Rights. SOO Green claims that this is anticompetitive and unduly discriminatory and will result in unjust and unreasonable energy rates. SOO Green also contends that MISO's proposal is unduly preferential because it protects incumbent MISO utilities from competition by eliminating energy-only injections into MISO. SOO Green argues that an MHVDC project is different from and should not be treated like an external generator, as an MHVDC project will necessarily physically connect within the MISO footprint.[39]

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[37] MISO Answer at 9 (citing Godbole Testimony at 17 (emphasis added by MISO)).

[38] *Id.* at 8-12.

[39] SOO Green Answer at 2-3.

e. MISO Answer to the Deficiency Response Protest

36. In response to the criticisms of the Injection Rights construct raised in SOO Green's Answer, MISO contends that SOO Green's criticisms of the Injection Rights construct as too limited are misplaced. MISO argues that it addressed these arguments in its initial May 30, 2018 Answer. In response to these criticisms, MISO clarifies that the Injection Rights product adds to, rather than subtracts from, the existing transmission service options available to the external generators that take service over an MHVDC transmission line. MISO states that eligible external generators taking service over an MHVDC transmission line are free to obtain transmission service under the MISO Tariff for their import and export transactions, and the instant proceeding makes no changes to transmission service requirements or procedures.[40]

f. Commission Determination

37. We find MISO's Injection Rights construct, which provides external generators that interconnect to the MHVDC transmission line with the ability to obtain E-NRIS service over the MISO grid, is just and reasonable and not unduly discriminatory or preferential. Because the MHVDC Connection Customer will go through MISO's full interconnection process alongside internal generation customers, no issues of undue discrimination or preferential treatment arise between the external generators that may use the E-NRIS converted from Injection Rights and internal or other external generators that obtain NRIS or E-NRIS, respectively, through MISO's GIP. Additionally, because the MHVDC Connection Customer will be responsible for the costs of any required network upgrades needed for MISO's system to accommodate the requested Injection Rights, we agree that such customers should be treated comparably to generator interconnection customers in the generator interconnection queue.

38. We find that MISO's proposed process for converting Injection Rights to E-NRIS service is also just and reasonable. This E-NRIS conversion process documents: (1) the request for E-NRIS, (2) the agreement between the external generator and the MHVDC Connection Customer for converting and transferring Injection Rights, and (3) the confirmation that the external generator has long-term firm transmission service from its facility to the point of connection with the MISO transmission system. Furthermore, we note that the revised GIP requires that the MHVDC Connection Customer provide documentation to MISO to demonstrate that the MHVDC Connection Customer's procedures for allocating its Injection Rights are consistent with the Commission's grant

[40] MISO Answer to the Deficiency Response Protest at 12.

of negotiated rate authority to the MHVDC Connection Customer, and this should help ensure that the allocation process is not unduly discriminatory or preferential.[41]

39. MISO proposes that any amount of Injection Rights not converted into E-NRIS within three years of the commercial operation date of the MHVDC transmission line, as established in the Transmission Connection Agreement, will be terminated.[42] We find this three-year limitation for Injection Rights is just and reasonable and analogous to the three-year period that must elapse before MISO must terminate an internal generator's GIA.[43] Furthermore, if there were no termination date for Injection Rights, it would allow an amount of capacity created through the interconnection process to remain unused. The Commission has approved MISO's past proposals regarding the treatment of capacity created through the interconnection process that limit an interconnection customer's ability to hold unused capacity to three years, both in the context of terminating a GIA and terminating an interconnection customer's ability to suspend its project.[44] In both situations, the termination can occur after a three-year period has elapsed and limits any interconnection capacity reserved for a specific interconnection customer to this three-year period. Thus, limiting the MHVDC Connection Customer's ability to hold Injection Rights to three years is consistent with this precedent, and we thus find the proposal just and reasonable.

40. Further, MISO states that if an external generator terminates its service pursuant to an E-NRIS service agreement within three years of the commercial operation date of the MHVDC transmission line, the amount of that external generator's service will revert to the MHVDC Connection Customer as Injection Rights. MISO also proposes that the

[41] MISO Filing at 8-9.

[42] MISO Tariff, Attachment X, § 16.2.

[43] Pursuant to Article 2.3.1 of MISO's GIA, MISO must terminate a GIA if a generating facility fails to achieve commercial operation within three years of its commercial operation date. *See Midcontinent Indep. Sys. Operator, Inc.*, 163 FERC ¶ 61,210; *Midcontinent Indep. Sys. Operator, Inc.*, 156 FERC ¶ 61,116 (2016). *See also Big Rivers Electric Corp. v. Midcontinent Indep. Sys. Operator, Inc.*, 158 FERC ¶ 61,132 (2017) (denying Big Rivers Electric Corporation's (Big Rivers) request for waiver of MISO's suspension provision and allowing Big Rivers' interconnection service to be terminated for being suspended for more than three years).

[44] *See* MISO Tariff, § 38.2.7(n). *See also Midcontinent Indep. Sys. Operator, Inc.*, 163 FERC ¶ 61,210; *Midcontinent Indep. Sys. Operator, Inc.*, 156 FERC ¶ 61,116 (2016). *See also Big Rivers Electric Corp. v. Midcontinent Indep. Sys. Operator, Inc.*, 158 FERC ¶ 61,132 (2017).

three-year period to sell the Injection Rights to external generators begins with the commercial operation date set forth in the Transmission Connection Agreement.[45] We find both proposals just and reasonable because an MHVDC Connection Customer should not lose the ability to sell those Injection Rights to external generators that seek service over its MHVDC transmission line prior to the expiration of the three-year period following the commercial operation date of the MHVDC transmission line set forth in the Transmission Connection Agreement. As previously discussed, we find that this three-year period is analogous to the three years afforded to interconnection customers to suspend their projects or the three years allowed to elapse prior to the termination of a GIA, and, thus, we find it appropriate.

4. Termination Provision in Transmission Connection Agreement

a. Filing and Deficiency Letter

41. MISO proposes a termination provision, in Article 14.3.2 of the Transmission Connection Agreement, that does not match the termination provision in the GIA.[46] Specifically, MISO's proposed termination provision reads:

> This [Transmission Connection] Agreement may be terminated by any one of the Parties after giving ninety (90) Calendar Days advance written notice to the other Parties if the MHVDC Transmission Line fails to achieve Commercial Operation for three (3) consecutive years following the Commercial Operation Date, or has ceased Commercial Operation for three (3) consecutive years, beginning with the last date of Commercial Operation for the MHVDC Transmission Line, after giving MHVDC Connection Customer ninety (90) Calendar Days advance written notice.

42. In the Deficiency Letter, Commission staff asked MISO to explain why the termination provisions in the Transmission Connection Agreement differ from those in the GIA.[47]

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[45] MISO Tariff, Attachment X, § 16.2.

[46] The specific differences between MISO's proposal and the GIA are identified and further discussed below.

[47] Deficiency Letter at 2.

b. Deficiency Response

43. MISO states that the Transmission Connection Agreement contains different elements, including some that parallel certain existing GIA provisions. MISO further states that the Transmission Connection Agreement also contains many unique provisions as well as provisions that are common to other transmission-to-transmission agreements.[48]

c. Deficiency Response Protest

44. SOO Green contends that Article 14.3.2 of MISO's Transmission Connection Agreement provides MISO and the MISO Transmission Owners with greater rights to terminate the Transmission Connection Agreement compared to termination rights under Article 2.3.1 of MISO's *pro forma* GIA. SOO Green states that the GIA provides the interconnection customer the right to terminate the GIA upon 90-days' notice, whereas the Transmission Connection Agreement does not provide the MHVDC Connection Customer with a similar right. SOO Green also states that MISO may terminate the GIA if commercial operation is not achieved within three years; however, SOO Green notes, the Transmission Connection Agreement extends that right to the MISO Transmission Owner as well. SOO Green claims that MISO did not identify the transmission-to-transmission interconnection agreements it used as models for the provisions in the Transmission Connection Agreement, nor did it explain why the Transmission Connection Agreement provides MISO and the MISO Transmission Owners with more expansive termination rights than those provided in the GIA.[49] Therefore, SOO Green asserts that MISO should revise the Transmission Connection Agreement to reflect the GIA termination rights provisions.

d. MISO Answer to the Deficiency Response Protest

45. Regarding the termination provision in the Transmission Connection Agreement, MISO argues that unilateral termination rights for the MHVDC Connection Customer, at least as modeled in the first sentence of Article 2.3.1 in the GIA, would be inappropriate in the Transmission Connection Agreement context. Unlike the GIA, MISO argues, the Transmission Connection Agreement provides for the physical connection of a transmission facility that may be part of an integrated transmission grid rather than an isolated generating facility. MISO adds that prior to commercial operation, Article 14.3.2 of the Transmission Connection Agreement permits any party, including the MHVDC Connection Customer, to terminate the agreement for failure to achieve the commercial

[48] Deficiency Response at 5.

[49] Deficiency Response Protest at 15-16.

operation date.[50] MISO further states that it believes that each of the three parties (i.e., the MHVDC Connection Customer, the host Transmission Owner, and MISO) should have the same right to terminate the Transmission Connection Agreement for the MHVDC Connection Customer's failure to achieve commercial operation. Alternatively, if the Commission disagrees, MISO states that it could exercise this right on behalf of the host Transmission Owner, if necessary.[51]

e. Commission Determination

46. We find that the termination provision in MISO's proposed Transmission Connection Agreement is just and reasonable and not unduly discriminatory or preferential. We note that the termination provision in the Transmission Connection Agreement differs from the termination provision in the GIA in two ways.

47. First, the termination provision in the Transmission Connection Agreement allows all parties to terminate the agreement if the MHVDC project fails to reach commercial operation by the commercial operation date. We find that this is just and reasonable. We note that SOO Green appears to be concerned with the host Transmission Owner potentially acting in a discriminatory manner when terminating a Transmission Connection Agreement. We note, however, that in order to terminate a Transmission Connection Agreement, the party requesting termination must file the termination request at the Commission, and any concerned parties would have an opportunity at that time to object to the termination and make any claims of discrimination. If a party were acting in a discriminatory fashion, the Commission could evaluate the matter in reviewing the filing.

48. Second, the Transmission Connection Agreement lacks a provision for the MHVDC Connection Customer to terminate the agreement at any time with 90 days' notice, such as provided to an interconnection customer pursuant to Article 2.3.1 of the GIA. Here, we find that MISO's answer demonstrates that the proposal is just and reasonable and not unduly discriminatory or preferential. As MISO explains, MHVDC transmission lines may be part of an integrated transmission system, and as such, allowing the MHVDC Connection Customer the unilateral right to terminate the Transmission Connection Agreement is not appropriate. The host Transmission Owner could have significant technical challenges if a large transmission line connecting to its system, that is, the MHVDC transmission line, were to cease operation with only 90 days' notice. However, we note that if the MHVDC project is not progressing toward commercial operation, and any of the parties to the Transmission Connection Agreement wish to terminate the agreement before three years from the commercial operation date

[50] MISO Answer to the Deficiency Response Protest at 4.

[51] *Id.* at 5.

has elapsed, those parties are free to file a request for waiver of MISO's Tariff at the Commission to seek early termination.

5. Modifications to the MHVDC Transmission Line

a. Filing and Deficiency Letter

49. Under the proposed Transmission Connection Agreement, should the MHVDC Connection Customer plan to undertake any modifications or operational changes to its connection facilities that may be reasonably expected to impact the Transmission Owner's transmission system, the MHVDC Connection Customer must provide the Transmission Owner with advanced notice of the desired modifications or operational changes. Additionally, the MHVDC Connection Customer needs approval from MISO and from the relevant Transmission Owner for modifications that may impact their transmission system. The modification provision in the Transmission Connection Agreement, found in Article 8.2, states:

> The nature of and the schedule of work for performing such Modifications, or the nature of the Operational Changes shall be subject to review and acceptance by the other Parties, which review and acceptance shall not be untimely nor unreasonably withheld or delayed, to ensure that such Modifications or Operational Changes will (i) not adversely affect a Party's transmission system, or other facilities, (ii) are consistent with Good Utility Practice, and (iii) are as provided in Appendix B of this Agreement.

50. This provision differs from Article 5.19.1 of the GIA, under which interconnection customers only need to provide "sufficient information regarding such modification so that the other Parties may evaluate the potential impact of such modification prior to commencement of the work" and, under which, such modifications are not subject to "review and acceptance." In the Deficiency Letter, Commission staff asked MISO to explain the difference between these provisions in the Transmission Connection Agreement and GIA.

b. Deficiency Response

51. In response to the Commission's questions regarding Article 8.2 of the Transmission Connection Agreement, MISO states that it believes that the "review and acceptance" requirement in Article 8.2 is a useful safeguard because an external MHVDC transmission line is not subject to MISO's operational control and may have more significant impacts on the MISO transmission system and the host Transmission Owners' transmission facilities, compared to the impacts posed by a single generating facility that is subject to MISO's operational instructions. For this reason, MISO argues that allowing

the parties to reach agreement with respect to modifications or operational changes to the connection facilities in cases where the proposed changes affect the MISO transmission system or the MHVDC transmission line is more important in the Transmission Connection Agreement context. MISO states that under Article 8.2, the scope of review is limited, and a party cannot unreasonably delay or withhold its review and acceptance. MISO asserts that it intends this provision to guard against arbitrary or discriminatory actions by any party. Further, MISO states that the Transmission Connection Agreement is a Commission-jurisdictional agreement and, to the extent any party attempts to veto a proposed modification or operational change or otherwise delay the process, other parties (including MISO) may utilize the dispute resolution provision set forth in Article 18 of the Transmission Connection Agreement or file a complaint with the Commission.[52]

c. Deficiency Response Protest

52. SOO Green claims that Article 8.2 of the Transmission Connection Agreement unreasonably deviates from the GIA by prohibiting modification to connection facilities unless there is 90-days' notice, review, and acceptance of the modification by other parties. SOO Green notes that, by contrast, Article 5.19.1 of the GIA simply establishes the right of a party to make modifications with advance notice.[53] SOO Green contends that MISO's explanation, that this deviation is a useful safeguard because there may be impacts on the transmission system, does not establish a standard for material impacts; SOO Green contends that even a modest or temporary impact could justify a party withholding acceptance. SOO Green states that because MISO has not identified any HVDC connection modification problems, the Transmission Connection Agreement should reflect the provisions in the GIA.[54]

d. MISO Answer to the Deficiency Response Protest

53. Regarding the provision that requires "review and acceptance" before any of the parties can make a modification to the MHVDC project, MISO reiterates that, unlike generating facilities that must follow MISO's instructions, an MHVDC transmission line is an external facility that would not be subject to MISO's control. MISO states that such external transmission facilities could have more significant

[52] Deficiency Response at 6.

[53] Deficiency Response Protest at 17.

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

impacts on the MISO transmission system, which MISO asserts justifies the proposed "review and acceptance" requirement.[55]

e. Commission Determination

54. We find that the modification/operational change provision in Article 8.2 of the Transmission Connection Agreement, which includes the "review and acceptance" requirement, is just and reasonable. We find that because the MHVDC transmission line is potentially outside of MISO's functional control and could have more significant impacts on MISO's system and the relevant MISO Transmission Owner's system, it may require a different approach for modification/operational change than an internal generating facility under MISO's operational control. We further agree with MISO that the phrase "review and acceptance shall not be untimely nor unreasonably withheld or delayed" applies to all the parties and is to protect against arbitrary or discriminatory actions by any party. We therefore disagree with SOO Green's protest and find that MISO's Deficiency Response satisfactorily explains MISO's reasoning for this deviation from the GIA.

6. Necessary Upgrades

a. Filing and Deficiency Letter

55. In the April 20 Filing, MISO proposed a new type of upgrade, "Necessary Upgrades," and a corresponding definition, which reads:

> Necessary Upgrades shall mean the additions, modifications, and upgrades to the facilities owned by Transmission Owner required at or before the point at which the Connection Facilities connect to the Transmission System to accommodate the interconnection of the MHVDC Transmission Line to the Transmission System.[56]

MISO explains that Necessary Upgrades are upgrades that MISO identifies through the study process that occur at or before the point of connection to the MISO system. In the Deficiency Letter, Commission staff asked MISO to clarify what constitutes a Necessary Upgrade and to provide examples.

[55] MISO Answer to the Deficiency Response Protest at 5.

[56] MISO Tariff, Attachment GGG, § 1.

b. Deficiency Response

56. In response to Commission staff's question regarding the definition of Necessary Upgrades, MISO submitted revisions to clarify the definition. Further, MISO states that, upon consideration, it believes that specifically mentioning Necessary Upgrades under the scenario that the MHVDC Connection Customer elects the Injection Rights option is not necessary and could result in confusion. MISO notes that if the MHVDC Connection Customer requests Injection Rights, MISO's study for Injection Rights under the GIP would necessarily involve determining any upgrades that would be required to establish a physical connection between the proposed MHVDC transmission line and the MISO transmission system. MISO states that the network upgrades determined pursuant to the GIP under this scenario would include upgrades that are necessary both to provide Injection Rights and to establish the physical connection, and that to make this clear, MISO proposes to delete as superfluous all references to Necessary Upgrades from Article 5.5 of the Transmission Connection Agreement.[57] MISO states that as a hypothetical example, a Necessary Upgrade could include the replacement of existing circuit breakers with faster circuit breakers that clear the relevant fault condition or adjustments to the existing switchyard design that requires the addition of new bays or switching lines between existing bays to eliminate conditions where multiple elements could be lost under a single fault condition.[58]

57. To resolve any confusion over what constitutes a Necessary Upgrade, MISO further proposes to revise the definition of Necessary Upgrades by changing the word "before" to "beyond," thereby making Necessary Upgrades additions, modifications, and upgrades to the facilities owned by the host Transmission Owner required "at or beyond the point at which Connection Facilities" connect to the MISO transmission system.[59] MISO also clarifies that Necessary Upgrades are upgrades made on the MISO transmission system.[60]

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[57] Deficiency Response at 9-10.

[58] *Id.* n.20.

[59] In whole, the revised definition reads (emphasis added): Necessary Upgrades shall mean the additions, modifications, and upgrades to the facilities owned by Transmission Owner required at or *beyond* the point at which the Connection Facilities connect to the Transmission System to accommodate the interconnection of the MHVDC Transmission Line to the Transmission System.[59]

[60] Deficiency Response at 9-10.

c. Deficiency Response Protest

58. SOO Green claims that the Necessary Upgrades and network upgrades provisions in Articles 5.4 and 5.5 of the *pro forma* Transmission Connection Agreement, respectively, are not identical. SOO Green contends that MISO did not explain why there are multiple options to build network upgrades, but only one option to build Necessary Upgrades, and why there exists a liquidated damages provision for network upgrades, but not Necessary Upgrades. SOO Green asserts that Articles 5.4 and 5.5 should either be more similar or be combined.[61]

d. MISO Answer to the Deficiency Response Protest

59. With respect to the new construct Necessary Upgrades, MISO disagrees with SOO Green's recommendation to consider multiple options to build and liquidated damages provisions for Necessary Upgrades. MISO argues that the upgrades associated with the physical connection option are likely to be minor and do not require elaborate funding options or study provisions.[62]

e. Commission Determination

60. We find that the limited nature of Necessary Upgrades, which are additions, modifications, and upgrades to the facilities owned by the host Transmission Owner required "at or beyond the point at which Connection Facilities" connect to the MISO transmission system, makes it unnecessary to apply the option to build and liquidated damages provisions that are applicable to network upgrades. We agree that because Necessary Upgrades are limited in nature and scope, and do not provide any transmission rights, interconnection rights or injection rights, the option to build and liquidated damages provisions are not needed.

61. In response to MISO's proposed amendment changing the word "before" to "beyond" in the definition of Necessary Upgrade, we are satisfied that this change, along with MISO's example in the Deficiency Response, clarifies the questions surrounding what constitutes a Necessary Upgrade.

7. Studies and Study Procedures

a. Filing and Deficiency Letter

62. MISO's proposal requires a study before MHVDC Connection Customers can obtain transmission connection service for their MHVDC facilities connecting to the

[61] Deficiency Response Protest at 19-20.

[62] MISO Answer to the Deficiency Response at 6.

MISO transmission system. MISO proposes, in its MHVDC Connection Procedures, to a definition of this study, which contains several elements:

> The Study. The study for MHVDC Transmission Connection Service may consist of short circuit/fault duty, steady state (thermal and voltage), stability, short circuit ratio, harmonic impedance scan, sub synchronous torsional interaction, sub synchronous resonance, and control interaction analyses.[63]

63. Although many of the elements of this study are undertaken as part of the interconnection study process under MISO's GIP, MISO proposes additional, non-typical studies as part of the MHVDC study process (harmonic impedance scan, sub synchronous torsional interaction, sub synchronous resonance, and control interaction analyses), which are studies required for HVDC and voltage source converter technology. Subsequent to the initial study, if the MHVDC Connection Customer requests Injection Rights, the MHVDC Connection Customer's Injection Rights request will proceed through the three-phase Definitive Planning Phase (DPP) in MISO's interconnection study process and will be subject to the system impact and facilities studies in the DPP, like other interconnection customers. MISO proposes requiring the MHVDC Connection Customer's Injection Rights request be studied for both ERIS and NRIS evaluations in the DPP.[64]

64. In the Deficiency Letter, Commission staff asked two questions related to the study for MHVDC Connection Customers. First, Commission staff asked MISO to explain why it proposes studying MHVDC Injection Rights requests under both ERIS and NRIS-level standards, when customers of the HVDC line (i.e., upstream generators external to MISO) making use of those Injection Rights may only use E-NRIS. Second, Commission staff asked MISO to explain why the study for MHVDC connection service only "may" (rather than "must") include the elements listed in the Tariff under section 3.2.2 of the MHVDC Connection Procedures (i.e., why MISO retained discretion to perform some, but not all, of the listed study elements).

b. Deficiency Response

65. MISO states that, under its procedures, an ERIS evaluation is a pre-requisite for conducting NRIS studies and obtaining NRIS. MISO states that when it evaluates an E-NRIS unit, it necessarily conducts an ERIS evaluation of that unit before determining its deliverability. MISO states that, similar to E-NRIS requests, Injection Rights requests

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[63] MISO Tariff, Attachment GGG, § 1.

[64] "Requests for Injection Rights shall include both ERIS-level and NRIS-level evaluations." *Id.* § 3.2.3.3.

will first be studied for reliability impacts (i.e., ERIS evaluation) and then for deliverability (i.e., NRIS evaluation). MISO states that this is done as a single Injection Rights evaluation that does not contemplate duplicative ERIS studies, and that because Injection Rights ultimately will be used by external generators with E-NRIS, the same types of studies will be used for both Injection Rights requests and E-NRIS requests to ensure comparability. MISO states that although it may perform some individual ERIS-level studies as part of the MHVDC Connection Customer's physical connection evaluation under section 3.2.2 of the MHVDC Connection Procedures, those ERIS studies will have a different scope than the ERIS study performed as part of the study of an Injection Rights request. Accordingly, MISO asserts that the ERIS-level studies performed to evaluate an MHVDC connection request would not be duplicative of ERIS-level studies performed to evaluate an Injection Rights request.[65]

66. Finally, with regard to Commission staff's question regarding why MISO retained discretion to perform some, but not all, of the study elements listed in section 3.2.2 of the MHVDC Connection Procedures, MISO states that section 3.2.2 describes the study required solely to effectuate a physical connection between the proposed MHVDC transmission line and the MISO transmission system (i.e., without the Injection Rights option selected). MISO states that such a study may vary from transmission system to transmission system and does not need to include each of the elements listed in section 3.2.2 in light of its limited purpose, i.e., solely establishing a physical connection. MISO notes, however, that proposed section 3.2.2 provides that "[a]dditional studies are required for MHVDC Transmission Connection Requests that request Injection Rights pursuant to Section 3.2.3 of [the MHVDC Connection Procedures]." MISO further notes that section 3.2.3.3 provides that study of an Injection Rights request will follow the study procedures in the GIP and will be subject to the requirements set forth in the GIP.

c. Deficiency Response Protest

67. SOO Green claims that section 3.2.2 of the proposed MHVDC Connection Procedures is too vague and seeks further clarification of the study process for an MHVDC connection request. SOO Green states that MISO should clarify why certain study elements may or may not be studied and should provide assurance that the overall study will be limited to the study elements listed in section 3.2.2.[66]

[65] Deficiency Response at 11.

[66] Deficiency Response Protest at 21.

d. MISO Answer to the Deficiency Response Protest

68. MISO responds that due to varying technical requirements and circumstances involved in each specific transmission-to-transmission connection case, it is impractical to provide the specificity that SOO Green seeks. MISO offers that, where feasible, different study scenarios can be addressed in MISO's Business Practice Manuals. MISO further states that it does not believe that any additional studies beyond what are listed in section 3.2.2 would be needed to effectuate a physical connection between an MHVDC transmission line and the MISO transmission system.[67]

e. Commission Determination

69. We find that MISO's proposal to require both ERIS and NRIS-level studies for evaluating MHVDC Connection Customers' Injection Rights requests is just and reasonable and not unduly discriminatory or preferential, given MISO's representation that the ERIS-level studies conducted to evaluate MHVDC connection requests and Injection Rights requests are not duplicative. We also find that MISO has adequately justified why it requires some flexibility regarding the study elements required to evaluate a MHVDC connection request. As MISO explains in its Deficiency Response, the study required to connect MHVDC facilities may vary from project to project. We find that allowing MISO to tailor the study to the specific request will eliminate unnecessary processing time because there will be no need for additional studies.

8. Timelines

a. Filing and Deficiency Letter

70. MISO's proposed study timelines in the MHVDC Connection Procedures generally match the timelines in the GIP, with some differences. For example, section 5.1.1 of the proposed MHVDC Connection Procedures affords the MHVDC Connection Customer and host Transmission Owner 30 days to provide comments on the facilities study report, whereas section 7.3.3.5 of the GIP only permits 15 days. Additionally, when a restudy is necessary, section 5.3 of the MHVDC Connection Procedures allows the MHVDC Connection Customer 10 days to notify the transmission provider if it wants to proceed, whereas section 7.5 of the GIP only permits five days for such notification. Further, section 5.3 of the MHVDC Connection Procedures provides the transmission provider 90 days to complete a restudy, whereas section 7.5 of the GIP only provides for 60 days.

[67] MISO Answer to the Deficiency Response at 8.

71. The MHVDC Connection Procedures and GIP diverge most with regard to time frames associated with the negotiation period before execution, or the request to file unexecuted, a Transmission Connection Agreement or GIA. Proposed section 7.2 in the MHVDC Connection Procedures provides that the transmission provider, host Transmission Owner, and MHVDC Connection Customer have 90 days to negotiate disputed provisions in the draft Transmission Connection Agreement, as opposed to the 60-day period permitted in section 11.2 of the GIP for negotiating provisions in the draft GIA. However, section 7.2 provides that if an MHVDC Connection Customer requests termination of negotiations, it has 30 days (compared to 60 days in the GIP) to request the filing of an unexecuted Transmission Connection Agreement with the Commission before its connection request is withdrawn. Similarly, if an MHVDC Connection Customer does not execute a Transmission Connection Agreement or request the filing of an unexecuted Transmission Connection Agreement within 30 days of tender of the draft Transmission Connection Agreement, its request will be withdrawn; the GIP allows for 60 days.[68]

72. In the Deficiency Letter, Commission staff asked MISO to explain why it proposes that various steps in the MHVDC connection study process be completed under different time frames than analogous steps in the generator interconnection study process.

b. Deficiency Response

73. In response to questions regarding different time frames used in the MHVDC connection and generator interconnection study processes, MISO proposes revisions to its proposal to align various time frames in the MHVDC Connection Procedures with corresponding time frames in the GIP.[69]

c. Deficiency Response Protest

74. SOO Green contends that the reduced time frames proposed by MISO to mirror time frames in the GIP are not realistic. SOO Green notes that MISO recognizes that

[68] In the Deficiency Letter, Commission staff noted that section 7.2 of the MHVDC Connection Procedures, as proposed in the April 20, 2018 filing, contained the phrase "thirty (60) Calendar Days" to describe the time allowed for an MHVDC Connection Customer to execute or request the filing of an unexecuted Transmission Connection Agreement. *See* MISO Tariff, Attachment GGG, § 7.2. The Commission interprets the intended time frame to be 30 calendar days.

[69] Deficiency Response at 7-9.

procedures connecting MHVDC facilities cannot be identical to the GIP.[70] SOO Green contends that MHVDC projects are significantly more expensive and complex than Alternating Current (AC) generation projects, and SOO Green requests that, at a minimum, the original time frames proposed by MISO should be restored.[71]

d. Commission Determination

75. We find that the proposed time frames in the MHVDC Connection Procedures, as amended by MISO in its Deficiency Response, are just, reasonable, and not unduly discriminatory or preferential. The Commission has previously found the time frames articulated in the MISO GIP to be just and reasonable, and we find that these time frames for providing information, conducting studies, negotiating details, and making decisions throughout the study process serve as a reasonable basis for establishing comparable time frames in the MHVDC Connection Procedures. Further, we find that, even though MHVDC projects may be more complex than generating facilities, there is value in aligning the time frames in each process to provide clarity in the interconnection process.

9. Other Issues Raised by SOO Green

a. Filing Protest

76. SOO Green, which is currently developing a 2,100 MW MHVDC line linking MISO and PJM Interconnection, L.L.C. (PJM) (SOO Green Project), claims that MISO's proposal does not account for the various benefits of the SOO Green Project's voltage source converter technology.[72] SOO Green states that MHVDC projects with voltage source converter technology provide ancillary services, similar to batteries or stored energy resources, and should be compensated for such services.[73] SOO Green claims that such MHVDC projects provide bi-directional exact power flow, enhanced AC system stability, reactive power control, frequency control, and emergency power functions.[74] SOO Green claims that participation of storage in the markets is justification for MISO to change its market rules to accommodate voltage source converter technology. SOO

[70] Deficiency Response Protest at 18 (citing Deficiency Response at 3).

[71] *Id*. at 19.

[72] Filing Protest at 2.

[73] *Id.* at 7 (citing *Indianapolis Power & Light Co. v. Midcontinent Indep. Sys. Operator, Inc.*, 158 FERC ¶ 61,107 (2017) (*Indianapolis Power*)).

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

Green asserts that MHVDC projects with voltage source convertor technology, like stored energy resources, will be able to increase transmission capability on the MISO system and that MISO should consider how such MHVDC projects can be optimally dispatched.[75]

77. SOO Green states that the SOO Green Project will link the MISO and PJM AC transmission systems and be used for arbitrage transactions to the benefit of MISO load, and SOO Green asserts that MISO should consider how to compensate MHVDC projects for such benefits. SOO Green claims that MHVDC projects that connect MISO generation resources to external markets could reduce congestion, and in those circumstances, SOO Green asserts that MISO should consider the role of the MHVDC project developer in the allocation of financial transmission rights.[76] SOO Green requests that the Commission require MISO to institute further stakeholder processes to address these issues in a compliance filing.[77]

78. SOO Green states that the issue of whether MISO can assess Multi-Value Project Usage Rate charges on MHVDC transmission line exports to PJM is currently pending before the Commission in Docket No. ER10-1791-004. SOO Green asserts that if MISO is permitted to assess Multi-Value Project Usage Rate charges on exports to PJM, MISO's proposal requires clarification on how MISO will determines Multi-Value Project Usage Rate charges for MHVDC transmission lines. Specifically, SOO Green states that it is unclear what level of Multi-Value Project Usage Rate charges, if any, MISO would charge for MHVDC transmission lines that do not have MISO transmission service for the full line capacity to the MHVDC terminal in MISO.[78] SOO Green requests that if such charges are allowed, then any assessed Multi-Value Project Usage Rate charges be limited to the confirmed transmission transactions of SOO Green's customers.[79]

b. MISO Answer

79. MISO states that it appreciates SOO Green's concerns and that some of the issues raised could merit stakeholder discussions. However, MISO argues that SOO Green's

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[75] *Id*. at 8.

[76] *Id.*

[77] *Id*. at 9.

[78] *Id*. at 12-13.

[79] *Id*. at 14.

arguments regarding the potential future benefits of its proposed MHVDC transmission line are outside the scope of this proceeding. MISO states that this filing was not designed to change rules for participation in MISO's markets or add any market services to the MISO market construct. MISO states that to the extent any MHVDC developer desires to participate in MISO's markets, it is free to become a market participant under the existing rules.[80]

80. MISO answers that SOO Green's arguments that MISO should not be allowed to impose the Schedule 26A Multi-Value Project Usage Rate on exports that utilize an MHVDC transmission line to sink in MISO should be summarily rejected as a collateral attack on the Commission's order on remand in Docket No. ER10-1791-003.[81] MISO states that its filing is fully consistent with the Remand Order.

c. SOO Green Answer

81. SOO Green argues that MISO's proposal to charge all MHVDC projects for voltage support service under Schedule 2 of the MISO Tariff (Reactive Supply and Voltage Control from Other Sources Service), which it claims is not needed for HVDC lines, prevents market participants from providing all services that they are technically capable of providing and results in unjust and unreasonable rates.[82]

d. Deficiency Response Protest[83]

82. SOO Green claims that it is unclear what charges MISO will assess to MHVDC transactions and in what markets an MHVDC project can participate. Therefore, SOO Green requests that the Commission require MISO to submit, within 90 days of an order accepting MISO's MHVDC Connection Procedures, revised Tariff provisions that ensure MHVDC project transactions do not pay for unneeded services that can be self-supplied and that enable MHVDC projects to participate in all MISO capacity, energy, and ancillary service markets in which they are capable of participating.[84] SOO Green

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[80] MISO Answer at 7.

[81] *Midwest Indep. Transmission Sys. Operator, Inc.*, 156 FERC ¶ 61,034 (2016) (Remand Order).

[82] SOO Green Answer at 4.

[83] These issues were not discussed in the Deficiency Letter or Deficiency Response.

[84] Deficiency Response Protest at 3.

explains that pursuant to MISO's Tariff, service under Schedule 2 must be provided for each transaction on MISO's transmission system. However, SOO Green notes that the SOO Green Project does not require reactive power service under Schedule 2 because the project's voltage source converter technology allows it to self-supply the service. Additionally, SOO Green claims that its project is capable of providing reactive service pursuant to Schedule 2 to others but that MISO's Tariff does not permit it to do so. SOO Green contends that MISO's Tariff does not define "Generation or Other Sources Service" or "Other Sources," and does not provide how "Other Sources" qualify to provide reactive service pursuant to Schedule 2.[85] SOO Green requests that the Commission require MISO to resolve this problem in a manner similar to what the Commission required of MISO regarding electric storage resource participation in energy markets.[86]

83. SOO Green claims that it is unclear how MISO's proposal will allow customers of the MHVDC transmission line to obtain transmission service and participate in MISO's markets. SOO Green also states that MISO's proposal would result in trade barriers between MISO and other RTOs by blocking imports into MISO and imposing costs and transmission upgrades that discourage inter-RTO trade.[87] SOO Green requests that the Commission require MISO to make numerous revisions to its proposal.

84. SOO Green states that section 2.3 of the proposed MHVDC Connection Procedures serves to notify MHVDC projects that MISO intends to impose export fees on all withdrawal transactions involving an MHVDC project.[88] SOO Green also states that MISO does not define "withdrawal transactions" and how they can be associated with an MHVDC project, nor does MISO specify the applicable charges.[89] As an example, SOO Green explains that its project would export energy to PJM and that MISO would charge a Multi-Value Project Usage Rate pursuant to Schedule 26A in MISO's Tariff.[90] SOO Green requests that the Commission clarify whether or not MISO's export

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[85] *Id*. at 13.

[86] *Id*. (citing *Indianapolis Power*, 158 FERC ¶ 61,107 at P 69).

[87] *Id.* at 2.

[88] *Id.* at 10 (citing MISO Tariff, Attachment GGG, § 2.3 ("All withdrawal transactions from the Transmission System that are associated with any MHVDC Transmission Line shall be subject to all applicable MISO rates and Tariff schedules.")).

[89] *Id.* at 11.

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

fees on MHVDC exports to PJM would violate the MISO-PJM Joint Operating Agreement. SOO Green also requests that the Commission ensure that section 2.3 of the proposed MHVDC Connection Procedures treats MHVDC transactions similarly to all other withdrawal transactions.[91]

85. SOO Green states that MISO should explain to what extent an MHVDC connection allows participation of external asynchronous resources in MISO markets and permits spot market transactions without point-to-point transmission service.[92] SOO Green claims that MISO's filing and Deficiency Response do not fully explain "whether a bidirectional, dispatchable MHVDC project connecting MISO and PJM will allow participants to submit price sensitive bids and offers in the MISO markets." Additionally, SOO Green states that it is unclear to what extent spot market transactions are available and whether MISO would impose border tolls on such transactions consistent with section 2.3 of the proposed MHVDC Connection Procedures.[93]

e. MISO Answer to the Deficiency Response Protest

86. In response to SOO Green's request to exempt MHVDC projects from any Schedule 2 charges and Schedule 26-A (Multi Value Project Usage Rate) charges that would apply to withdrawal transactions exiting the MISO transmission system, MISO states that it addressed most of these arguments in its May 30 Answer. MISO reiterates that there is no basis for the exemptions sought by SOO Green and that the Commission should reject these arguments as unduly discriminatory and beyond the scope of the current proceeding.[94]

87. MISO argues that SOO Green's external asynchronous resource and spot market arguments are premature and beyond the scope of the MHVDC filing. MISO states that at this time, it is premature to determine if spot imports are the most appropriate model for MHVDC import transactions. MISO further states that it imposes no "border tolls" and that MHVDC transactions will be treated as all other import and export transactions, as set forth in the MISO Tariff.[95]

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[91] *Id.* at 3, 10, 14.

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

[93] *Id*. at 25.

[94] MISO Answer to the Deficiency Response Protest at 9.

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

f. Commission Determination

88. We find that these matters are outside the scope of this section 205 proceeding. MISO has not proposed Tariff revisions to enable MHVDC projects to provide ancillary services or to exempt them from certain charges, and we do not find such provisions are necessary to accomplish the goal of MISO's proposal – to include in its Tariff procedures for connecting MHVDC projects to the MISO transmission system. MISO's proposal also does not address transmission service between MISO and PJM and is meant to provide a method for MHVDC projects to connect to the MISO transmission system. We note that MISO's Multi-Value Project Usage Rate is the subject of a different proceeding.[96] Finally, we find that with regard to the market participation concerns raised by SOO Green. MISO's proposal is not intended to address market participation but instead establishes a method for MHVDC projects to connect to MISO's transmission system, and any additional proposals regarding participation in MISO's markets are beyond the scope of this proceeding. As such, we decline SOO Green's request for the Commission to require MISO to submit further Tariff revisions.

The Commission orders:

MISO's proposed Tariff revisions are hereby accepted, to be effective July 19, 2018, as requested, as discussed in the body of this order.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

[96] On September 20, 2018, the Commission issued an order denying requests for rehearing and granting requests for clarification with regard to MISO's Multi-Value Project Usage Rate. *Midwest Indep. Transmission Sys. Operator, Inc.*, 164 FERC ¶ 61,191 (2018).