

172 FERC ¶ 61,027
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

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

Southwest Power Pool, Inc.

Docket No. ER20-1617-000

ORDER ACCEPTING TARIFF REVISIONS

(Issued July 16, 2020)

1. On April 21, 2020, Southwest Power Pool, Inc. (SPP) filed revisions to its Open Access Transmission Tariff (Tariff), pursuant to section 205 of the Federal Power Act (FPA)¹ and section 35.13 of the Commission's Rules of Practice and Procedure,² to implement two new ramp capability products, Ramp Capability-Up and Ramp Capability-Down (together, Ramp Product). SPP requests a placeholder effective date to allow it time to develop the software changes necessary to implement the proposed Tariff revisions. We accept the proposed Tariff revisions, as requested, and direct SPP to submit an informational filing notifying the Commission of the actual effective date no less than 30 days prior to the date the proposed Tariff revisions are to be implemented in its software, as discussed below.

I. Filing

2. SPP proposes to revise Attachment AE (Integrated Marketplace) of its Tariff to implement a new operating reserve product, the Ramp Product.³ SPP explains that the extensive and continued penetration of variable energy resources on its system increases uncertainty in net load forecasts,⁴ which accordingly requires the market to procure more ramping capability through out-of-market mechanisms and often results in make-whole

¹ 16 U.S.C. 824d (2018).

² 18 C.F.R. § 35.13 (2019).

³ Transmittal at 4.

⁴ *Id.* at n.17. SPP considers net load to be the generation required to meet load, losses, and net scheduled interchange minus the generation from variable energy resources.

payments and uplift. SPP notes that increased uncertainty in projected net load results in more frequent transient periods of operating reserve shortages, increasing price volatility and raising costs to load. Further, SPP states that its dispatch engine currently uses the most economic and fastest-ramping resources first without considering the ability to meet future needs, which occasionally results in operational challenges when only slow-ramping resources are available to balance variations in net load.⁵

3. SPP states that its proposed market design changes address these concerns by using a market-based approach to systematically procure ramp capability for a future interval in order to manage both anticipated and unforeseen significant ramping events within the hour. Under the proposed design, SPP's dispatch engine will evaluate the tradeoffs of using resources capable of following setpoint instructions to provide ramping capability or energy based on the effect on production cost. SPP proposes to compensate resources based on the applicable Ramp Product's clearing price, which will be calculated as the marginal resource's opportunity cost.⁶ SPP states that this approach will render resources economically indifferent to providing either ramping capability or energy.⁷ To ensure that generators follow dispatch instructions, SPP has proposed a mechanism wherein a charge will be calculated for each dispatch interval when a resource with cleared real-time ramp capability up or down operates outside of its operating tolerance.⁸ SPP proposes to allocate the costs of procuring ramp capability to load and exports based on load-ratio share.⁹

4. SPP proposes to calculate ramp requirements in both the day-ahead and real-time markets based on forecasted net load changes and historical net load forecast error over a rolling 20-minute period (10 minutes for traditional real time solution look ahead and an additional 10 minutes for ramp and net load optimization), averaged into an hourly requirement.¹⁰ SPP explains that it examined 10-minute, 15-minute, and 20-minute time horizons and determined that a 10-minute period provided the largest reduction in

⁵ *Id.* at 4-6.

⁶ For example, the marginal resource for Ramp Capability-Up would be the "last" resource to clear for Ramp Capability-Up, meaning its opportunity cost, which sets the applicable Market Clearing Price, is the highest of all resources supplying Ramp-Capability-Up in a given interval. *See id.* at 8.

⁷ *Id.* at 6.

⁸ Proposed SPP Tariff, Attach. AE § 8.6.27.

⁹ *Id.* §§ 8.5.27, 8.5.28, 8.6.26.

¹⁰ Transmittal at 7.

short-term operating reserve shortages and the smallest increase in production cost. SPP explains that its analysis showed an expected reduction of 84% of scarcity events, a two percent reduction in breached constraints, and a potential savings of over \$20/MWh when capacity is procured through the Ramp Product rather than operator action.¹¹

5. SPP proposes to use Ramp Capability-Up and Ramp Capability-Down demand curves when ramp capability is scarce or when the cost to procure ramp capability exceeds the scarcity price from the demand curve(s). In these cases, the market clearing price for ramp capability will be set by the demand curve(s) and will be included in LMP. SPP states that this approach is very similar to the approach used for its other operating reserve products.¹² SPP proposes to use downward-sloping stepped demand curves with a maximum price based on the average cost of committing a fast-start resource to cure the ramp deficiency, and a minimum scarcity price of \$10/MWh for Ramp Capability-Up and \$0/MWh for Ramp Capability-Down. The demand curves contain six equal price increments depending on the severity of the shortage and will be updated every month based on the data from the last three months, similar to SPP's demand curve for regulation.¹³

6. SPP requests waiver of the Commission's notice requirements to allow an effective date of 12/31/9998 for the proposed Tariff revisions.¹⁴ SPP argues that good cause exists to grant this waiver because it needs time to develop, test, and move the proposed revisions into its systems. SPP states that it plans to implement its proposal in the second quarter of 2021 and will specify a precise effective date prior to implementation.¹⁵

II. Notice of Filing and Responsive Pleadings

7. Notice of SPP's filing was published in the *Federal Register*, 85 Fed. Reg. 23,351 (Apr. 27, 2020), with interventions and protests due on or before May 12, 2020. On April 30, 2020, Golden Spread Electric Cooperative, Inc. (Golden Spread) filed a motion

¹¹ *Id.* at 9-10.

¹² *Id.* at 8 (noting that the Commission accepted such an approach in Docket No. ER17-1092-000).

¹³ *Id.*

¹⁴ *Id.* at 18 (citing 18 C.F.R. § 35.3(a)(1) (2019)).

¹⁵ *Id.*

to extend the comment period to May 22, 2020.¹⁶ On May 5, 2020, a notice was issued extending the comment period until, and including May 22, 2020.¹⁷ The Missouri Public Service Commission filed a notice of intervention. American Electric Power Co., on behalf of its affiliates Public Service Co. of Oklahoma and Southwestern Electric Power Co.; Evergy Kansas Central, Inc., Evergy Metro, Inc. and Evergy Missouri West, Inc.; Omaha Public Power District; and Xcel Energy Services Inc., on behalf of its affiliate Southwestern Public Service Co. filed timely motions to intervene. The SPP Market Monitoring Unit (Market Monitor) filed a timely motion to intervene and comments. EDF Renewables, Inc. (EDF Renewables) and Sunflower Electric Power Corp. (Sunflower) filed timely motions to intervene and comments and Golden Spread filed a timely motion to intervene and a protest. On June 8, 2020, SPP and the Market Monitor filed answers, on June 23, 2020, Golden Spread filed an answer, and on July 7, 2020, SPP filed an answer.

III. Comments and Protests

8. The Market Monitor supports the proposed Ramp Product and agrees with SPP that the proposed design will provide deliverable ramp capability to the market, provide a transparent compensation mechanism, increase reliability, and decrease real-time price volatility.¹⁸ The Market Monitor contends that SPP's current practice of procuring additional ramping capability by manually committing resources often leads to uneconomic results.¹⁹ The Market Monitor states that increased penetration of variable energy resources in recent years has led to additional manual commitments that lead to additional uplift and make-whole payments, and that the additional reliance on uplift payments distorts price formation in SPP markets.²⁰

9. The Market Monitor states that it supports the proposed design of the demand curves, noting that the current proposal is expected to reduce the instances of shortages. However, the Market Monitor raises a concern that demand curve prices may result in under-procurement of ramp capability in certain circumstances.²¹ The Market Monitor

¹⁶ Golden Spread, Motion for Extension of Time, Docket No. ER20-1617-000 (filed Apr. 30, 2020).

¹⁷ Notice Granting Extension of Time, Docket No. ER20-1617-000 (May 5, 2020).

¹⁸ Market Monitor Comments at 1.

¹⁹ *Id.* at 2.

²⁰ *Id.* at 3-4.

²¹ *Id.* at 1.

states that it will continue to assess the issue going forward and recommend changes if necessary.

10. Golden Spread contends that SPP's proposal is unjust and unreasonable because it does not allow for the participation of offline fast-start resources.²² Golden Spread asserts that the exclusion of offline fast-start resources from providing ramp capability impedes the Commission's price formation goals by failing to transparently reflect the marginal cost of serving load and the value quick-start resources provide in meeting system needs and could further increase production costs "by unnecessarily restricting the set of resources that can be used to meet unforeseen or transient real-time system needs."²³

11. In addition, Golden Spread states that SPP currently manages its intra-hour ramping needs by utilizing an Instantaneous Load Capacity constraint,²⁴ and argues that the use of the Ramp Product should result in a reduction in the Instantaneous Load Capacity by the amount of cleared ramp capability in a given operating interval.²⁵ Golden Spread contends that, without this reduction, Instantaneous Load Capacity could be over-procured, leading to price distortion because Instantaneous Load Capacity is not priced.²⁶

12. Golden Spread also concurs with the Market Monitor's concern that the maximum ramp scarcity prices are too low to properly compensate resources and will result in under-procurement, which Golden Spread argues could undermine the Commission's price formation goals.²⁷

13. Accordingly, Golden Spread requests that the Commission either reject the filing or direct SPP to modify the Ramp Product Tariff provisions to provide that: (1) all fast-start resources may provide the Ramp Product; (2) Ramp Capability-Up will be used to

²² Golden Spread Protest at 7.

²³ *Id.* at 7-8 (citing *Sw. Power Pool, Inc.*, 167 FERC ¶ 61,217, at PP 7, 43-44 (2019)).

²⁴ Instantaneous Load Capacity is the achievable change in real power output required to account for differences between the average load and projected instantaneous load. SPP Tariff, Attach. AE (MPL), § 1.11 Definitions (5.0.0).

²⁵ Golden Spread Protest at 9.

²⁶ *Id.* at 10.

²⁷ *Id.* at 11.

reduce the requirement for Instantaneous Load Capacity; and (3) the maximum price for scarcity price curves be set at a percentage below the lowest level of the applicable regulation-up and regulation-down scarcity demand curves.²⁸ Golden Spread asserts that without these revisions the Ramp Product will result in market pricing and manual procurement practices that are unjust and unreasonable, and unduly discriminatory and preferential.²⁹

14. Sunflower argues that the cost allocation for SPP's proposed Ramp Capability-Up and Ramp Capability-Down products is unclear and may not appropriately ensure that costs are allocated to those who cause them to be incurred and will benefit from the new services.³⁰ Sunflower requests that SPP explain how such a cost allocation is consistent with the Commission's policy that costs should be allocated to those responsible for their incurrence and who benefit therefrom.³¹ Sunflower argues that, while SPP's proposal makes clear that wind generation is a significant cause of the costs associated with the proposed ramp services, SPP's proposal does not appear to reasonably allocate costs to intermittent fuel supply resources. Sunflower contends that intermittent resources (such as wind), net scheduled interchange, and benefiting load should proportionally pay for their contribution to the need for the proposed Ramp Product.

15. Sunflower contends that, while the Commission accepted a similar methodology in MISO, the circumstances here are different. Specifically, Sunflower notes that SPP's filing indicates that intermittent resources are the primary cause of costs here. Sunflower further contends that the costs associated with SPP's ramp services have not been shown to be relatively low, and posits that an appropriate allocation of costs to intermittent resources might provide price signals for investment in those facilities.³²

16. Finally, Sunflower argues that SPP's proposal to value the Ramp Product based on opportunity costs is not likely to incent resource flexibility or investment in resources to bolster reliability to the extent asserted by SPP.³³ Sunflower recommends that SPP

²⁸ *Id.* at 12-13.

²⁹ *Id.* at 12.

³⁰ Sunflower Comments at 2.

³¹ *Id.* at 5.

³² *Id.* at 8-9 (citing *Midcontinent Indep. Sys. Operator, Inc.*, 149 FERC ¶ 61,095, at P 26 (2014)).

³³ *Id.* at 9.

consider implementing a ramp product that incorporates explicit offers from market participants, instead of opportunity costs.³⁴

17. EDF Renewables states that it supports the concept underlying SPP's proposal. However, EDF Renewables contends that SPP's existing rules limit the ramp capability of dispatchable variable energy resources and artificially limit their ability to participate in the Ramp Product. EDF Renewables "asks [that] the Commission . . . give SPP the guidance to remove the artificial limitation that it imposes on [dispatchable variable energy resources] in parallel with accepting SPP's proposal."³⁵

IV. Answers

18. In response to the Market Monitor and Golden Spread's concerns regarding scarcity pricing and under-procurement of ramp, SPP notes that in developing its Ramp Capability-Up and Ramp Capability-Down demand curves, it used an approach similar to the demand curves used for regulation. SPP states that, following implementation, it will continue to monitor the effectiveness of the curves and make changes if necessary.³⁶

19. SPP explains that Instantaneous Load Capacity does not always overlap with Ramp Capability requirements. Specifically, SPP states that Instantaneous Load Capacity responds to the need for capacity to achieve a load that exceeds hourly average load, while ramp capability responds to the need in a five-minute interval to move from actual net load to a predicted net load. SPP explains that during periods in which these do not fully overlap, capacity would be deficient without the use of Instantaneous Load Capacity.³⁷

20. Regarding fast-start pricing, SPP notes that its fast-start pricing logic is currently at issue in a proceeding pending before the Commission. SPP argues the Commission should approve the instant filing based on the substantial benefits of the Ramp Product as proposed, and states that it will take a more holistic look at the fast-start participation model after it receives guidance from the Commission in the fast-start proceeding.³⁸

³⁴ *Id.* at 10.

³⁵ EDF Renewables Comments at 2-3.

³⁶ SPP June 8 Answer at 4.

³⁷ *Id.* at 8-9.

³⁸ *See Sw. Power Pool, Inc.*, 172 FERC ¶ 61,038 (2020).

21. SPP argues that its proposed cost allocation structure is appropriate, as it is the same allocation methodology used for all other operating reserve products in the Integrated Marketplace.³⁹ SPP explains that the costs of all operating reserve products are allocated to load and exports because they are the primary beneficiaries of the products. SPP contends that the goal of any operating reserve is to ensure that adequate generating capacity be available at all times to maintain scheduled frequency and avoid interruption of firm load following transmission or generation contingencies. SPP explains that the Ramp Product is merely an extension of the current operating reserve products and is being created for the same purpose. SPP further notes that, with regard to the actual occurrence of deviations, there are already provisions in the SPP Tariff that allocate the costs of deviations to those contributing to the deviations.⁴⁰

22. In its answer, the Market Monitor states that it agrees with Golden Spread that there should be a reduction of Instantaneous Load Capacity but contends that the proper amount of reduction is not known at this time. The Market Monitor states that after the Ramp Product is implemented and data is available, it will study the issue and recommend improvements as necessary.⁴¹

23. The Market Monitor disagrees with Golden Spread's characterization of the demand curves as being too low. The Market Monitor explains that its concern was that the proposed method for setting the demand curves is inflexible and may result in curves where ramp prices are too low if, for example, quick start resources expand their dispatchable ranges.⁴² However, the Market Monitor states that SPP's analysis showing an 84% reduction in energy price spikes demonstrates that the scarcity prices established by the Ramp Product's demand curves were effective during the study period. The Market Monitor contends that the proposed demand curves are appropriate initial demand curves, and states that it will monitor their effects on ramp procurement and make recommendations if necessary.⁴³

24. The Market Monitor explains that, due to the short time horizon of the Ramp Product, there are limitations that make it impractical to use offline resources to provide Ramp Capability-Up. Specifically, the Market Monitor notes that offline resources would be unable to provide less ramp than their minimum operating limit, as any

³⁹ SPP June 8 Answer at 10.

⁴⁰ *Id.* at 11-12.

⁴¹ Market Monitor Answer at 4.

⁴² *Id.* at 4-5 (citing Market Monitor Comments at 8-9).

⁴³ *Id.*

megawatts below a unit's minimum operating limit are not dispatchable. Similarly, the Market Monitor notes that an offline resource that was selected to provide Ramp Capability-Up would then also be required to run for the duration of its minimum run-time, which may not be economic. The Market Monitor further notes that Ramp Capability-Up from an offline fast-start resource may not be available in the period it is needed because it would receive a start-up instruction before the beginning of the interval when the Ramp Capability-Up is needed and would thus be required to be ramping up before the beginning of the interval when the ramp capability is needed.⁴⁴

25. The Market Monitor argues that the cost allocation is consistent with other operating reserve products in the SPP market and contends that the proposed methodology allocates costs in a manner roughly commensurate with the benefits provided.⁴⁵

26. Golden Spread states that ramping constraints are likely most severe when there are high levels of variable energy resource output, low load, and potentially significant amounts of self-scheduled generation. Golden Spread contends that under such circumstances, utilizing offline fast-start resources that can reach their maximum output in less than 10 minutes would be more cost-effective than committing other units. Golden Spread contends the exclusion of offline fast-start resources is particularly problematic because SPP does not have a market based real-time unit commitment process.⁴⁶

27. Golden Spread contends that Instantaneous Load Capacity is essentially a 30-minute ramping service, and that implementing the Ramp Product without adjusting the Instantaneous Load Capacity constraint will yield rates that are not just and reasonable.⁴⁷

28. In its July 7 Answer, SPP reiterates that the expected economic and reliability benefits of the ramp capability products to the entire market should not be delayed because, initially, offline fast-start resources, a small percentage of the total generation in SPP, may not yet be fully optimized. SPP contends that it will ideally have the

⁴⁴ *Id.* at 3.

⁴⁵ *Id.* at 5-6 (citing *Ill. Commerce Comm'n v. FERC*, 576 F.3d 470, 477 (7th Cir. 2009) (defining "roughly commensurate")).

⁴⁶ Golden Spread Answer to Answer at 3-4.

⁴⁷ *Id.* at 4-6.

foundation to fully optimize these resources when it receives guidance from the Commission in the fast-start proceeding.⁴⁸

29. SPP further explains that the minimum Instantaneous Load Capacity requirements are set with operator input based on operator experience. SPP states that as it gains experience with the Ramp Product, it will review the procurement levels of Instantaneous Load Capacity and assess whether the minimum Instantaneous Load Capacity Requirements can be reduced.⁴⁹

V. Discussion

A. Procedural Matters

30. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2019), the notice of intervention and timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

31. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2019), prohibits an answer to a protest or answer unless otherwise ordered by the decisional authority. We accept the answers filed by SPP, the Market Monitor, and Golden Spread because they have provided information that assisted us in our decision-making process.

B. Commission Determination

32. As discussed below, we find SPP's proposed Tariff revisions to implement the Ramp Product to be just and reasonable and therefore accept them. We grant SPP's request for waiver of the Commission's 120-day notice requirement⁵⁰ for good cause shown and accept the proposed Tariff revisions, subject to SPP making an informational filing notifying the Commission of the actual effective date no less than 30 days prior to the date the proposed Tariff revisions are to be implemented in its software. SPP should use the following eTariff Type of Filing Code: 150 Data Response/Supplement the Record.

33. We find SPP's proposal to evaluate and compensate resources providing ramp capability based on the opportunity cost of providing energy to be just and reasonable. As SPP explains, this proposal will allow SPP to economically evaluate and compensate

⁴⁸ SPP July 7 Answer at 4.

⁴⁹ *Id.* at 5-6.

⁵⁰ 18 C.F.R. § 35.3(a)(1).

resources capable of following setpoint instructions.⁵¹ While Golden Spread argues that certain offline resources should be allowed to participate, we agree with the Market Monitor that offline resource participation would be impractical under the proposed construct. As designed, the market clearing engine would be unable to properly evaluate or efficiently dispatch these resources. We do not find that the exclusion of these resources renders the Ramp Product unjust and unreasonable.⁵²

34. In addition, we find the demand curves proposed by SPP to be just and reasonable. SPP's analysis shows that, as currently constructed, the Ramp Product and its demand curves will reduce the frequency of operating reserve scarcity events. No commenters refute this point, and the Market Monitor agrees that the study shows that scarcity prices were effective during the study period.⁵³ The Market Monitor commits to tracking potential issues with the demand curves going forward and recommending improvements if appropriate, and we encourage SPP to remain engaged with the Market Monitor and stakeholders on this issue as SPP gains experience with the Ramp Product.

35. Regarding commenters' concerns about potential overlap between the procurement of Instantaneous Load Capacity and the proposed Ramp Product, we agree with commenters that the reliance on out-of-market mechanisms, such as Instantaneous Load Capacity, can distort prices in some circumstances. However, as noted by SPP and the Market Monitor, Instantaneous Load Capacity and the Ramp Product do not always overlap, so the proper reduction of Instantaneous Load Capacity, if any, is unknown at this time. We note that both SPP and the Market Monitor have committed to studying this issue as they gain the operational data necessary to do so, and, again, we encourage SPP to remain engaged with the Market Monitor and stakeholders on this issue as SPP gains experience with the Ramp Product.

36. We find SPP's proposal to allocate costs of the Ramp Product to load and exports to be just and reasonable. Although Sunflower contends that costs be allocated to certain generation resources, the Ramp Product is an operating reserve that serves and benefits load and exports, not generation. SPP's proposed cost allocation is consistent with how SPP allocates the costs of other operating reserves, and with the Commission's decision

⁵¹ Transmittal at 7.

⁵² We note, however, that SPP commits to taking a more holistic look at the fast-start participation model after it receives guidance from the Commission in the fast-start proceeding. *See* SPP June 8 Answer at 7.

⁵³ Market Monitor Answer at 4-5.

on the cost allocation used by MISO for its ramp product.⁵⁴ Finally, as SPP notes, there are already provisions in the Tariff that allocate the costs of deviations to those contributing to the deviations, and these provisions apply to generation resources.⁵⁵

37. Regarding EDF Renewables' comments, we note that SPP's proposed revisions in this proceeding do not address ramp rates used in offers for dispatchable variable energy resources, whose use extends beyond the proposed Ramp Product. Thus, we find EDF Renewables' comments to be beyond the scope of this proceeding.

The Commission orders:

(A) SPP's filing is hereby accepted, as discussed in the body of this order.

(B) SPP is hereby directed to submit an informational filing, as discussed in the body of this order.

By the Commission.

(S E A L)

Kimberly D. Bose,
Secretary.

⁵⁴ See *Sw. Power Pool, Inc.*, 161 FERC ¶ 61,157, at P 21 (2017) (accepting SPP's proposal for its contingency and regulation demand curves); *Midcontinent Indep. Sys. Operator, Inc.*, 149 FERC ¶ 61,095, at P 26 (2014).

⁵⁵ See, e.g., SPP Tariff, Attach. AE (MPL), § 8.6.7 Reliability Unit Commitment Make Whole Payment Distribution Amount (5.0.0).