

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Managing Transmission Line Ratings) Docket No. RM20-16-000

**COMMENTS OF
SOUTHWEST POWER POOL INC.**

Southwest Power Pool, Inc. (“SPP”) respectfully submits the following comments in response to the Federal Energy Regulatory Commission’s (“Commission”) Notice of Proposed Rulemaking issued on November 19, 2020, proposing to reform both the *pro forma* Open Access Transmission Tariff and the Commission’s regulations under the Federal Power Act (“FPA”) to improve the accuracy and transparency of transmission line ratings.¹

I. Introduction

The Commission pointed out in its NOPR that transmission line ratings represent the maximum transfer capability of each transmission line, and transmission line ratings and the rules by which they are established are practices that directly affect the cost of wholesale energy, capacity and ancillary services, as well as the cost of delivering wholesale energy to transmission customers.² The Commission also stated that inaccurate transmission line ratings may result in Commission-jurisdictional rates that are unjust and

¹ *Managing Transmission Line Ratings*, 173 FERC ¶ 61,165 (2020) (“NOPR”).

² NOPR at P 1.

unreasonable.³ Specifically, the Commission stated that the current use of seasonal and static assumptions result in transmission line ratings that do not accurately represent the transfer capability of the transmission system.⁴

To address the Commission-determined limitation for the use of seasonal and static assumptions, the Commission in the NOPR proposed two requirements for greater use of ambient-adjusted line ratings (“AARs”), which are transmission line ratings that incorporate near-term forecasted ambient air temperatures.⁵ First, the Commission proposed to require that transmission providers use AARs as the basis for evaluation of transmission service requests that will end within ten days of the request.⁶ Second, the Commission proposed to require that transmission providers use AARs as the basis for determination of the necessity of certain curtailment, interruption, or redispatch of transmission service that is anticipated to occur within those ten days.⁷

To address the issues with respect to longer-term requests for transmission service, the Commission proposed in the NOPR to require that transmission providers use seasonal line ratings as the basis for evaluation of such requests.⁸ The Commission also proposed to require that transmission providers use seasonal line ratings as the basis for the

³ *Id.*

⁴ *Id.* at P 2.

⁵ *Id.* at P 3.

⁶ *Id.*

⁷ NOPR at P 3.

⁸ *Id.* at P 4.

determination of the necessity of curtailment, interruption, or redispatch that is anticipated to occur more than ten days in the future.⁹

The Commission stated that in certain situations, use of dynamic line ratings (“DLRs”) presents opportunities for transmission line ratings that may be more accurate than those established with AARs.¹⁰ The Commission stated that there may be limited deployment of DLRs by transmission owners since Regional Transmission Organizations (“RTO”) and Independent System Operators (“ISO”) may not be able to automatically incorporate frequently updated transmission line ratings such as DLRs into their operating and market models. To that end, the Commission proposed in the NOPR to require RTOs/ISOs to establish and implement the systems and procedures necessary to allow transmission owners to electronically update transmission line ratings on at least an hourly basis.¹¹

The Commission made clear that the noted reforms above are intended to improve the accuracy of the transmission line ratings used during normal (pre-contingency) operations. The Commission requested comment on whether to require transmission providers to implement unique emergency ratings that would be used during post-contingency operations.¹²

Lastly, the Commission proposed to require transmission owners to share transmission line ratings and methodologies with their transmission provider(s) and, in

⁹ *Id.*

¹⁰ *Id.* at P 5.

¹¹ *Id.*

¹² NOPR at P 6.

regions served by an RTO/ISO, also with the market monitor(s) of that RTO/ISO.¹³ The Commission also sought comment on whether transmission line ratings and transmission line rating methodologies should be shared with other transmission providers, upon request.¹⁴

SPP appreciates the opportunity the Commission has provided in this proceeding to share comments relating to reforms outlined in the NOPR. SPP's comments address the proposed reforms to transmission line ratings and also addresses other specific comments requested by the Commission in the NOPR.

II. Comments

- (a) The Commission proposes the two requirements for use of AARs related to shorter-term transmission service.**
 - (i) Require the use of AARs as the basis for evaluation of transmission service requests that will end within ten days of the request.**

The use of AARs for evaluation of transmission service requests that end within ten days would have impacts on how SPP currently evaluates available transfer capability (“ATC”)¹⁵ and available flowgate capability (“AFC”)¹⁶ for hourly, daily, weekly, and monthly transmission service requests. SPP calculates the values for ATC and AFC for

¹³ *Id.* at 7.

¹⁴ *Id.*

¹⁵ Attachment C, Section 1.2.2 of the SPP Open Access Transmission Tariff defines ATC as “A measure of the transfer capability remaining in the physical transmission network for further commercial activity over and above already committed uses.” Southwest Power Pool, Inc., Open Access Transmission Tariff, Sixth Revised Volume No. 1 (“SPP Tariff”) at Attachment C, Section 1.2.2.

¹⁶ Attachment C, Section 1.2.1 of the SPP Tariff defines AFC as “A measure of the flow capability remaining on a Flowgate for further commercial activity over and above already committed uses.” SPP Tariff at Attachment C, Section 1.2.1.

hourly, daily, weekly, and monthly transmission service requests for the following periods and frequencies: (1) values that fall within the operating horizon for at least the next 48 hours are calculated at least once per hour; (2) values that fall within the planning horizon for at least the next 31 calendar days are calculated at least once per day (3) values that fall within the study horizon for at least the next 12 months (months 2-13) are calculated at least once per week.¹⁷ Transmission models used for AFC calculations are updated for the following periods and frequency: (1) Operating Horizon, including all hours of the current day (Day 1), and after 10:00 a.m., all hours of the next day (Day 2), which is updated at least once per day; (2) Planning Horizon, which extends from the end of the Operating Horizon through the thirty-first day (Day 31) and is updated at least once per day; and (3) Study Horizon, which extends from the end of the Planning Horizon through the twelfth month (month 12) and is updated at least once per month.¹⁸

The use of AARs for evaluation of transmission service requests that end within ten days will require SPP to align its Operating Horizon (currently updated at least once per day) and Planning Horizon (currently updated at least once per day). Aside from the initial investments to upgrade SPP's Open Access Same-Time Information System ("OASIS"), Energy Management System ("EMS"), and other ratings databases, the realignment of SPP's Planning Horizon to accommodate the use of AARs for evaluation of transmission service requests that end within ten days would require upgrades to internal and external processes needed to account for the AARs possibly changing every hour or every day. Specifically, SPP would be required to upgrade the ATC/AFC calculation tools,

¹⁷ SPP Tariff at Attachment C, Section 3.2.

¹⁸ SPP Tariff at Attachment C, Section 3.3.

Market Operator Interface, OATI NNL Impact Calculator, and SPP's transmission line rating validation system.

Additionally, SPP currently receives only individual transmission line ratings from its Transmission Owners, once, for each season. SPP does not currently have processes or systems in place to receive and validate hourly rating profiles provided by its Transmission Operators for a ten-day horizon (i.e. 240 hourly intervals). With this proposed requirement, Transmission Owners, if providing hourly transmission rating values, would be required to have staffing and infrastructure, such as communication equipment, validation systems, and data storage, in place to provide SPP with continual, ten-day, hourly updated transmission rating values for all of its transmission lines, and SPP would be required to update its systems and processes to validate and approve these ratings for each updated interval.

- (ii) Require the use of AARs as a basis for determination of the necessity of certain curtailment, interruption, or redispatch of transmission service that is anticipated to occur within those ten days.**

Similar to SPP's comment in Section II(a)(i) above, requiring the use of AARs as a basis for determination of curtailment, interruption, or redispatch of transmission service that is anticipated to occur within those ten days would require updates to a number of internal and external processes needed to account for the AARs potentially changing every hour or every day. Because this requirement to implement AARs for curtailment, interruptions, or redispatch will affect SPP's security-constrained economic dispatch ("SCED") and security-constrained unit commitment ("SCUC") models, SPP will require additional updates to its market systems to maintain consistency in SPP's Transmission

Congestion Rights Market, Reliability Unit Commitment process, Day-Ahead Market, and Real-Time Balancing Market for each transmission line rating change.

- (b) **The Commission proposes the requirement to use seasonal line ratings as the basis for evaluation of longer-term transmission service requests and as the basis for the determination of the necessity of curtailment, interruption, or redispatch that is anticipated to occur more than ten days in the future. Additionally, the Commission also proposes to limit the duration of a season to only three months.**

SPP considers any transmission service request for a term of one-year or less as a short-term transmission service request, and these short-term requests are all evaluated using operational study processes (i.e. AFC and ATC). Any transmission service request for a term longer than one-year in duration is considered by SPP as a long-term transmission service request and are evaluated using SPP's planning models. The Commission's proposed requirement to use seasonal line ratings as the basis for evaluation of service requests and as the basis for the determination of the necessity of curtailment, interruption, or redispatch that is anticipated to occur more than ten days in the future implicates how SPP evaluates short-term transmission service requests (i.e. one year or less) and long-term transmission service requests (more than one year).

SPP requests the Commission clarify whether the NOPR is intended to apply to transmission service requests longer than one year in duration. If the NOPR is intended to apply to transmission service requests longer than one year in duration, SPP believes the use of AARs may be especially problematic to incorporate into long-term planning processes that are typically attempting to project likely system conditions one to ten years or longer into the future. The variable and potentially frequent changes to facility ratings inherent in the application of AARs would simply be incompatible with such long-range, forward-looking study horizons. Additionally, the data exchange and coordination

requirements to incorporate AARs into longer-term planning horizons would be significantly complex. For these reasons, SPP recommends the Commission clarify that the NOPR applies to only transmission service requests with a duration of less than one year.

There currently is no universal definition of the seasons used in seasonal line ratings among RTOs, ISOs, or Transmission Operators. Each RTO, ISO, and Transmission Operator has its own definition of seasons used in transmission line ratings based on its transmission system. Although the Commission proposes to limit the duration of a season to three months for seasonal line ratings, this would change how SPP currently uses seasons in evaluation of long-term and short-term transmission service requests. SPP's stakeholders have established summer and winter peak seasons each spanning four calendar months. The summer peak season spans May through August and the winter peak season spans December through March. These time periods were established in order to encompass the range of peak conditions that may be experienced by SPP facility owners and stakeholders whose facilities span across SPP's large geographic footprint, which extends from the Canadian border in the north to southeastern New Mexico in the south. SPP would urge the Commission to permit Transmission Providers to determine seasonal periods that are most appropriate for their individual situations.

- (c) **The Commission proposes to require RTOs/ISOs to establish and implement the systems and procedures necessary to allow transmission owners to electronically update transmission line ratings on at least an hourly basis.**

As part of SPP's operational processes, SPP currently has the systems and procedures necessary to allow Transmission Owners to electronically update transmission line ratings on at least an hourly basis. Although SPP is able to receive electronically

updated transmission line ratings on at least an hourly basis, SPP has concerns with the frequency with how electronically updated transmission line ratings will be implemented into SPP's current systems and processes. SPP currently receives only individual transmission line rating from its Transmission Owners, once, for each season. SPP does not have systems in place to receive and validate hourly transmission rating profiles provided by its Transmission Operators for a ten-day horizon. With this proposed requirement, Transmission Owners, if providing hourly transmission rating values, would be required to have staffing and infrastructure, such as communication equipment, validation system, and data storage, in place to provide SPP with continual, ten-day, hourly updated transmission rating values for all its transmission lines, and SPP would be required to update its systems and processes to validate and approve these ratings for each updated interval.

Updates of transmission line ratings used in planning models are accomplished primarily through the annual submission of updates pursuant to the planning model development process. Facility owners can update ratings at other times and those updates will be taken into consideration in the process of completing SPP's planning studies. As stated previously, it is not clear from the NOPR whether the Commission is proposing to require hourly updates be accepted into the planning process or only into the operational processes. Acceptance of frequent line rating changes in the planning process has the potential to disrupt these processes which can take weeks and months to complete and lead to confusion and potentially lengthy and costly re-studies.

(d) The Commission proposes an implementation timeline for use of AARs related to shorter-term transmission and of seasonal ratings for longer-term transmission service.

The Commission proposes “to require that AARs and seasonal line ratings be implemented on historically congested lines within one year from the date of the compliance filing for implementation of any final rule, and on all other lines within two years from the date of the compliance filing for implementation of any final rule.”¹⁹ Because of the numerous interrelated systems and processes that need to be upgraded by proposed requirements of this NOPR, SPP requests that the Commission allow for at least a two-year implementation period to comply with the specific requirement for use of AARs and seasonal line ratings.

(e) The Commission requests comment on whether to require transmission providers to implement unique emergency ratings that would be used during post contingency operations.

SPP does not have any specific comment on whether the Commission should require transmission providers to implement unique emergency ratings that would be used during post contingency operations. As part of SPP’s operational processes, SPP currently has the capability to accept from its Transmission Owners unique emergency line ratings that are different from normal ratings, and SPP will continue to use the emergency ratings it receives from its Transmission Owners for post contingency operations.

As part of SPP’s planning process and explained in Section II(j) below, SPP currently requires that owners of transmission facilities develop and provide to SPP both normal and emergency ratings for development of planning models used to evaluate

¹⁹ NOPR at P 92.

requests for transmission and interconnection service as well as for long-term reliability and economic planning.

- (f) **The Commission requests comment on whether to require transmission owners to share transmission line ratings and methodologies with their transmission provider(s) and, in regions served by an RTO/ISO, also with the market monitor(s) of that RTO/ISO. The NOPR also requests comment on whether transmission line ratings and transmission line rating methodologies should be shared with other transmission providers, upon request.**

SPP does not have any specific comment on whether the Commission should require transmission owners to share transmission line ratings and methodologies with their transmission provider(s) and, in regions served by an RTO/ISO, also with the market monitor(s) of that RTO/ISO. Neither does SPP have any specific comment on whether the Commission should require transmission line ratings and transmission line rating methodologies to be shared with other transmission providers, upon request.

SPP's Transmission Owners' share with SPP their respective transmission line ratings, but not their line rating methodology. SPP shares seasonal line ratings with stakeholders, upon request, through the provision of planning models, subject to execution of applicable non-disclosure agreements. SPP's rating methodologies are public information in the SPP Planning Criteria.

- (g) **The Commission requests comments on whether not using unique emergency ratings similarly may not be just and reasonable.**

SPP does not have any specific comment on whether not using unique emergency ratings is unjust and unreasonable. This should be determined based on the facts of a given situation.

- (h) The Commission requests comments on whether to require transmission providers to implement DLRs across their systems or on certain transmission lines that have the most to benefit from a dynamic rating.**

As pointed out by the Commission in the NOPR,²⁰ DLRs implemented across SPP's Transmission System would require additional data and communication systems that would increase implementation costs and system complexity. SPP recently drafted a white paper that examined the costs and benefits of DLRs.²¹ The implementation of DLRs may result in Transmission Owners incurring additional costs that might outweigh the benefits. Dependent upon which type of DLR is pursued will influence the additional cost for Transmission Owners. If a DLR requires an EMS upgrade to be capable of handling dynamic ratings, that could lead to cost up to \$1 million dollars for Transmission Owners. However, if no EMS upgrade is required, the need for additional SCADA analogs would increase among Transmission Owners. This would allow for dynamic ratings to be submitted to the Reliability Coordinator's EMS. This type of DLR implementation can range from \$100,000 - \$500,000, annually, for Transmission Owners. However, if more complex DLR implementation is pursued, the costs associated can vary due to the complexity and resources required to implement an upgrade of DLR equipment, including real-time line monitoring devices, on site communication networks, and forecasting software.

²⁰ See NOPR at 27.

²¹ See Markets and Operations Policy Committee Agenda and Materials, dated January 11, 2021 (file name 02e – HITTM4_Dynamic Line Ratings_White Paper.pdf) posted at: <https://spp.org/spp-documents-filings/?id=250232>.

- (i) **The Commission requests comments on whether additional costs, if any, needed to comply with this proposed requirement would allow RTOs/ISOs also be able to accommodate frequently updated transmission line ratings from transmission owners.**

As part of SPP's operational processes, SPP currently has the capability to accept frequently updated transmission line ratings from its Transmission Owners. However, SPP has concerns with how these frequently updated transmission line ratings will be implemented into SPP's current systems and processes. As stated previously, SPP currently receives only individual transmission line rating from its Transmission Owners, once, for each season. SPP does not have systems in place to receive and validate hourly transmission rating profiles provided by its Transmission Operators for a ten-day horizon. With this proposed requirement, Transmission Owners, if providing hourly transmission rating values, would be required to have staffing and infrastructure, such as communication equipment, a validation system, and data storage, in place to provide SPP with continual, ten-day, hourly updated transmission rating values for all its transmission lines, and SPP would be required to update its systems and processes to validate and approve these ratings for each updated interval.

- (j) **The Commission requests comment on the degree to which other transmission providers use or are provided with unique emergency ratings and the emergency rating durations that are commonly used.**

As part of SPP's operational processes, a Transmission Owners provide SPP with both emergency ratings and normal ratings for their transmission facilities. Since SPP is not provided with line rating methodologies used by its Transmission Owners, SPP is not able to discern whether the emergency line rating provided is unique or is just simply the same as the normal rating used for their transmission facilities. Therefore, SPP is not able to comment on the degree to which SPP uses or is provided with unique emergency ratings.

SPP assumes an emergency rating is good for 30 minutes, unless otherwise notified by the Transmission Owner.

For planning purposes, SPP requires that owners of transmission facilities develop and provide to SPP both normal and emergency ratings.²² SPP further requires that each submitter of data used in the development of SPP’s planning models must submit both normal and emergency ratings for each seasonal model.²³ Data submitted by facility owners is also subject to data validation requirements pursuant to rules established by the Eastern Interconnection Reliability Assessment Group (“ERAG”). These rules state that for the rating of transformers and lines, the emergency rating must be no less than the normal rating, and that the emergency rating must be no more than three times the normal rating.²⁴ North American Electric Reliability Corporation (“NERC”) Reliability Standard FAC-008 (“FAC-008”) requires each facility owner to develop a ratings methodology and follow it. SPP Planning Criteria does not require that owners of facilities under its functional control follow any specific rating methodology in complying with FAC-008. SPP Planning Criteria does not require a specific duration for emergency ratings used in the planning process, but defers to each facility owner’s FAC-008 rating methodology for normal and emergency ratings. However, the SPP Planning Criteria does require that, for overhead conductors, the daily load cycle for operating at the emergency rating should not exceed 4

²² SPP Planning Criteria at Section 7.2. The SPP Planning Criteria is posted at: <https://spp.org/spp-documents-filings/?id=18162>.

²³ SPP Model Development Procedure Manual 2020 at Section 3. The manual is posted at: <https://spp.org/spp-documents-filings/?id=18607>.

²⁴ ERAG Multiregional Modeling Working Group Procedural Manual at Section 8.3. The manual is posted at: <https://rfirst.org/ProgramAreas/ESP/ERAG/MMWG/Pages/MMWG.aspx>.

hours.²⁵ SPP's planning processes consistently use the normal rating to assess transmission system performance under system-intact conditions and use the emergency rating under contingency conditions.

- (k) The Commission requests comment on whether to require RTOs/ISOs to conduct a one-time study of the cost effectiveness of DLR implementation, and if so, what details/format any such study should include.**

SPP recently drafted a whitepaper that examined the costs and benefits of DLRs.²⁶

- (l) The Commission requests comment on whether there may be tradeoffs in requiring transmission owners to implement unique emergency ratings and therefore seeks comment on the costs and benefits of such a requirement.**

SPP has no specific comment on whether there may be tradeoffs in requiring transmission owners to implement unique emergency ratings.

- (m) The Commission requests comments on whether to require transmission owners to share upon request their transmission line ratings and rating methodologies with transmission providers other than the transmission owner's own transmission providers. The Commission requests comments on whether to require transmission owners to make their transmission line ratings and rating methodologies available to other interested stakeholders, including posting information on their OASIS pages or other password protected online forum.**

SPP has no specific comment on whether it should require transmission owners to make their transmission line ratings and rating methodologies available to other interested

²⁵ SPP Planning Criteria at Section 7.2.2.7.

²⁶ See Markets and Operations Policy Committee Agenda and Materials, dated January 11, 2021 (file name 02e – HITTM4_Dynamic Line Ratings_White Paper.pdf) posted at: <https://spp.org/spp-documents-filings/?id=250232>.

stakeholders, but those entities that have a reliability-based need for that type of information would benefit from this information sharing.

- (n) **The Commission requests comment whether 60 days is sufficient time for public utility transmission providers to develop new tariff language in response to the final rule.**

As the Commission is aware, SPP has a robust stakeholder process to approve any changes to the SPP Tariff. For all of the proposed changes in the NOPR, 60 days would be insufficient for SPP to complete its stakeholder process to review proposed tariff language. Depending on the changes that would be required by the final rule, the SPP stakeholder process will take at minimum three months for approval from its Board of Directors.

III. Conclusion

SPP respectfully requests that the Commission consider these comments in developing a final rule.

Respectfully submitted,

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