UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Settlement Intervals and Shortage Pricing in Markets Operated by Regional Transmission Organizations and Independent System Operators	**)** **)** **)** **)**	**Docket No. RM15-24-000**

JOINT COMMENTS OF PJM INTERCONNECTION, L.L.C AND SOUTHWEST POWER POOL, INC. ADDRESSING SHORTAGE PRICING

In response to the Federal Energy Regulatory Commission's ("Commission") Notice of Proposed Rulemaking, issued in the above-referenced proceeding on September 17, 2015 ("NOPR"),[1] PJM Interconnection, L.L.C. ("PJM") and the Southwest Power Pool ("SPP") (collectively, the "Filing Parties") hereby respectfully submit these joint comments to the Commission's questions outlined in the NOPR addressing shortage pricing. PJM is submitting its own comments contemporaneously with these joint comments that address other issues raised by the Commission in the NOPR.

I. INTRODUCTION

Shortage pricing is a market mechanism to incent operational behavior and investment decisions that are designed to mitigate the potential reliability impact associated with energy and operating reserve shortages.[2] The Filing Parties support shortage pricing when it is justified – *i.e*. when a true shortage of a particular product exists that presents reliability concerns.[3] However, the Filing Parties are concerned that the NOPR proposal to trigger shortage pricing for

[1] *Settlement Intervals and Shortage Pricing in Markets Operated by Regional Transmission Organizations and Independent System Operators*, 152 FERC ¶ 61,218 (2015).

[2] The Filing Parties note that "shortage pricing" and "scarcity pricing" are generally synonymous terms. For simplicity, the Filing Parties will refer to "shortage pricing" throughout these joint comments.

[3] PJM and SPP both employ shortage pricing when system conditions warrant the application of shortage prices.

"any dispatch interval"[4] during which a shortage of energy or operating reserve occurs, does not recognize 1) that those circumstances may not present stressed system conditions that warrant shortage pricing and 2) the practical limitations on grid resources' and market participants' ability to instantaneously respond to shortage conditions. Applying shortage pricing in such instances may award events that are entirely transitory in nature, do not pose reliability concerns underlying shortage pricing policy, and simply cannot be addressed because of the practical response limitations on resources. Requiring shortage pricing under these transitory circumstances misaligns price changes with the associated changes in resource operation, and therefore may not achieve the Commission's well-intentioned goal to align prices with signals for investment to facilitate reliability, and may also result in market pricing and operations that are contrary to the Commission's goal. Accordingly, a rule that applies shortage pricing without distinction in terms of the actual impact (real or potential) to system reliability will not achieve the Commission's stated goals.[5]

The Filing Parties have established rules related to this issue that are consistent with the principles and goals of shortage pricing. The Filing Parties urge the Commission to recognize and respect the rules in place in different Regional Transmission Organizations ("RTOs") and Independent System Operators ("ISOs") (collectively, "RTOs/ISOs"). Consistent with this position, any rule issued in this proceeding should not impose an inflexible, universal rule. Rather, the Commission should provide adequate flexibility to allow the respective RTOs/ISOs to implement shortage pricing in the context of their regional rules. This approach will ensure

[4] *See* NOPR at P 51.

[5] The NOPR states that the goals of the Commission's proposal are to "ensure that resources have price signals that provide incentives to conform their output to dispatch instructions, and that prices reflect operating needs at each dispatch interval." *See* NOPR at P 5.

that any action the Commission takes is implemented consistent with the purpose of shortage pricing (*i.e.* to mitigate actual reliability concerns), and does not create inefficient pricing that compensates resources for actions that have limited value relative to the economic or reliability purposes of shortage policy.

II. TRIGGERING SHORTAGE PRICING FOR DISPATCH INTERVAL FOR WHICH SHORTAGE OF ENERGY OR OPERATING RESERVES OCCURS

In the NOPR, the Commission opined that there are "potentially unjust and unreasonable rates caused by restrictions on shortage pricing."[6] Thus, the Commission proposed "to require that RTOs/ISOs trigger shortage pricing for any dispatch interval during which a shortage of energy or operating reserves occurs."[7]

Transient periods of shortage can be caused by a number of different occurrences that do not necessarily reflect system conditions that warrant the application of shortage pricing. Application of shortage pricing in such circumstances could overstate the severity of the operating condition. Contrary to the goal of shortage policy, elevated locational marginal prices ("LMP") during such transient periods could result in prices that do not accurately reflect operating conditions on the system or last long enough to allow market participants responding to them to take meaningful action. In fact, applying shortage pricing to transient conditions may result in responses that occur after the relevant interval. If this occurs, it could actually be counterproductive from an operational perspective, as well as an economics perspective, because the response would come when the system operator does not need the capacity.

For example, in the PJM region, if PJM is currently carrying the required amount of reserves and a market seller of a generation resource lowers the resource's economic maximum

[6] *See* NOPR at P 51.

[7] *See id.*

capability, for a brief period of time (for example, 10 minutes or less), PJM may have less reserves than its requirement. Under such circumstances, PJM can easily recover these reserves by re-executing its dispatch engine and re-dispatching the system. However, under the rules proposed in the NOPR, this would potentially invoke shortage pricing, which would then attract more suppliers to respond than may be needed and create disincentives for those resources to back down once the transitory event is over. In another example, assume that PJM has scheduled a resource with a 10 minute start-up time to come online to provide energy so that another resource may be reduced to provide reserves. If the resource that is scheduled to come online actually takes 20 minutes to start instead of 10 minutes, this could also trigger shortage pricing based on the rules proposed in the NOPR. This is because PJM would have aligned its system and resources based on the expectation that the resource scheduled to come online would have been online based on its start-up time of 10 minutes. If that scheduled resource is late, the resource that expected to be reduced to provide reserves would now need to continue to provide energy, thus potentially leaving PJM short on reserves for a brief period of time.

Another example applies to the SPP region. In SPP, the rules allow SPP to temporarily use operating reserves to meet energy requirements during transient periods. During these periods, system conditions do not present reliability concerns that justify the application of shortage pricing. While this may technically compromise the operating reserve requirement, the condition is transient and is recovered within 5-10 minutes. Furthermore, it is arguable that this is not a capacity/operating reserve shortage, but is actually a transient reallocation of capacity to manage temporary energy needs caused by the operational characteristics of resources. Once the interval is over, the capacity is reallocated to restore the operating reserve requirement. In other words, there is still adequate capacity on the system, and the use of operating reserves to address

transient energy related operational conditions does not present shortage conditions or reliability concerns that justify shortage pricing. Accordingly, applying shortage pricing in these circumstances would not be appropriate from a pricing or operational perspective.

From an operational standpoint, none of the conditions described above in PJM and SPP present emergency conditions or reliability concerns that justify shortage pricing. Fluctuations in the system such as these occur every day because the resources meeting the needs of the system are imperfect and cannot operate exactly as described in mathematical models. Shortages caused by the aforementioned occurrences should not automatically result in shortage pricing events as the NOPR seems to dictate. Applying shortage pricing in these circumstances would 1) not address a reliability concern (because one does not exist), and actually could create operational issues by incenting resources to come online when they are not needed, and 2) would result in inefficient pricing because resources would be eligible for higher shortage prices while not providing commensurate value to the system, because, as stated, there is no real reliability concern during these circumstances. These outcomes are contrary to the economic and operational goals in the NOPR.

Under PJM's and SPP's current rules, pricing shortages for the circumstances described above are avoided by applying the respective rules of each entity. With respect to SPP, its rules specifically preclude shortage pricing for operating reserve shortages when the occurrence is related to the use of reserves to address transient energy related operational issues associated with operating characteristics of units. With respect to PJM, its rules apply look-ahead dispatch algorithms to confirm that the current shortage will be sustained for at least 30 minutes. These mechanisms provide reasonable assurance that the shortage is legitimate and is not caused by a normal, benign, system fluctuation or because a generation resource did not operate exactly to its

articulated parameters. These mechanisms also ensure that the shortage pricing will occur for a period of time long enough for market participants to appropriately respond to the shortage event. Such responses may include, but are not limited to, curtailing load, starting a generator, increasing the output of an online generator or scheduling an import into PJM. None of these actions can be taken instantaneously to capitalize on a five minute price fluctuation caused by a transient shortage.

In the PJM and SPP examples, if actions are taken as the result of a transient shortage that are not related to stressed system conditions that present actual reliability concerns, their operational impact will likely not occur until after the transient shortage has ended and the action is no longer consistent with the economic or operational goals of shortage pricing policies. In fact, such actions can cause system fluctuations due to a delayed response and can ultimately result in an oscillating system. Thus, applying shortage pricing to relevant transient shortages will result in inaccurate market clearing prices that in fact could degrade system reliability.

III. RECOMMENDATIONS TO CHANGE PROPOSED RULE

The Proposed Rule states, in relevant part:

> "Each Commission-approved independent system operator and regional transmission organization ***must*** trigger shortage pricing for ***any*** dispatch interval during which a shortage of energy or operating reserves occurs."[8]

The specific circumstances in the SPP and PJM regions are examples of why the Proposed Rule's absolute requirement that shortage pricing "*must*" be triggered for "*any* dispatch interval" during which a shortage of energy or operating reserves occurs is overbroad and will have unintended consequences that will cause the costs of the rule to exceed its benefits, and is inconsistent with the Commission's stated goals. Shortage pricing should not be applied via a

[8] *See* Proposed Rule, 18 C.F.R. § 35.28(g)(1)(iv) (emphasis added).

general rule without consideration of particular circumstances. Allowing for adequate flexibility that provides RTOs/ISOs with the ability to apply shortage pricing consistent with their respective market designs will facilitate effective and efficient implementation of the Commission's goals by imposing shortage pricing only when there are meaningful shortages of energy or operating reserves.

If the Commission implements a shortage pricing rule, it should recognize and respect the fact that not all instances of shortages justify shortage pricing, and it should provide for adequate regional discretion to apply shortage pricing in only those circumstance that truly warrant it. Simply put, the practical consequences of implementing transient shortages in circumstances that do not present actual reliability concerns far outweigh the theoretical benefits, and the Filing Parties strongly urge the Commission to avoid issuing a final rule that requires transient shortage pricing in a universal manner.

Accordingly, the Filing Parties suggest that the Commission amend its Proposed Rule to state: "Each RTO/ISO must establish tariff provisions that implement shortage pricing for pre-defined operating conditions related to a shortage of energy or operating reserves. The Commission will allow each RTO/ISO to develop those provisions based on their regional circumstances, provided that the rules are consistent with shortage pricing principles and are designed to facilitate the goals of this NOPR. The Commission expects that each RTO/ISO will explain why their provisions, or why their current rules, comply with this rule."

Moreover, if the Commission elects to establish a general, universal shortage pricing rule that requires related pricing even for transient circumstances that do not warrant such pricing, the Filing Parties note that such a rule would likely require the implementation of demand curves

that distinguish prices relative to varying degrees of shortage.[9] For example, if PJM were to implement the proposed rules related to shortage pricing, it will require review and adjustment to its operating reserve demand curves ("ORDC"). The ORDCs PJM currently utilizes were designed under the assumption that shortage pricing would only occur during emergency operating conditions and therefore the curves are a step function. Under the proposal in the NOPR, PJM would be required to price instances of transient shortages that may only be for few megawatts, and therefore do not pose the same reliability threat as the sustained reserve shortages PJM prices for today. Under the Proposed Rule in the NOPR, an adjustment would be needed to PJM's ORDCs to incorporate how the level of reserve shortage corresponds to system reliability to ensure that market clearing prices do not overstate the current operating state of the system.

Similarly, if SPP is required to apply shortage pricing for all shortages, it would likely consider the implementation of an ORDC that establishes a pricing gradient based on the different degrees of shortages and their impact on reliability. Any other approach – e.g. steep step curves – would not result in efficient pricing, because such approaches would not align the system's pricing to the actual system conditions and related degree of reliability concerns.

The Filing Parties believe that the better approach is to allow for regional rules that distinguish between real shortage conditions and more transitory conditions that do not warrant shortage prices.

[9] The NOPR does not address the method of shortage pricing, but rather just proposes to establish a general rule of applicability.

IV. CONCLUSION

The Filing Parties respectfully request that the Commission consider the information provided herein.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Audubon, PA, this 30th day of November, 2015.

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Document Content(s)

PJM-SPP comments .PDF.....1-10