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

COMMENTS OF THE
TRANSMISSION ACCESS POLICY STUDY GROUP

Pursuant to the Commission's September 17, 2015 Notice of Proposed Rulemaking,[1] the Transmission Access Policy Study Group ("TAPS") comments on the Commission's proposal to require that each regional transmission organization ("RTO"): "(1) settle energy transactions in its real-time markets at the same time interval it dispatches energy and settle operating reserves transactions in its real-time markets at the same time interval it prices operating reserves, and (2) trigger shortage pricing for any dispatch interval during which a shortage of energy or operating reserves occurs." NOPR P 5 (footnote omitted). As discussed below, TAPS does not oppose the NOPR's first element, provided it is clarified to assure that it does not impose undue burden on load-serving entities ("LSEs"). However, TAPS urges the Commission to not adopt the second element of the NOPR, or at minimum to modify the NOPR's shortage pricing proposal to assure the rates resulting from triggering administratively determined shortage pricing for transient scarcity events are just and reasonable. Specifically:

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[1] Settlement Intervals and Shortage Pricing in Markets Operated by Regional Transmission Organizations and Independent System Operators, 80 Fed. Reg. 58,393 (proposed Sept. 29, 2015), FERC Stats. & Regs. ¶ 32,710 (proposed 2015) ("NOPR").

- The Commission should clarify that an RTO can satisfy the NOPR's proposed sub-hourly settlements requirement without requiring that all loads within the RTO's footprint immediately replace their existing meters with revenue-quality sub-hourly meters and new or upgraded data handling and communications equipment that such sub-hourly metering might require. Instead, the Commission should direct RTOs to work with their stakeholders to develop load profiling or other methodologies to allow the use of existing load metering in new sub-hourly settlement platforms.

- The Commission should not adopt the NOPR's proposed requirement to trigger shortage pricing for all transient scarcity events. If the Commission nevertheless adopts the requirement, it should modify the NOPR's proposal to require that RTOs also demonstrate in their compliance filings that the administratively determined shortage prices they would charge during transient scarcity events are just and reasonable. The NOPR's compliance and effective date proposals should also be altered, so that needed modifications to shortage pricing levels and other market structures can be made simultaneously with the mandated change to shortage pricing triggers, and all changes will become effective only after Commission approval and a reasonable time to implement that compliance decision.

INTEREST OF TAPS

TAPS is an association of transmission-dependent utilities ("TDUs") in more than 35 states, promoting open and non-discriminatory transmission access.[2] Representing LSEs entirely or predominantly dependent on transmission facilities owned and controlled by others, TAPS has supported the Commission's initiative to form truly independent regional transmission organizations ("RTOs") to foster efficient investment in transmission and generation, provide non-discriminatory transmission access, and support robust wholesale competition. TAPS members have concerns about possible generic Commission action that could undermine the proper functioning of RTO energy and operating reserves markets.

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[2] Duncan Kincheloe, Missouri Public Utility Alliance, chairs the TAPS Board. Jane Cirrincione, Northern California Power Agency, is the TAPS Vice Chair. John Twitty is the TAPS Executive Director.

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COMMENTS

As discussed in our comments on the Price Formation Technical Workshops,[3] TAPS views RTO energy and ancillary services markets as generally working well. In the vast majority of hours, and for the vast majority of dollars, these markets operate smoothly and transparently. Brief, intermittent, and unpredictable energy market price spikes like those the NOPR is designed around—i.e., high Locational Marginal Prices during individual sub-hourly periods within a given hour, and administratively determined shortage pricing imposed during transient scarcity events—represent only a small portion of the dispatch intervals and revenues in RTO energy and ancillary services markets. There is always room for improvement; and if implemented properly, the NOPR's proposed reforms may have the potential to produce small incremental efficiency gains. However, the additional cost, complexity, potential for adverse interactive effects on the RTO's other markets, and opportunity for market power caused by market design changes must be balanced against those potential gains, keeping in mind the Commission's statutory obligation to set rates that result in the lowest

[3] Responses of the Transmission Access Policy Study Group to Staff Questions, *Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators*, Docket No. AD14-14-000 (Mar. 6, 2015), eLibrary No. 20150306-5257 ("TAPS Technical Workshop Comments").

reasonable cost to consumers. Based on this standard, TAPS urges the Commission: (1) to clarify the NOPR's proposed settlement interval directive to avoid undue burden on LSEs; and (2) either to not adopt the NOPR's shortage pricing proposal, or to modify it to assure shortage prices charged during transient scarcity events are just and reasonable.

I. SETTLEMENT INTERVALS

TAPS does not oppose requiring RTOs to settle energy and operating reserve transactions in real-time markets at the same time interval the RTO dispatches each of those products. As the NOPR notes (P 15 & n.19), three of the six RTOs already do so; and while there are technical challenges to making the transition from hourly to sub-hourly settlements, the change will not require modifications to RTO market products and operations, nor produce misleading price signals.

In addition, requiring that RTOs settle their energy and operating reserve markets separately for each dispatch interval will result in LSEs as a group paying the same total dollar amount for those products, as they would pay under an hourly settlements system that uses quantity-weighted average clearing prices during each hour. Unlike many of the other price formation reforms discussed during the 2014 Technical Workshops, the NOPR's proposed settlement interval requirement will not necessarily increase consumer costs for energy and operating reserves (although it will likely somewhat change the allocation of those costs among loads, as well as the allocation of revenues among different generators).

TAPS, however, asks that the Commission clarify this element of the NOPR, so that it does not impose undue burden on LSEs. While some LSEs—including certain TAPS members—already have revenue-quality five-minute metering installed for all of

their loads, others do not. Particularly for small loads, replacing well-functioning existing metering equipment, data systems, software, and communications equipment can be costly and will likely provide minimal or no benefits to those LSEs.

These additional LSE costs can be avoided, however, because sub-hourly settlements can be implemented *without* the installation of revenue-quality sub-hourly metering for all loads. MISO, ISO New England, and Southwest Power Pool have all developed, in conjunction with their stakeholders, sub-hourly settlements approaches that provide for the use of load profiling or other methods, to integrate loads that have only hourly revenue-quality metering into a sub-hourly settlements platform.[4] These methods can achieve the more fine-grained generator compensation that the NOPR seeks (PP 26-33), without imposing unnecessary costs on LSEs, and while allowing loads to install revenue-quality sub-hourly metering capability over time.

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[4] *See* Hanhan Hammer, *Subhourly Real-Time Settlement*, ISO New England (Nov. 9-10, 2015), http://www.iso-ne.com/static-assets/documents/2015/11/a10_iso_presentation_11_10_15.pptx. ISO New England's sub-hourly settlements proposal also uses hourly revenue-quality metering, in conjunction with five-minute Supervisory Control and Data Acquisition ("SCADA") data, to profile generator output, rather than requiring revenue-quality sub-hourly metering for all generators. Christopher Parent, *Subhourly Real-Time Settlement*, ISO New England (Aug. 11-13, 2015), http://www.iso-ne.com/static-assets/documents/2015/08/a11_iso_presentation_08_13_15.pptx. *See also* Comments of the Midcontinent Independent System Operator, Inc. 18, *Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators*, Docket No. AD14-14-000 (Mar. 6, 2015), eLibrary No. 20150306-5333 ("MISO Technical Workshop Comments") ("As part of the implementation of the Ancillary Services Market in January 2009, MISO adopted load profiling algorithms that allow hourly meter values to be submitted, and that enable the derivation of a sub-hourly interval value from . . . SCADA[] values. MISO intends to use this same approach for market participants that have the capability to record and submit sub-hourly data."). SPP likewise uses load profiles based on SCADA data or, in the alternative state estimators, to integrate loads with only hourly revenue-quality meters into SPP's sub-hourly settlements platform. Southwest Power Pool, Inc., *Market Protocols, SPP Integrated Marketplace*, § 4.5.9 ("To calculate [Real-Time Balancing Market] actual Energy in a Dispatch Interval for Asset Owners that have not directly submitted 5-minute interval meter data, SPP allocates the submitted hourly meter data for Resources and loads into 5-minute values using 5-minute telemetered or State Estimator profiles for the corresponding hour.") and App. D, § 6.1 ("(1) Settlement meter data must be submitted, at a minimum, in hourly intervals; (2) Settlement meter data may be submitted in 5-minute intervals for Resources and/or load if this option is specified during market registration…") and § 7.2.1 ("Load data must be submitted in either 5-minute or hourly intervals according to the sign convention.") (Rev. 35, Nov. 13, 2015), http://www.spp.org/Documents/32931/Integrated%20Marketplace%20Protocols%2035.pdf.

The Commission should clarify that, while RTOs should accommodate and use revenue-quality sub-hourly meter data for generators and loads wherever available, an RTO can satisfy the NOPR's sub-hourly settlements requirement *without* requiring that all loads within its footprint immediately replace their existing meters with revenue-quality sub-hourly meters. Instead, RTOs should be directed to work with their stakeholders to develop load profiling or other methodologies to allow the use of existing load metering in new sub-hourly settlement platforms.

In addition to clarifying the NOPR's proposal to mitigate direct costs to LSEs, TAPS urges the Commission to remain mindful of the RTO administrative costs associated with transitioning immediately to sub-hourly settlements. Based on the preliminary information provided by PJM, such costs—which will be borne by LSEs—could be considerable.[5] Moreover, since the NOPR states (P 7) that additional rulemakings proposing other price formation reforms may be initiated soon, there is a significant risk that *in seriatim* directives will result in overlapping and successive requirements to modify the same RTO software and hardware systems, again and again. Rather than mandate piecemeal changes, the Commission should give RTOs the flexibility to schedule their compliance with all of the price formation rulemakings in a way that coordinates implementation and avoids unnecessary cost and re-work.

II. SHORTAGE PRICING

The NOPR would require every RTO to trigger shortage pricing for all shortages lasting at least one dispatch interval (i.e., currently five- or fifteen-minutes, depending on

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[5] Comments of PJM Interconnection, L.L.C. 12, *Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators*, Docket No. AD14-14-000 (Mar. 6, 2015), eLibrary No. 20150306-5315 ("PJM Technical Workshop Comments").

the RTO and particular product). The Commission acknowledges that the existing administratively determined shortage pricing levels that the RTOs have developed may need to be altered to reflect the value of generation during transient shortages (NOPR P 49), and that additional changes to existing RTO market models may be appropriate to mitigate "artificial shortages" that are either mathematical artifacts of current modeling, or technical shortages that pose no threat to system reliability (*id.*). Nevertheless, the NOPR proposes a one-size-fits-all mandate requiring the same shortage pricing trigger in all RTOs, expressly excluding "the price paid by any RTO/ISO when it triggers shortage pricing" from the scope of the NOPR (*id.* P 53), and proposing that full implementation of the shortage pricing trigger directive be effective within four months of the compliance filing required by any final rule (*id.* PP 54-55).

A. The Commission Should Not Adopt the NOPR's Proposed Shortage Pricing Requirement for Transient Scarcity Events.

TAPS urges the Commission not to adopt this part the NOPR. For very short, transient shortage conditions that are in the process of being resolved by system operators, it is inappropriate to trigger a shortage pricing event. As TAPS explained in its Technical Workshop Comments, any "price signal" provided by such transient events is meaningless, because the condition will be over before resources can respond to the higher shortage price.[6] Indeed, as MISO—an RTO that has already adopted shortage

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[6] TAPS Technical Workshop Comments at 24-26. *See also* PJM Technical Workshop Comments at 22 (noting that "[i]n real-time, there is not sufficient time for the market to respond to the signal" from transient shortage pricing) and 14. *See also* Transcript of Oct. 28, 2014 Technical Conference 246:14-20 (Robert Nelson, Southern California Edison), *In re: Price Formation in Energy and Ancillary Services Markets Operated by Regional Transmission Organizations and Independent System Operators: Scarcity and Shortage Pricing, Offer Mitigation, and Other Price Caps Workshop*, Docket No. AD14-14-000, eLibrary No. 20141028-4008 ("October Workshop Tr."):

> [California ISO] has had a material amount of price spikes in its real-time market. They're very short.

pricing for transient scarcity events—noted, if market participants with physical resources *were* to react to the price change, the result could be over-generation in subsequent intervals and undesirable increased price volatility.[7] The NOPR itself appears to concede that triggering shortage pricing for these types of transient conditions does not provide a useful short-term price signal to generators, specifically proposing to trigger shortage pricing "even when a reserve shortage is so short-lived that resources may be unable to respond to the price signal." NOPR P 49.

Nor does triggering shortage pricing in such conditions provide a useful long-term price signal that will incent the development of new generation to reduce the severity of future shortages. As explained by Patrick Connors (WPPI Energy), who spoke on behalf of TAPS during the October 2014 Workshop, "[n]o utility—regulated or unregulated—

> They're transient. They're often extreme. And generally the only people that are able to capture this are virtual bidders because it's too late for the physical people to move. It's not physically signaling. It's just … financial.

See also Prepared Direct Testimony of Joseph Gardner 7:5-10, *Midcontinent Indep. Sys. Operator, Inc.*, Docket No. ER14-2156-000 (June 10, 2014), eLibrary No. 20140610-5199 (noting that when scarcity events have a short duration, market participants cannot respond before the event ends). *See also*, October Workshop Tr. 41:7-24 (Todd Ramey, MISO):

> So, you know, operators asking questions. We've got stakeholders asking questions. What do you want us to do, MISO, in five minutes to react to a $1100 pricing signal? Do you want us to commit a unit?
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> Well, no, we don't want you to do that. We go with the system operators. Did you see this coming? Yes, we could see it coming but I knew it was transient. I knew it was a five-minute event. My choice was to go short of an operating reserve at a small increment or to commit a resource and commit the market to bearing the cost of that commitment decision to solve a five-minute problem. So working back and forth between operators, how they view system conditions and the value of reliability either from an operating reserve perspective, or even a transmission constraint perspective, what is it that's causing them to make decisions on unit commitment? So unit commitment even in real-time time frame is how you solve scarcity events.

[7] MISO Technical Workshop Comments at 37 ("It could actually be counter-productive to send out high shortage prices during this short period, as the system is secure and no further market response is needed. An over-correction could lead to other reliability issues, such as the overloading of a binding network element."). *See also* PJM Technical Workshop Comments at 23 ("[S]hort-lived shortage prices can lead to over-generation control problems because of interchange response to the transient price signal, as well as physical limitations associated with resource ramping capability. PJM has actually observed this behavior and it has caused issues with maintaining system control as well as suppression of energy market prices.")

will invest in a new generator in the hope that energy prices will be extremely high for a few hours every year; utilities base those investments on projections of adequate margins on both capacity and energy sales over the long-term."[8] MISO's recent experiences with triggering shortage pricing for transient scarcity events likewise confirm that additional revenue from such shortage prices is unlikely to have a significant effect on generation investment decisions.[9]

As a practical matter, the only effect of requiring RTOs to trigger shortage prices in transient scarcity events is to provide extra revenue to generators already in the market, burdening consumers who will pay more for exactly the same resources that those sellers committed to provide in the absence of a declared shortage. Therefore, consistent with its obligation to assure just and reasonable rates to consumers, the Commission should not

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[8] Written Statement of Patrick T. Connors on Behalf of WPPI Energy and the Transmission Access Policy Study Group Regarding Impacts of Offer Caps and Market Power Mitigation 5, *In re: Price Formation in Ancillary Services Markets Operated by Regional Transmission Organizations and Independent Systems Operators*, Docket No. AD14-14-000 (Dec. 3, 2014), eLibrary No. 20141203-4014 ("Statement of Patrick Connors").

In its January 2014 Comments on Centralized Capacity Markets, TAPS explained that "[o]nly markets that provide the potential for long-term commitments to support long-lived, capital-intensive investments are capable of maintaining resource adequacy and meeting other federal, state, and local energy policies." Post-Technical Conference Comments of the Transmission Access Policy Study Group 15, *Centralized Capacity Mkts. in Reg'l Transmission Orgs. and Indep. Sys. Operators*, Docket No. AD13-7-000 (Jan. 8, 2014), eLibrary No. 20140108-5184. Almost all new capacity being constructed is either supported by a long-term power purchase agreement, or owned by a utility to serve its load. By one estimate, just two percent of all new generation in 2011 was built by an independent power producer based solely on wholesale market revenues. The Brattle Group, *The Importance of Long-Term Contracting for Facilitating Renewable Energy Project Development* 10 & n.21 (May 7, 2013), http://www.brattle.com/system/publications/pdfs/000/004/927/original/The_Importance_of_Long-Term_Contracting_for_Facilitating_Renewable_Energy_Project_Development_Weiss_Sarro_May_7_2013.pdf?1380317003 (citing Elise Caplan, *What Drives New Generation Construction? An Analysis of the Financial Arrangements Behind New Electric Generation Projects in 2011*, Elec. J. 25, 48-61 (2012). An update for 2013 reached almost identical findings. Just 2.4 percent of new capacity built in 2013 was based solely on organized market revenues. Am. Pub. Power Ass'n, *Power Plants Are Not Built on Spec: 2014 Update* 1 (2014), http://appanet.files.cms-plus.com/PDFs/94_2014_Power_Plant_Study.pdf.

[9] MISO Technical Workshop Comments at 34 ("MISO has found . . . that the revenue from recent shortage events would likely not have a significant impact on [decisions to develop new resources to reduce the severity of future shortages].").

adopt the NOPR's proposal to require shortage pricing for all transient shortage conditions. Instead, it should allow RTOs to have rules that provide operators with discretion *not* to trigger shortage prices for transient conditions that the operators are in the process of resolving. The extent of that discretion and the specific protocols used by operators should be developed by each RTO and its stakeholders based on the region's particular circumstances, including the characteristics of its generation fleet.

B. If the Commission Adopts the NOPR's Proposed Shortage Pricing Requirement, It Should Also Require Each RTO to Demonstrate that its Shortage Pricing Levels Are Just and Reasonable in Such Conditions.

If, despite TAPS' recommendation, the Commission proceeds with the NOPR's proposed shortage pricing reforms, that proposal must be modified so that the final rule ensures shortage prices during transient scarcity events actually reflect the value of generation in those conditions. According to the NOPR, imposing shortage pricing in transient scarcity conditions is appropriate, notwithstanding the fact that it may not provide a useful price signal, "so that resources operating during the shortage are compensated for the value of the service that they provide." NOPR P 49. For some RTOs, however, the NOPR's secondary justification that administratively determined shortage prices reflect the "value of the service" provided by generators in such conditions is wrong.

As explained during the Price Formation Technical Workshops, many of the transient "shortages" that occur in RTO energy and ancillary service markets are theoretical, not real. They appear to result from the fact that the operation of lumpy physical resources in the real world does not perfectly match frictionless theoretical economic models. These short-term technical scarcity events do not pose a significant

reliability risk and can occur when the RTO has ample capacity to meet energy and operating reserve requirements, but cannot meet changes in net load due to difficulties in predicting the output of variable energy resources and ramp limitations within the current dispatch interval.

RTOs that have already chosen to trigger shortage pricing for all scarcity events, regardless of duration, have made extensive additional changes to their tariffs to reflect the much lower value of generation during transient technical shortage conditions by: (1) introducing new products intended to compensate flexible resources and prevent misleading triggering of shortage pricing when the RTO has ample resources available; and/or (2) creating tiered shortage pricing levels to match the severity and reliability risk of specific scarcity events. MISO's new Ramp Capability Product, for example, was developed in part to address short-term Net Load variability, which was triggering scarcity pricing and significantly increasing energy prices for transient periods, even though the variability did not present a significant reliability risk.[10] MISO's new Extended Locational Marginal Price system is likewise designed to reduce the number of transient shortage events caused by ramping limitations.[11] And MISO has implemented a scarcity pricing curve that varies the level of the shortage price, depending on the severity of the shortage.[12]

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[10] *Midcontinent Indep. Sys. Operator, Inc.*, 149 FERC ¶ 61,095, PP 4-5 (2014); MISO Technical Workshop Comments at 22.

[11] MISO Technical Workshop Comments at 37.

[12] During the October Workshop, Todd Ramey (MISO) described MISO's operating reserve demand curves and its effort to take into account differences in system conditions and operating circumstances in setting shortage prices:

> Scarcity pricing is a generic term to refer to administered price curves to set prices. Then the scarcity pricing during those events of short durations in time, in small shortages relative to your requirement,

RTOs that do *not* already trigger shortage pricing for transient scarcity conditions have not needed to make these types of tariff changes. PJM, for example, has not incorporated new products into its markets to reduce the occurrence of misleading transient scarcity events; nor has it tailored its shortage prices to reflect the lower value of generation during such conditions. Instead, PJM has a single, very high shortage price level for reserves, and a single, very high shortage price level for Energy/Voltage Drops.[13] Like MISO, PJM recognizes that the appropriate shortage pricing level depends on the type of shortage—in its Technical Workshop comments, PJM expressly warned that transient shortage events should *not* be priced at the same level as sustained shortage events[14]—but PJM achieves that goal by triggering its extreme shortage prices only if it

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> are deemed to have very low marginal value impacts to system reliability. So we have adjusted our curves to be reflective of that lower value.

October Workshop Tr. at 43:16-22. Staff Analysis of Shortage Pricing in RTO and ISO Markets, App. 3, *Price Formation in Organized Wholesale Electricity Markets*, Docket No. AD14-14-000 (Oct. 2014), eLibrary No. 20141021-4013 ("Staff Shortage Pricing Analysis"); *Midwest Independent Trans. Sys. Operator, Inc.*, 139 FERC ¶ 61,081 (2012); Filing of the Midwest Independent Transmission System Operator, Inc., to Revise Tariff Provisions Regarding Its Market-Wide and Zonal Operating Reserve Demand Curves, *Midwest Indep. Transmission Sys. Operator, Inc.*, Docket No. ER13-921-000 (Feb. 11, 2013), eLibrary No. 20130211-5177, *approved*, Letter Order (Apr. 23, 2013), eLibrary No. 20130423-3007.

CAISO and NYISO have likewise implemented tiered shortage prices, depending on the severity of the shortage. Staff Shortage Pricing Analysis, App. 1 (CAISO) at 41; App. 4 (NYISO) at 54. ISO New England uses a different approach. However, its methodology—which defines many different types of reserves and sets a different administrative price for each, provides for ISO New England itself to determine the optimal assignment of resources among those reserve categories, and produces different shortage pricing levels depending on which requirement or combination of requirements cannot be met at the time—likewise produces tiered pricing with higher prices for increased shortage severity. *Id.*, App. 2 (ISO New England) at 45-47; *see also* October Workshop Tr. at 13:21-16:14 (Matthew White, ISO New England).

[13] Currently, $850/MWh for Synchronous and Non-Synchronous Reserves, and $2,700/MWh for Voltage Drops and Energy. *PJM Interconnection, L.L.C.*, 139 FERC ¶ 61,057 (2012) (establishing reserve price caps phased in over four years); *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,017 at P 3 n.8 (2015). *Compare id. with* Staff Shortage Pricing Analysis, App. 5. Earlier this year, the Commission approved a second set of reserve prices applicable when PJM procures real-time reserves in excess of its normal reserve requirements. *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,017 (2015). PJM, however, did not propose to change the shortage prices applicable to its normal reserve requirements.

[14] PJM Technical Workshop Comments at 23.

determines that it cannot resolve a technical shortage within a defined period, typically at least an hour.[15]

Whether an RTO's administratively determined shortage pricing is just and reasonable depends on the interaction of both the level of those prices *and* the RTO's protocols for determining when those shortage prices apply; indeed, the NOPR itself recognizes (P 49) that existing RTO mathematical models and administratively determined shortage pricing levels may need to be changed to accommodate the NOPR's proposed shortage pricing directive. Given the substantial variation among the RTOs as to how shortage pricing levels and triggers have been designed, requiring all RTOs to trigger shortage pricing for all transient scarcity events, without also assuring that each RTO's shortage pricing levels are appropriate for such conditions, is unjust and unreasonable; and it is contrary to the NOPR's stated justification for triggering shortage pricing in transient scarcity events "so that resources operating during the shortage are compensated for the value of the service that they provide" (NOPR P 49).

Therefore, as part of their compliance with any final rule requiring that shortage prices be triggered for all shortages lasting at least one dispatch interval, each RTO should also be directed either to propose new shortage prices for transient scarcity events that do not exceed the value of the incremental benefit (if any) provided by an additional megawatt in those circumstances, or to demonstrate that the RTO's existing shortage prices applicable in such circumstances already meet that standard.

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[15] PJM Technical Workshop Comments at 22.

C. The NOPR's Proposed Compliance and Effective Date Deadlines for Shortage Pricing Reform Should Be Modified.

Because the compliance filings for the NOPR's shortage pricing proposal should be expanded to include shortage pricing *levels*, as well as *triggers*, the across-the-board four-month compliance deadline proposed in the NOPR is too short. In the RTO regions that do not already trigger shortage pricing for transient scarcity events, the development of new administratively determined shortage prices to apply in those conditions will almost certainly take longer. If those regions determine that new market products should also be introduced to compensate flexible resources and to avoid triggering shortage pricing for technical shortages that actually pose no significant risk to reliability, even more time may be needed for stakeholder processes, market design changes, and implementation. The Commission should therefore work with individual RTOs to determine reasonable compliance deadlines, taking into consideration the characteristics of each RTO's markets and the extent of the market and tariff changes needed to comply with the final rule's directives.

Further, the NOPR's proposal that each RTO's shortage pricing changes must be effective within four months of the RTO's compliance filing is improper. Given the complexity of shortage pricing systems, piecemeal changes are inappropriate; and implementation of an RTO's shortage pricing proposal, prior to Commission approval of all related elements of that shortage pricing system, risks unjust and unreasonable rates, as well as the need to retroactively re-settle markets, should the Commission determine that parts of an RTO's compliance proposal must be modified. Instead, consistent with the approach that the Commission used with respect to the shortage pricing systems established to comply with Order No. 719, the NOPR should be modified to provide that

tariff changes made in response to the final rule's shortage pricing directives will be not be made effective until the Commission has approved the RTO's compliance filing.[16] As it did in the Order No. 719 compliance process, the Commission should also work with each RTO to identify additional time needed to fully implement the Commission's compliance decision, which may require changes to software, start-up testing, and related training.[17]

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[16] *See, e.g., PJM Interconnection, L.L.C.*, 139 FERC ¶ 61,057, P 1 (2012) (accepting PJM's June 18, 2010 shortage pricing compliance filing, "subject to conditions, to become effective as of the date of this order.").

[17] *See, e.g., id.* P 1 & n.2 ("With respect to implementation, PJM states, and we acknowledge, that the software necessary to implement PJM's shortage pricing revisions will require start-up testing and related training prior to its full implementation—a process, it is estimated, that may require six months to complete. Accordingly, we direct PJM to notify the Commission, on an informational basis, within 14 days prior to implementation of the authorizations issued in this order.").

CONCLUSION

For the reasons discussed above, the Commission should adopt a final rule consistent with TAPS' comments.

Respectfully submitted,

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