UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.	)))	Docket No. ER20-2573-000

ANSWER AND MOTION FOR LEAVE TO ANSWER
OF THE INDEPENDENT MARKET MONITOR FOR PJM

Pursuant to Rules 212 and 213 of the Commission's Rules and Regulations,[1] Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor ("Market Monitor") for PJM Interconnection, L.L.C. ("PJM"),[2] submits this answer to the answer of PJM filed September 10, 2020 ("September 10th Answer"). Consideration of PJM's compliance filing to implement fast-start pricing rules has been held in abeyance to allow PJM time to resolve the "pricing and dispatch misalignment problem, as identified in the record."[3]

On July 31, 2020, PJM filed in response to the Commission's directive that PJM resolve misalignment issues with dispatch and settlements in PJM's Real-Time Energy Market ("July 31st Filing").[4] The July 31st Filing simply fails to solve the problem. The September 10th Answer attempts to minimize this failure and mischaracterizes the Market Monitor's objections.

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1 18 CFR §§ 385.212 & 385.213 (2019).

2 Capitalized terms used herein and not otherwise defined have the meaning used in the PJM Open Access Transmission Tariff ("OATT"), the PJM Operating Agreement ("OA") or the PJM Reliability Assurance Agreement ("RAA").

3 *See PJM Interconnection, L.L.C.*, 170 FERC ¶ 61,018 (2020) ("Abeyance Order") at PP 30–32.

4 *Id.*

This answer corrects the confusion created by the September 10th Answer about the changes necessary to solve the dispatch misalignment problem and the reasons that the Market Monitor opposes implementing only the proposed short term changes. The approach in the July 31st Filing creates new problems and has not been shown to be just and reasonable. The September 10th Answer does not refute any of the substantive issues raised by the Market Monitor regarding the disconnect between dispatch instructions and pricing created by PJM's short term proposal. There is a known and available approach that avoids creating this disconnect. PJM appears to understand and agree that this approach is the goal, but PJM prefers to put in place a short term approach that actually significantly exacerbates the disconnect rather than wait for the relatively short time required to address and resolve the issue. The July 31st Filing should be rejected and the fast start pricing proceeding should remain in abeyance until PJM files a proposal that creates a fully aligned five minute dispatch period and pricing period.

I. ANSWER

A. The Proposal in the July 31st Filing is Not Just and Reasonable.

The Market Monitor explained in the August 21st Protest (at 3) why the July 31st Filing is not just and reasonable. Under the July 31st Filing, PJM would pay generators and other resources and charge load (settle) each five minute interval using prices based on the dispatch instructions that were sent for the preceding five minute interval. In other words, prices would lag dispatch instructions by approximately five minutes.[5] There is no reason to permit this disconnect to occur. The result is to provide incentives to generators that are not consistent with following dispatch. The outcome is inefficient and inconsistent with the

[5] The term generators is used in this filing because generators are the predominant type of resource at present, but it should be interpreted to include all resources that respond to and are paid based on real time price signals, including storage resources and demand side resources.

competitive market goal of PJM giving price signals to resources that match the PJM dispatch. The outcome is not just and reasonable. The July 31st Filing should be rejected.

As the September 10th Answer (at 3) explains, the issue in this proceeding is not whether the Market Monitor's proposal is preferable. The issue in this proceeding is whether the limited July 31st Filing is just and reasonable. The purpose of the Market Monitor's August 21st Protest was to provide evidence that the July 31st Filing is not just and reasonable. The September 10th Answer has not and can not show that the evidence in the August 21st Protest is incorrect. PJM has not met its Section 205 burden in the first instance.

The July 31st Filing received unanimous stakeholder support based on PJM's arguments that the proposal would satisfy the Commission's concerns raised in the fast start pricing Abeyance Order. The July 31st Filing does not address the Commission's Abeyance Order. PJM has not and can not argue that the July 31st Filing resolves the misalignment between five minute dispatch and pricing. The July 31st Filing and the September 10th Answer argue for an unduly narrow and illogical reading of the Abeyance Order. PJM has failed to establish that its short term changes are just and reasonable. PJM's narrow reading of the issues raised in the Abeyance Order has led to a proposal that creates new problems in the misalignment of five minute dispatch and pricing. Not only does PJM's filing not resolve the issues raised in the Abeyance Order, it creates new issues. For these reasons, PJM has not and cannot meet its Section 205 burden.

B. The September 10th Answer Ignores the Need for Resources to be Paid Consistent with the Dispatch Signal.

The July 31st Filing attempts to treat the various software and process changes required to align PJM's real-time dispatch and pricing as separate issues when there is only one issue. Alignment means that the dispatch interval and the pricing interval are the same five minute interval. Alignment means that the prices sent to generators are consistent with the dispatch instructions sent to generators.

The September 10th Answer (at 13) argues that the dispatch target time defines the dispatch interval that needs to be aligned with the pricing interval, regardless of whether that dispatch signal has been replaced prior to the interval. PJM wants to send a dispatch signal ten to fourteen minutes prior to the target time, but price every five minutes based on a dispatch signal that has been replaced. The result is misalignment between dispatch and pricing and not alignment. Alignment is achieved when resources produce energy based on prices that match the dispatch signal for the five minute interval when the energy is produced.

This alignment can be achieved only by reducing the time between sending the dispatch signal and the target time at which generators are expected to reach the target dispatch. This is called the ramp time. Alignment between pricing and dispatch cannot be achieved unless PJM reduces the RT SCED ramp time from ten minutes to five minutes.

The September 10^{th} Answer notes correctly (at 13) that resources are continually ramped up and down to respond to dynamic market conditions. The fact that PJM does not directly link those dynamic dispatch instructions to the prices paid to the resources responding to the dispatch instructions is the core problem. With a five minute RT SCED ramp time, dispatch instructions would also be closer to real-time conditions, and therefore more consistent with dynamic market conditions.

C. Evidence Shows That the Short Term Changes Will Lead to Less, Not Greater Alignment

The Market Monitor analyzed the extent to which dispatch instructions from approved RT SCED solutions are reflected in concurrent prices in the PJM Real-Time Energy Market under the status quo process, and under PJM's short term proposal. For each RT SCED solution that was used in the Locational Price Calculator ("LPC") to calculate LMPs, the Market Monitor compared the start and end times when the dispatch instructions from the RT SCED solution were effective with the start and end times when the corresponding prices applied. The start time for a dispatch instruction is the time when PJM approves the RT SCED solution and sends the dispatch instructions to resources. The end time for a dispatch instruction is the time when the next RT SCED solution is approved. Dispatch and pricing would be perfectly aligned if the start and end times of the dispatch instructions from an approved RT SCED solution matched the start and end times of the LPC pricing interval that used the same RT SCED solution.

Table 1 shows the average duration of the times when the dispatch instructions aligned with prices, based on the start and end times of dispatch instructions and prices using the same RT SCED solution, in the first eight months of 2020. The three rows represent the three different rules for RT SCED execution frequency applied by PJM during that period. Currently, PJM uses the latest approved RT SCED solution available at the time of LPC execution to calculate prices for the current five minute pricing interval, regardless of the RT SCED target time.

The average duration of alignment improved from 3 minutes 11 seconds to 3 minutes 37 seconds as the frequency of automatic RT SCED execution moved to five minutes. Under the current approach, prices were aligned with the dispatch instructions only 69.6 percent of the time. This is far from the goal of 100 percent alignment between five minute dispatch instructions and prices. This means that prices are not aligned with or consistent with the dispatch almost a third of the time.

Table 1 Dispatch instructions reflected in prices: January through August, 2020.

		Status Quo		PJM Short Term Proposal	
Period	RT SCED Automatic Execution Frequency	Dispatch Duration Reflected in Prices (Minutes:Seconds)	Percent Dispatch Duration Reflected in Prices	Dispatch Duration Reflected in Prices (Minutes:Seconds)	Percent Dispatch Duration Reflected in Prices
Jan 1, 2020 - Feb 23, 2020	Every 3 minutes	03:11	67.9%	01:15	17.9%
Feb 24, 2020 - Jun 22, 2020	Every 4 minutes	03:27	67.2%	01:27	24.1%
Jun 23, 2020 - Aug 31, 2020	Every 5 minutes	03:37	69.6%	00:37	9.3%

Using the same PJM approved RT SCED solution data for the first eight months of 2020, the Market Monitor applied the proposed logic from the July 31st Filing to determine the alignment between prices and dispatch that would result.

Under the proposed logic from the July 31st Filing, the alignment between prices and dispatch would decrease dramatically. Table 1 shows that the average duration of alignment would fall to 37 seconds. This means that prices would not be not aligned with or consistent with the dispatch more than 90 percent of the time. The analysis shows that the

July 31st Filing would create a near complete disconnect between dispatch instructions and pricing. The proposed logic of the July 31st Filing would make the alignment worse rather than better.

The July 31st Filing would make the alignment worse because the proposal would require prices to be based on an RT SCED dispatch that is almost always for the wrong interval. The dispatch target will be 10 minutes ahead. Prices will be applied to each five minute interval but will not be based on the current dispatch. Prices for the current interval will almost never be based on the current dispatch instructions. [6]

This disconnect between prices and dispatch would further erode the incentive for resources to follow dispatch instructions.[7]

D. The September 10th Answer Demonstrates a Reluctance to Resolve the Dispatch and Pricing Misalignment that Does Not Justify the July 31st Filing.

The September 10th Answer (at 8 to 12) goes to considerable lengths to explain why PJM is not ready to make some of the changes now, that the Market Monitor proposed and PJM is considering in its long term plan for RT SCED.[8] None of the explanations provide support for the July 31st Filing and none explain how the PJM energy market would benefit from the July 31st Filing.

The long term plan would benefit the PJM energy market. Of the various elements of the long term plan, shifting to a five minute ramp time in RT SCED is the critical missing

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6 *See* August 21st Protest at 10–11.

7 All five minute uplift payments would suffer the same disconnect. With fast start pricing, this disconnect would result in a failure of the dispatch differential lost opportunity cost (LOC) to provide correct incentives for resources to follow dispatch instructions. *Id.* at 26–31.

8 The Market Monitor's proposal was largely a result of a joint effort with PJM until PJM withdrew their support. *See* PJM "Status Update 5 Minute Dispatch and Pricing," presented at the March 31, 2020 special session of the Markets Implementation Committee, which can be accessed at <*https://www.pjm.com/-/media/committees-groups/committees/mic/2020/20200331-special-five/20200331-item-03-timeline.ashx*>.

component to achieving dispatch and pricing alignment. The September 10th Filing fails to provide a reason why PJM cannot reduce the RT SCED ramp time to five minutes. Other components of the long term plan could be phased in over time, like the automatic case approval and use of the prior RT SCED case as a dispatch starting point. Fully adopting software changes to match another RTO's process is not required, though other RTOs' processes provide useful models. Implementing fast start pricing, and any associated five minute uplift payments, without also shortening the ramp time to five minutes will result in a failure to realize the asserted benefits of fast start pricing.[9]

E. The Market Monitor's Protest Correctly Defines Dispatch and Pricing Alignment.

The September 10th Answer (at 13) raises the issue of overlapping dispatch signals, but fails to address it. Dispatch signals do overlap. PJM routinely sends a new dispatch signal to resources before the ramp time of the first dispatch instruction is complete. As a consequence, alignment between dispatch and pricing cannot be achieved until dispatch periods no longer overlap. This why the July 31st Filing cannot achieve alignment without also shortening the RT SCED ramp time from ten to five minutes.

The overlapping dispatch signal discussion is one of many ways the September 10th Answer carefully avoids the only real issue in this proceeding: whether the July 31st Filing achieves alignment between the dispatch signals resources follow and the prices paid to resources for following those signals. The September 10th Filing never asserts that it achieves such alignment. Without achieving that alignment, prices do not accurately reflect the marginal cost of serving load, and resources are not compensated in a manner consistent with the incentive to follow dispatch instructions.

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9 *See* August 21st Protest at 26–31.

II. MOTION FOR LEAVE TO ANSWER

The Commission's Rules of Practice and Procedure, 18 CFR § 385.213(a)(2), do not permit answers to answers or protests unless otherwise ordered by the decisional authority. The Commission has made exceptions, however, where an answer clarifies the issues or assists in creating a complete record.[10] In this answer, the Market Monitor provides the Commission with information useful to the Commission's decision making process and which provides a more complete record. Accordingly, the Market Monitor respectfully requests that this answer be permitted.

III. CONCLUSION

The Market Monitor respectfully requests that the Commission afford due consideration to this answer and reject the July 31, 2020, filing in this proceeding.

Respectfully submitted,

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10 *See, e.g., PJM Interconnection, L.L.C., 119 FERC ¶61,318 at P 36 (2007)* (accepted answer to answer that "provided information that assisted … decision-making process"); *California Independent System Operator Corporation*, 110 FERC ¶ 61,007 (2005) (answer to answer permitted to assist Commission in decision-making process); *New Power Company v. PJM Interconnection, L.L.C.*, 98 FERC ¶ 61,208 (2002) (answer accepted to provide new factual and legal material to assist the Commission in decision-making process); *N.Y. Independent System Operator, Inc.*, 121 FERC ¶61,112 at P 4 (2007) (answer to protest accepted because it provided information that assisted the Commission in its decision-making process).

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Dated: September 25, 2020

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 Eagleville, Pennsylvania,
this 25th day of September, 2020.

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