



three pivotal supplier (TPS) test and in the establishment of fuel cost policies to support the levels of cost offers.<sup>5</sup>

The June 17<sup>th</sup> Order indicates that the Commission appreciates the need to revise PJM market power mitigation policy in accommodating hourly offer flexibility. The deficiencies identified in the June 17<sup>th</sup> Order include the insufficiency of PJM's proposal in revising market power mitigation to address the ability of a generator to evade local market power mitigation, and a lack of rigor in the rules to prevent cost offers from exceeding competitive levels. The August 16<sup>th</sup> Filing continues to fail to adequately address these issues.

PJM's filing raises fundamental questions about how to maintain the competitiveness of the PJM Energy Market. In the compliance filing, PJM is asking the Commission to make significant changes to OATT rules governing the way in which market power is identified and mitigated. Apart from the fact that PJM's request is procedurally deficient, the result of such changes would be to weaken existing protections against market power and provide a safe harbor for offers that cannot be demonstrated to be competitive and that can therefore result in the exercise of market power in the PJM Energy Market. The result of such changes would be that market participants and stakeholders could not rely on the review of participants' offers to ensure competitive outcomes in the PJM Energy Market. PJM's proposed changes to the review process for energy offers should be rejected.

The August 16<sup>th</sup> Filing was submitted in response to the order issued in this proceeding on June 17, 2016 ("June 17<sup>th</sup> Order"), which found PJM's initial proposal "deficient because it (1) does not include in PJM's Tariff and Operating Agreement the proposed rules for the offer parameters that are subject to flexible hourly offers and the

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<sup>5</sup> *Market-Based Rates for Wholesale Sales of Electric Energy, Capacity and Ancillary Services by Public Utilities*, Order No. 697-A, FERC Stats. & Regs. ¶ 31,268, *clarified*, 124 FERC ¶ 61,055 (2008).

appropriate definitions for various terms, (2) lacks rules pertaining to the mitigation of self-scheduled resources, and (3) lacks provisions for sufficient review of cost-based offers to ensure that—even with increased offer flexibility—resources continue to have the proper incentive to submit accurate cost-based offers.”<sup>6</sup>

To provide for sufficient review of cost-based offers, the Commission specifically directed (at P 63) that PJM include in the tariff “(1) a requirement for market participants to submit fuel cost policies [n103: PJM Manual 15, section 2.3: Fuel Cost Guidelines] that are approved by PJM prior to submission of cost-based offers, and (2) a penalty structure that will be applicable in the event that PJM or the IMM determines that a resource has submitted a cost-based offer that does not comply with Schedule 2 of the Operating Agreement or the Cost Development Guidelines in Manual 15.”

Fuel cost policies define how the cost of fuel is determined and contain necessary information for monitoring the levels of cost-based offers. Fuel cost policies provide assurance to Market Sellers that their cost development practices do not raise market power concerns. The calculation of cost-based offers using costs that exceed short run marginal costs is a market power concern. Sufficient review of cost-based offers requires both validation that fuel cost policies meet required standards and validation that cost-based offers include only short run marginal costs.<sup>7</sup>

The current tariff explicitly defines the roles of the Market Monitor and PJM in the review of cost-based offers.<sup>8</sup> The Market Monitor evaluates cost inputs for market power concerns based on whether the proposed levels are consistent with competitive offers. PJM

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<sup>6</sup> *PJM Interconnection, L.L.C.*, 155 FERC ¶ 61,282 at P 33; *see also* PJM compliance filing, EL15-73-000 (Nov. 20, 2015). The Commission also identified certain other deficiencies in PJM’s proposal. *See* June 17<sup>th</sup> Order at PP 54, 75, 90, 93.

<sup>7</sup> *See Southwest Power Pool*, 152 FERC ¶ 61,226 (2015) at P 68, citing *Southwest Power Pool*, 141 FERC ¶ 61,048 at P 420 and *PJM Interconnection, L.L.C.*, 110 FERC ¶ 61,053, at P 25 (2005).

<sup>8</sup> OATT § 12A; OATT Attachment M § IV.E-1.

evaluates cost inputs for administrative compliance, and does not evaluate levels of costs or cost inputs and does not evaluate market power. The current provisions of Manual 15 have been implemented for years in a manner consistent with the tariff's specifications of roles.<sup>9</sup> The August 16<sup>th</sup> Filing would substantively change the roles of PJM and the Market Monitor in the review of offers for market power in a manner inconsistent with the tariff's specifications of roles. The details of PJM's proposed approach make it clear that the proposed changes would weaken the market power review and therefore weaken competitive markets. If approved, participants will have the ability and incentive to submit inaccurate cost-based offers, inconsistent with the requirement (at P 33) that the tariff provide an incentive for participants to submit accurate cost-based offers.

The Market Monitor has developed tariff language (see Attachment A) that would satisfy the Commission's directives that the review process preserve and enhance the incentives to submit accurate cost-based offers that do not raise market power concerns, does not permit offers from participants whom PJM determines have not complied with the tariff, and provides for penalties when PJM determines that offers do not comply with the tariff or when the Market Monitor determines that offers raise market power concerns. The Market Monitor's proposed language satisfies these directives in a manner fully consistent with the assignment of roles in the review of cost-based offers set forth in the PJM tariff and consistent with how the process has been conducted historically. PJM would conduct its compliance review, according to its process and deadlines and with the Market Monitor's input. PJM approval would allow the Market Seller to submit cost-based offers. The Market Monitoring Unit would conduct its market power review on a complementary timeframe, keeping PJM and Market Sellers apprised of the status of fuel cost policy acceptance. The Market Monitor's acceptance would support monitoring of cost-based offers and it would

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<sup>9</sup> Manual 15: Cost Development Guidelines, Rev. 27 (April 20, 2016) ("Manual 15").

provide the Market Seller assurance that its cost development practices are consistent with competitive behavior.

The August 16<sup>th</sup> Filing should not be approved. Based on the Commission's requirement that improvements to the review process for cost-based energy offers are required, the language proposed by the Market Monitor (Attachment A), which describes a review process that is consistent with the tariff defined roles and with the directives in the June 17<sup>th</sup> Order, should be approved instead, or PJM should be directed to submit revisions consistent with the Market Monitor's proposed language. The Commission should also require PJM to comprehensively address a number of other issues related to market power mitigation and the implementation of offer flexibility.

## **I. BACKGROUND ON FUEL COST POLICY**

### **A. Fuel Cost Policy Review**

The existing process for fuel cost policy review provides that the Market Monitor evaluates fuel cost policies submitted by market participants under PJM Manual 15. Section 2.3 addresses the fuel cost policy requirement.<sup>10</sup> PJM deems the fuel cost policy approved once it has received the Market Monitor's approval.<sup>11</sup> PJM may intervene at the request of a member, but to the best of the Market Monitor's knowledge that has never happened.<sup>12</sup> With the Market Monitor's approval, the fuel cost policy provides a benchmark for monitoring cost-based offers, a required market monitoring function under Attachment M. The accepted fuel cost policy serves as an input to prospective mitigation that ensures the

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<sup>10</sup> See Manual 15 at 9.

<sup>11</sup> See *id.* at 4.

<sup>12</sup> See *id.*

submission of cost-based offers at competitive levels.<sup>13</sup> Agreement between the Market Monitor and the Market Seller on cost calculations, via fuel cost policy review, performs the same function as the market monitors' cost level consultations for developing reference levels in other RTOs.<sup>14</sup> Participating in the Market Monitor's review is a requirement under Section 12A of the OATT. The Market Monitor's review process provides both the Market Seller and the Market Monitor the opportunity to gain assurance that the Market Monitor understands and agrees with the Market Seller's cost-based offer development. This provides certainty to the Market Seller and to the Market Monitor about the absence of market power issues.

### **B. Market Monitor's Approach to Fuel Cost Policy Review**

The increased role of gas fired generation in PJM, the relatively high volatility of gas prices compared to other fuels and the confluence of these factors in the January 2014 Polar Vortex revealed a need for the Market Monitor to raise the standards for fuel cost policy reviews, especially for natural gas policies. The Market Monitor reviewed most cost-based offers for natural gas fired units in early 2014.<sup>15</sup> Some participants did not have fuel cost policies, and fuel cost policies on file did not adequately explain natural gas fuel pricing practices. In January 2014, cost-based offers included natural gas costs higher than any verifiable level for over 300 daily unit offers for over 20 Market Sellers in seven gas market

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<sup>13</sup> This is consistent with the Commission's definition of inputs to prospective mitigation: "We also determine that the MMU may provide the inputs required by the RTO or ISO to conduct prospective mitigation, including determining reference levels, identifying system constraints, cost calculations and the like." *Wholesale Competition in Regions with Organized Markets*, Order No. 719, 125 FERC ¶ 61,071 at P 375 (2008) ("Order No. 719"), *order on reh'g*, Order No. 719-A, 128 FERC ¶ 61,059 at P 128 (2009).

<sup>14</sup> See, e.g., Midcontinent ISO OATT Module D 64.1.4; ISO New England, Market Rule 1, Appendix A § III.A; California ISO Tariff Appendix P § 5.5.3.

<sup>15</sup> See "Market Monitor Report," Monitoring Analytics presentation to the Members Committee (April 21, 2014).

areas of the PJM footprint. The fuel prices exceeded all available conservative benchmarks. Even with additional information supplied by the Market Sellers, the Market Monitor could not validate the cost-based offers.

The Market Monitor initiated an effort to improve the monitoring of fuel costs through fuel cost policies, especially for natural gas fired units, and informed gas fired generation owners. In November 2014, in order to clarify the requirements for fuel cost policies and to respond to requests from market participants, the Market Monitor provided guidelines for the development of fuel cost policies adequate to verify cost-based offers.<sup>16</sup> The guidelines defined the need for verifiable information supporting the fuel cost components, such as the relevant gas price index, trading platform used, and delivery charges and defined the need for descriptions of the component calculations.

In the summer of 2015, the Market Monitor supported the requirement for fuel cost policies to verify hourly offer changes and exceptions to the system offer cap.<sup>17 18</sup> As part of the review process, the Market Monitoring Unit gained additional staff expertise and access to additional data relevant to the natural gas market. In September 2015, the Market

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<sup>16</sup> See "Fuel Cost Policy," Monitoring Analytics presentation to the Markets Implementation Committee (November 7, 2014) <<http://pjm.com/~media/committees-groups/committees/mic/20141107/20141107-item-11-1-fuel-cost-policy.ashx>>.

<sup>17</sup> See "Generator Offer Flexibility," Monitoring Analytics presentation to the Generator Offer Flexibility Senior Task Force (June 29, 2015) <<http://pjm.com/~media/committees-groups/task-forces/gofstf/20150629/20150629-item-02-monitoring-analytics-presentation.ashx>> and "\$1,000 per MWh Offer Caps: MMU Approach" Monitoring Analytics presentation to the Markets and Reliability Committee (August 27, 2015) <<http://pjm.com/~media/committees-groups/committees/mrc/20150827/20150827-item-06-energy-market-offer-caps-imm.ashx>> at 4.

<sup>18</sup> See "\$1,000 per MWh Offer Caps: MMU Approach," Monitoring Analytics presentation to the Markets and Reliability Committee (August 27, 2015) <<http://pjm.com/~media/committees-groups/committees/mrc/20150827/20150827-item-06-energy-market-offer-caps-imm.ashx>> at 4.

Monitor refined the guidelines to clarify the need for Market Sellers to provide algorithmic, verifiable and systematic fuel cost policies.<sup>19</sup>

Algorithmic means that the fuel cost policy must use a set of defined, logical steps. These steps may be as simple as a single number from a contract, a simple average of broker quotes, a simple average of bilateral offers, or the weighted average index price posted on the Intercontinental Exchange trading platform (“ICE”).<sup>20</sup>

Verifiable means that the fuel cost policy must provide a fuel price that can be calculated by the Market Monitor after the fact with the same data available to the generation owner at the time the decision was made and documentation for that data from a public or a private source.

Systematic means that the fuel cost policy must document a standardized method or methods for calculating fuel costs including objective triggers for each method.

Under the Market Monitor’s standards, the Market Seller has the flexibility to vary its method and use the best information available as long as it employs an algorithmic, verifiable and systematic process. Every day, the Market Seller calculates the fuel cost, to the penny, and calculates the energy offer, to the penny, based on that fuel cost. The goal of the fuel cost policy is to permit the Market Seller to define the method that the Market Seller actually uses to calculate its fuel costs every day. Without such a process, the Market Seller would have the ability to take advantage of constrained conditions in the natural gas market. The Market Seller could include an undocumented, overstated fuel cost in its cost-based offers. The overstatement of fuel cost in a cost-based offer is an exercise of market

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<sup>19</sup> See “Fuel Cost Policy Guidelines: Gas Replacement Cost,” Memo to PJM Members (September 24, 2015) <<http://pjm.com/~media/committees-groups/committees/mic/20151007/20151007-item-11-imm-fuel-cost-policy-guidelines.ashx>> and Answer and Motion for Leave to Answer of the Independent Market Monitor for PJM, Docket No. ER16-76-000 (December 3, 2015) at Attachment.

<sup>20</sup> A simple definition of algorithm is: a set of steps that are followed in order to solve a mathematical problem or to complete a computer process. Merriam-Webster.com (accessed Aug. 20, 2016) <<http://merriam-webster.com>>.



power. A fuel cost policy is necessary for the Market Monitoring Unit and for the Commission to be able to assure customers that there is a rigorous offer review process that ensures that energy market prices are competitive.

In anticipation of hourly offer flexibility and an increase to the system offer cap, fuel cost policy submittals substantially increased in late 2015. Fuel cost policy consultations with Market Sellers in 2015 and 2016 provided insight for the Market Monitor and for Market Sellers. It highlighted both the difficulties faced by generators and the generators' desire for the compliance assurance provided by the Market Monitor's acceptance of their fuel cost policy. It also revealed a need for algorithmic, verifiable and systematic fuel cost policies for all market conditions including normal and high demand conditions. Market Sellers regularly face fuel price uncertainty. For natural gas, they must estimate both next day and intraday natural gas prices every day. The exact nature of gas purchasing takes many forms and includes a wide range of counterparties, complicating the objectivity and verifiability of fuel cost estimates. Both the Market Monitoring Unit and PJM Market Sellers learned a great deal about the details of gas purchasing and the quantification of the market value of gas. The new approach to fuel cost policy review required a paradigm shift for both Market Sellers and the Market Monitoring Unit and required significant effort and new ways of thinking about the issues. During this learning process, the Market Monitor critically reexamined the proper approach to fuel cost policies.

The Market Monitor identified opportunities for improvement in fuel cost policies. Market participants frequently face lack of transparency, lack of locational pricing, and illiquidity in the natural gas market at times of high gas demand. Fuel cost policies had not adequately defined the development of fuel costs under these conditions. Fuel cost policies could be developed for these conditions. Market participants had not documented objective methods for developing intraday natural gas costs that represent their realistic price expectations. Market participants preferred to use vague language and safe harbor clauses in the policies rather than defining their systematic fuel cost development process. Fuel cost

policies included cost components not permitted under PJM Market Rules and/or exceeding short run marginal costs.

Based on the complex and sometimes contentious discussions with market participants, the Market Monitor paused some of the interactions with Market Sellers and reviewed and analyzed the information accumulated to that point. This review process in early 2016 included consulting with Market Sellers on recommended practices that remove the potential for the exercise of market power while accurately reflecting the actual practices of Market Sellers and actual gas market conditions. Based on this process and based on requests from market participants for more detailed guidance, the Market Monitor created a fuel cost policy template for natural gas, which it began circulating to Market Sellers in April 2016 and published on June 2, 2016.<sup>21</sup> The template is a framework for the fuel cost policy that includes a variety of options for market participants seeking a method to document or improve its practices. A constructive fuel cost policy review process continues with Market Sellers, and many policies have been accepted by the Market Monitor. The Market Monitor also developed and posted fuel cost policy templates for all fuel types.

With the new policy templates, review processes accelerated until PJM initiated a proposed change to the fuel cost policy review process set forth in Sections 1.8 and 2.3 of PJM Manual 15 in May 2016.<sup>22</sup> The prospect of a new review process by PJM led some Market Sellers to delay discussion with the Market Monitor. PJM advised generators and the Market Monitor that it did not support the rigor of the Market Monitor's approach and

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<sup>21</sup> See "Item 18 – IMM Natural Gas Cost Policy Template," Monitoring Analytics presentation to Markets Implementation Committee (June 8, 2016) <<http://pjm.com/~media/committees-groups/committees/mic/20160608/20160608-item-18-imm-natural-gas-cost-policy-template.ashx>> and Cost Policy Templates <<http://www.monitoringanalytics.com/tools/tools.shtml>> .

<sup>22</sup> See "Draft Manual 15, Revision 27," PJM presentation to the Market Implementation Committee (May 11, 2016) <<http://pjm.com/~media/committees-groups/committees/mic/20160511/20160511-item-05b-draft-m15-v27.ashx>>, accessed May 13, 2016.

that PJM would require a lower standard when it assumed a more active role in the approval process by changing Manual 15.

## II. ARGUMENT

### **A. Compliance with the June 17<sup>th</sup> Order Requires Both Sufficient Compliance Review and Sufficient Market Power Review of Fuel Cost Policies and Cost-based Offers.**

The June 17<sup>th</sup> Order requires (at P 33) inclusion of “provisions for sufficient review of cost-based offers to ensure that ... resources continue to have the proper incentive to submit accurate cost-based offers.” The order specifically directs (at P 63) that PJM include in the tariff “(1) a requirement for market participants to submit fuel cost policies [n103: PJM Manual 15, section 2.3: Fuel Cost Guidelines] that are approved by PJM prior to submission of cost-based offers, and (2) a penalty structure that will be applicable in the event that PJM or the IMM determines that a resource has submitted a cost-based offer that does not comply with Schedule 2 of the Operating Agreement or the Cost Development Guidelines in Manual 15.”

The August 16<sup>th</sup> filing includes a process for compliance with the Commission’s directive (at P 63) for PJM to ensure that all Market Sellers have fuel cost policies to support their cost-based offers. It also proposes a penalty structure to strengthen the incentive for compliance. However, if the goal is to ensure accuracy (the focus of the Commission’s directive at Paragraph 33) and to provide a meaningful benchmark for the IMM’s determination that cost-based offers comply with the Market Rules, it is also necessary to preserve the Market Monitor’s role in market power reviews and to tie the consequences for noncompliance to that review. The August 16<sup>th</sup> Filing does not do that. This failure is a critical flaw because the Market Monitor’s review of fuel cost policies for market power issues is the key incentive for participants to develop accurate fuel cost policies and therefore accurate cost-based offers.

The current process for fuel cost policy review delineates roles for the review of cost inputs to the Market Monitor and PJM consistent with these directives. No change to the

current delineation of roles is needed in order to comply with the directives in June 17<sup>th</sup> Order. PJM's August 16<sup>th</sup> Filing would significantly change the roles and therefore weaken the review process that is required for competitive markets. The Market Monitor supports proposals that could enhance the effectiveness and efficiency of the fuel cost policy review process. The Market Monitor includes such proposals in the Market Monitor's proposed tariff language (Attachment A).

**B. The August 16<sup>th</sup> Filing Proposes an Unnecessary Change to PJM and the Market Monitor's Current Roles in the Review of Fuel Cost Policies and Cost-Based Offers.**

**1. Description of the Current Roles as Defined in OATT § 12A and Attachment M.**

Under the provisions in Section 12A of the OATT, PJM implements the market rules and makes determinations on compliance with the market rules. PJM accepts offers and applies the mitigation program. The Market Monitor's role, under Section 12A and Attachment M and its Appendix, is to review the level of offers and the documentation supporting such offers to determine whether they raise market power concerns. Section 12A prohibits PJM from any evaluation of market power concerns, including evaluation of the level of costs. Review of the sufficiency of fuel cost policies cannot be done without evaluation of the levels of costs and the potential to exercise market power under the policy.

***a. PJM's Role in Tariff Implementation and Compliance Review.***

PJM's current role in the review of cost inputs is consistent with the directives in the June 17<sup>th</sup> Order and is consistent with current applicable tariff rules.

Section 12A of the OATT states:

The Office of the Interconnection has the exclusive authority to implement the PJM Market Rules, except with respect to Attachment M and the Attachment M-Appendix and related provisions in the PJM Manuals. The Market Monitoring Unit has the exclusive authority to perform the functions set forth in Attachment M and the Attachment M-Appendix.

PJM has the exclusive responsibility to implement market rules and does not share this responsibility with the Market Monitor. However, PJM's determinations on compliance with the market rules explicitly do not include the market monitoring sections of the tariff (Attachment M and Attachment M-Appendix), which provides for determinations on whether offers raise market power concerns. Section 12A of the OATT delineates PJM's role in detail:

The Office of the Interconnection determines whether an offer, bid, components of an offer or bid, or decision not to offer a committed resource complies with the PJM Market Rules. The Office of the Interconnection has the final authority to determine whether an offer, bid or decision not to offer a committed resource complies with the PJM Market Rules. The Office of the Interconnection may accept an offer, bid or decision not to offer a committed resource regardless of whether the Market Monitoring Unit has made a finding that such conduct raises market power concerns, unless the Commission issues an order determining that the offer or bid must be rejected prior to the clearing of the relevant RPM Auction.

The Office of the Interconnection does not make determinations about market power, including, but not limited to, whether the level or value of inputs or a decision not to offer a committed resource involves the potential exercise of market power. Acceptance or rejection of an offer or bid by the Office of the Interconnection does not include an evaluation of whether such offer or bid represents a potential exercise of market power.

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The Office of the Interconnection has the exclusive authority to administer the Tariff. The Office of the Interconnection has the exclusive authority to implement the PJM Market Rules, except with respect to Attachment M and the Attachment M-Appendix and related provisions in the PJM Manuals. The Market Monitoring Unit has the exclusive authority to perform the functions set forth in Attachment M and the Attachment M-Appendix. The Office of the Interconnection shall oversee compliance with PJM Market Rules and may take action on compliance issues and/or request that the Market Monitoring Unit take action on compliance issues.

PJM does not determine participants' offers. Section 12A specifically reserves decisions on offer levels and responsibility for such decisions to market participants:

A market participant may submit any offer or bid that it chooses or make a decision not to offer a committed resource, provided that the Office of the Interconnection determines that: (i) the market participant has participated in the review process conducted by the Market Monitoring Unit (without regard to whether an agreement is obtained) if required by the Tariff; (ii) offer is no higher, in the case of seller market power, or lower, in the case of buyer side market power, than the level to which the market participant has committed or agreed in the course of its participation in such review process; and (iii) the offer is compliant with the Tariff and PJM Manuals. The market participant assumes exclusive responsibility for any adverse findings at the Commission related to its offer.

Market participants must participate in the market power review process with the Market Monitor in good faith. In that process, participants are advised of the Market Monitor's position on a proposed offer level or the proposed process for developing cost input values. The Market Monitoring Unit advises market participants about its position on market power concerns in advance, so that market participants can take that position into account as they make decisions on their offers. Determinations on market power made by the Market Monitor do not bind a participant to an offer unless a participant agrees with and adopts the Market Monitor's approach. A participant may choose to submit an offer at a level that raises market power concerns. The Market Monitor must refer such behavior to the Commission. Since the review process began in 1999, agreement has been the norm and disagreement rare.

Section 12A of the OATT reserves to PJM exclusive authority to ensure compliance with the market rules. If PJM finds noncompliance, it can take direct actions to implement those findings. PJM's role does not include duplicating the Market Monitor's market power review, which primarily involves deciding whether an offer is noncompetitive (too high or too low) and the adequacy of cost documentation. PJM can reject offers that do not comply

with the market rules. PJM cannot reject offers because PJM thinks that the offer is too high or too low.<sup>23</sup>

Attachment M to the OATT provides that the Market Monitor may advise PJM when PJM is reviewing compliance with the tariff.<sup>24</sup> The Market Monitor may also advise PJM on market design issues.<sup>25</sup> PJM is free to accept or reject such advice. This advice is related to PJM's role and is not related to the Market Monitor's market power review role.

***b. The Market Monitor's Role in Market Power Review.***

The Market Monitor's current role in the review of cost inputs is consistent with the directives in the June 17<sup>th</sup> Order and is consistent with current applicable tariff rules, including Section 12A of the OATT and Attachment M to the OATT and Attachment M–Appendix.

Section 12A and Attachment M assign to the Market Monitor responsibility for determinations about whether the level of offers or cost inputs raise market power concerns.<sup>26</sup> Attachment M defines the structure of review processes involving the Market

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<sup>23</sup> See OATT § 12A (“The Office of the Interconnection does not make determinations about market power, including, but not limited to, whether the level or value of inputs or a decision not to offer a committed resource involves the potential exercise of market power. Acceptance or rejection of an offer or bid by the Office of the Interconnection does not include an evaluation of whether such offer or bid represents a potential exercise of market power.”).

<sup>24</sup> See OATT Attachment M § IV.C (“The Market Monitoring Unit shall monitor PJM's implementation of the PJM Market Rules and operation of the PJM Markets. If the Market Monitoring Unit disagrees with the implementation of the PJM Market Rules or the operation of the PJM Markets, the Market Monitoring Unit may so advise PJM. Excepting matters governed by Section IV.I, if the disagreement cannot be resolved informally, the Market Monitoring Unit may inform the Commission, Authorized Government Agencies, or the PJM members. The Market Monitoring Unit shall have no authority to direct PJM to modify its operation of the PJM Markets or implementation of the PJM Market Rules.”).

<sup>25</sup> See OATT Attachment M § IV.C. (“The Market Monitoring Unit shall monitor PJM's implementation of the PJM Market Rules and operation of the PJM Markets. If the Market Monitoring Unit disagrees with the implementation of the PJM Market Rules or the operation of the PJM Markets, the Market Monitoring Unit may so advise PJM.”).

<sup>26</sup> See OATT Attachment M § IV.E-1.

Monitor and participants to try to reach agreement on cost input values, and provides for the Market Monitor to bring disputes with participants to the Commission.

The Market Monitor's role is specified in Section IV.E-1 of Attachment M:

Determinations about market power are the responsibility of the Market Monitoring Unit under Attachment M and Attachment M-Appendix. The Market Monitoring Unit shall review all proposed sell offers for a determination of whether they raise market power concerns. The Market Monitoring Unit shall determine whether the level of offer or cost inputs raises market power concerns. The Attachment M-Appendix sets forth the Market Monitoring Unit's role in evaluating these offer or cost inputs. The Market Monitoring Unit and market participants shall, in accordance with the applicable procedures and as set forth elsewhere in the Tariff, attempt to come to agreement about the level or value of offers or cost inputs. The Market Monitoring Unit shall make a determination about whether offer or cost inputs or a decision not to offer a committed resource is physical or economic withholding or otherwise involves a potential exercise of market power. In the event that a market participant determines to use an offer or cost input at a level or value that the Market Monitoring Unit has found to involve a potential exercise of market power, the Market Monitoring Unit may file a petition or initiate other regulatory proceedings addressing the issue. If the potential exercise of market power is related to a Sell Offer submitted in an RPM Auction, the Market Monitoring Unit may file a complaint with the Commission addressing the issue. If, at the time of filing, market prices that have been settled and posted could be impacted by the subject of the complaint, the Market Monitoring Unit shall refrain from requesting relief from the Commission that would upset such market prices and shall limit the requested relief to appropriate restitution and/or penalties from the implicated market participant or participants.

The Market Monitor's role is to review the level of offers and the documentation supporting such offers to determine whether they raise market power concerns. As stated in Section 12A of the OATT, the Market Monitor "shall determine whether the level of offer or cost inputs raises market power concerns." The Market Monitor follows a required and defined review process with participants to reach a conclusion as to whether the fuel cost policy raises market power concerns because it will not produce accurate offers and it will



not support the verification of the basis for offers, which it communicates both to the participant and to PJM. The defined review process includes the ability of the Market Monitor to obtain data from participants and documentation sufficient to support a determination on market power concerns and to engage in dialogue with participants as part of reaching a conclusion. If the Market Monitor believes that an offer or a cost input may result in the exercise of market power it can refer participants' market misconduct to the Office of Enforcement, file a complaint against a participant or petition the Commission to resolve uncertainty.<sup>27</sup>

PJM has no role in the Market Monitor's market power review. PJM has no authority to reverse or alter the Market Monitor Unit's independent determination of its position on offer levels that raise market power concerns. The tariff specifically excludes PJM from any such role.

The Market Monitor has the tariff defined obligation as well as the demonstrated purpose, incentive, and capability to address market power concerns. The review of fuel cost policies is not materially different, for example, from the Market Monitor's market power reviews of Avoided Cost Rates (ACR) for use in the Reliability Pricing Model (RPM).<sup>28</sup> That process has worked effectively since 2007 to ensure competitive offers despite generator complaints to PJM early in the process and PJM's occasional attempts to intervene on generators' behalf.

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<sup>27</sup> See OATT Attachment M §§ IV.E-1 & IV.I.1. Hereafter, the term "referral" may indicate any of a confidential referral of a market behavior to the Office of Enforcement, the initiation of a complaint proceeding under 18 CFR § 385.206 of the Federal Power Act, the submittal of petition for declaratory order under 18 CFR § 385.; or a request that the Commission initiate its own investigation under Section 206 of the Federal Power Act.

<sup>28</sup> See OATT Attachment DD § 6; Attachment M-Appendix § II.E.

The Market Monitor's review of fuel cost policies has resulted in substantial progress in the development of meaningful fuel cost policies across all fuel types despite initial resistance and despite confusion about the nature of the process introduced by PJM.

The Market Monitor has, for the entire history of PJM markets, prior to the current disagreement, reviewed fuel cost policies without PJM involvement and without PJM expressing any interest in fuel cost policies. PJM's interest in displacing the Market Monitoring Unit from its historic and tariff defined role has only occurred after the Market Monitor determined that the standards for the review of fuel cost policies needed to be tightened in order to prevent the exercise of market power and after generation owners complained to PJM. PJM's attempts to intervene on behalf of participants in that process, including the flawed proposal included in the August 16<sup>th</sup> Filing, has put at risk the progress achieved to date on the development of valid fuel cost policies.

## **2. Expansion of PJM Review Into the Market Monitor's Functions.**

PJM proposes revisions "to ensure accuracy of cost-based adjustments to offers by establishing a process for PJM review of Market Seller fuel procurement policies." PJM's revisions to Schedule 2 propose criteria for PJM's review that concern review of the substance of the fuel cost policy, the reasonableness of cost calculations, sufficiency of cost documentation, the levels of cost components, and the level of the cost-based offer that will result from application of the fuel cost policy. PJM's August 16<sup>th</sup> Filing defines these criteria such that PJM would evaluate criteria that properly concern market power review, a function defined in the Market Monitoring Plan and a function inconsistent with PJM's tariff defined role. The proposal simply ignores and would violate the current tariff provisions on roles (OATT § 12A, Attachment M § IV.E-1). PJM's August 16<sup>th</sup> Filing proposes to change the definition of the Market Monitor's and PJM's roles in Manual 15 so

that they would be in direct conflict with tariff provisions on roles.<sup>29</sup> In other words, PJM has proposed to take over the market monitoring role from the Market Monitor and to do market monitoring less effectively than the Market Monitor.

Specifically, PJM proposes removal of the Market Monitor's independent evaluation of fuel cost policies in the approval process. Since the August 16<sup>th</sup> Filing, PJM has clarified that it intends to implement its tariff changes with what PJM terms a joint review led by PJM.<sup>30</sup> The proposed joint review under PJM control would place the Market Monitor under the direction and supervision of PJM in performing the Market Monitor's functions under the tariff, which directly violates the independence provisions in Attachment M to the OATT, the Market Monitoring Plan.<sup>31</sup> For example, in response to a stakeholder inquiry in the August 25, 2016, Markets and Reliability Committee meeting, PJM stated that the Market Monitor would not have the authority to make independent information requests of Market Sellers as part of the fuel cost policy review process.<sup>32</sup> PJM does not have the authority under the tariff to limit the Market Monitor's requests for information to market participants. The reason for the tariff provisions about access to information is that the Market Monitor cannot conduct a meaningful market power review if it cannot get the information that it needs.

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<sup>29</sup> PJM has proposed conforming changes to Manual 15 in the stakeholder process. See PJM presentations at the Market Implementation Committee from May through September 2016, which can be accessed at: <http://pjm.com/committees-and-groups/committees/mic.aspx>.

<sup>30</sup> See "Item 4B–Draft Manual 15 Revisions–Fuel Cost Policy–Presentation," PJM Presentation to the Markets and Reliability Committee (August 25, 2016) at 10, which can be accessed at: <http://pjm.com/~media/committees-groups/committees/mrc/20160825/20160825-item-04b-draft-m15-revisions-fuel-cost-policy-presentation.ashx>.

<sup>31</sup> OATT Attachment M § III.C.

<sup>32</sup> In the September 13, 2016, Market Implementation Committee meeting, PJM reaffirmed that the MMU could not make independent information requests under PJM's proposed process.

PJM mischaracterizes the nature of its filing. The August 16<sup>th</sup> Filing asserts (at 14): “PJM’s proposed changes are not designed to change fundamental roles between the IMM and PJM, but instead to establish a more effective and efficient process with clear standards of review, timelines, deadlines and clear authorities in PJM’s Tariff and Operating Agreement.” PJM claims (at 6), “nothing submitted herein infringes upon the IMM’s defined role pursuant to the applicable provisions of PJM’s governing documents,” citing Attachment M and Attachment M–Appendix.

But PJM’s characterizations are contradicted by PJM’s actual proposed changes in roles and by PJM’s attempt to expand the scope of this proceeding by submitting its compliance proposals under Section 206 of the Federal Power Act. On page 12 of the August 16<sup>th</sup> Filing, PJM characterizes the current process as one “where the Market Seller and the IMM negotiate over the terms of the submitted fuel cost policy during which the IMM requests information from a Market Seller that it deems necessary for its independent review related to market power.” On pages 7–8 the proposed process is characterized as one where “PJM will approve Fuel Cost Policies, with expert input from the IMM.”

It is clear from PJM’s statements and the details of PJM’s filing that PJM proposes a fundamental change to the current review process. PJM’s protestations to the contrary are not consistent with the substance of the PJM filing.

### **3. The Commission Approved the Current Roles and its Orders Do Not Require or Suggest that Current Roles be Redefined.**

#### ***a. The June 17<sup>th</sup> Order***

Displacement of the Market Monitoring Unit from its role in reviewing fuel cost policies for market power concerns is not consistent with the directive in Paragraph 33 of the June 17<sup>th</sup> Order to preserve incentives to submit accurate cost-based offers. PJM’s attempt to displace the Market Monitor appears to be based entirely on PJM’s asserted desire to address vague and unsupported alleged “ambiguities” and lack of “clear

direction” in the current process.<sup>33</sup> These allegations are euphemisms for complaints from generators who would prefer not to have well defined fuel cost policies.

The second part of the directive of the June 17<sup>th</sup> Order (at P 63) reveals that the Commission does not intend fundamental change to the process of market power monitoring and mitigation. The defined penalty structure will apply if either PJM or the Market Monitor determines that a cost-based offer does not comply with Schedule 2 of the OA or Manual 15. The second part of the directive acknowledges that both PJM and the Market Monitor are involved in the review of fuel cost policies and make separate determinations. The separate determinations derive from tariff rules delineating the roles of PJM in reviewing administrative compliance with tariff and the Market Monitor in reviewing offer levels for market power.

PJM’s attempt to change the rules on roles constitutes an improper collateral attack on the current provisions specifying roles. PJM’s August 16<sup>th</sup> Filing ignores and is inconsistent with the rules in Section 12A of the OATT and in Section IV.E-1 of Attachment M to the OATT. The August 16<sup>th</sup> Filing would create new roles in addition to moving outdated and inaccurate material from Manual 15 to Schedule 2 of the OATT. The roles described in Manual 15 predate the addition of Section 12A to the OATT. The language in Manual 15 should have been and should be clarified consistent with Section 12A of and Section IV.E-1 of Attachment M to the OATT.<sup>34</sup>

This compliance proceeding is not the proper forum for proposals to redefine the Market Monitor’s and PJM’s roles in the review of fuel cost inputs as defined in Section 12A and Attachment M. The scope of this compliance proceeding should be limited to the

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<sup>33</sup> August 16<sup>th</sup> Filing at 14.

<sup>34</sup> The fuel cost policy process predates the creation of an external independent market monitor in 2008 and the adoption of Section 12A of the OATT and related roles provisions in 2012.

specific directives for compliance.<sup>35</sup> The Commission routinely rejects compliance proposals that exceed the scope of its compliance directives. PJM concedes (at 1–2) that its proposal is outside the scope of this compliance proceeding, and attempts to remedy that defect by attempting to combine its compliance filing with a complaint under Section 206 of the Federal Power Act. The attempt to remedy the improper scope fails. The August 16<sup>th</sup> Filing makes no serious attempt to meet the requirements for a complaint set forth in Rule 206. The Commission has determined that submittal of a Section 206 filing in conjunction with a compliance filing or other filings is procedurally prohibited or improper.<sup>36</sup>

If the August 16<sup>th</sup> Filing is accepted as a complaint and PJM’s arguments in support of changing the roles of the Market Monitor and PJM in the review of cost inputs are considered, those arguments should be found to have no merit. The provisions proposed by PJM that would change the Market Monitor’s and PJM’s roles in the review of cost inputs to prospective mitigation should be rejected.

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<sup>35</sup> See 18 CFR § 154.203(b) (“Filings made to comply with Commission orders must include only those changes required to comply with the order. Such compliance filings may not be combined with other rate or tariff change filings. A compliance filing that includes other changes or that does not comply with the applicable order in every respect may be rejected.”).

<sup>36</sup> *Id.*; see also *PJM Interconnection, L.L.C.*, 151 FERC ¶ 61,250 at P 16 n.23 (2015) (“Complaints must be made in separate pleadings, and not included in, e.g., interventions/protests or requests for rehearing.”); *Entergy Servs., Inc.*, 104 FERC ¶ 61,084 at P 13 (2003) (“[W]e note that ExxonMobil’s request is, in effect, a complaint and should be separately filed as a complaint and not included as part of its protest in this proceeding.”); *La. Power & Light Co.*, 50 FERC ¶ 61,040 at 61,062–63 (1990) (“While [the] pleading was also captioned a complaint, a complaint cannot be submitted as an integral part of a protest and motion to intervene in an ongoing proceeding; it does not allow interested parties sufficient notice of the complaint because it is not formally docketed and noticed. [n3 To require the Commission to search through every one of the many protests and motion to intervene that are filed every year in order to identify those that are also “complaints” ... so that they may be separately docketed and noticed, and so that the Secretary may serve copies on the appropriate persons, would impose an enormous burden.]”); *Yankee Atomic Elec. Co.*, 60 FERC ¶ 61,316 at 62,096–97 n19 (1992) (explaining the importance of filing a complaint separately from a motion for clarification).

*b. The System Offer Cap Order*

PJM claims that its proposal is consistent with another recent finding in the System Offer Cap Order that “the authority to approve or reject fuel cost policies lies with PJM, and the role of the IMM is to advise the generator and PJM.”<sup>37</sup> But PJM misreads the System Offer Cap Order.

The System Offer Cap Order explained:

The Delaware PSC, the IMM and PJM ICC contend the Commission should make clear the role of the IMM in approving generators’ fuel cost policies. These commenters assert that tariff language should be in place to clarify that the IMM must review and accept a market participant’s fuel cost policy before offers above \$1,000/MWh may be made into the PJM energy markets. The IMM appears to seek new authority to “approve” fuel cost policies that Market Sellers are already required to have submitted as a prerequisite for any level of cost-based offers, consistent with the tariff, Operating Agreement and Manual 15. In particular, with respect to energy offer caps, the Tariff currently provides that the “Market Monitor or his designee shall advise the Office of the Interconnection whether it believes that the cost references, methods and rules included in the Cost Development Guidelines are accurate and appropriate, as specified in the PJM Manuals” (emphasis added). We clarify here that the authority to approve or reject fuel cost policies lies with PJM, and the role of the IMM is to advise the generator and PJM. To the extent fuel cost policies do not meet tariff and PJM manual guidelines, the IMM may recommend to PJM not to accept such deficient fuel cost policies. Further, if the IMM believes aspects of the tariff or Manuals are unjust and unreasonable as it relates to the fuel cost policy, it should present evidence to the Commission demonstrating why a change is necessary.<sup>38</sup>

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<sup>37</sup> August 16<sup>th</sup> Filing at 7 n. 22, citing *PJM Interconnection, L.L.C.*, 153 FERC ¶ 61,289, at P 47 (2015) (“System Offer Cap Order”).

<sup>38</sup> *PJM Interconnection, L.L.C.*, 153 FERC ¶ 61,289 at P 47 (2016).

The cited language in the System Offer Cap order concerns the Market Monitor's proposal in that proceeding that a seller must have a fuel cost policy in place sufficient to satisfy market power concerns of the Market Monitor or the Office of Enforcement as an administrative requirement to submit a cost-based offer above \$1,000/MWh and therefore have a potentially significant impact on energy prices. The System Offer Cap Order did not require the changes sought by the Market Monitor, explaining, "The IMM appears to seek new authority to 'approve' fuel cost policies that Market Sellers are already required to have submitted as a prerequisite for *any* level of cost-based offers" (emphasis added). The additional authority would have prevented market participants from submitting offers above \$1,000 per MWh without a fuel cost policy approved by the Market Monitor.

The Market Monitor raises a different issue in this proceeding, and does not seek any revisions to the rules that would give new authority to the Market Monitor. Here the Market Monitor only seeks to preserve the Market Monitor's existing authority related to fuel cost policy reviews. The Market Monitor does not propose a requirement that the Market Monitor determine that a seller has a fuel cost policy in place that raises no market power concerns in order to make offers into the market. PJM has the authority to approve fuel cost policies based on its administrative role, which is a prerequisite for the ability to offer into PJM markets.

In this proceeding, PJM proposes new authority for itself. PJM does not support the need for such authority with any evidence, and its request for new authority in this compliance filing should be rejected.

PJM seeks to insert itself for the first time into the review of fuel cost policies for market power concerns. PJM has never had this role and is barred from this role by its tariff (OATT § 12A). The key defect in the August 16<sup>th</sup> Filing is that it misstates the criteria appropriate for PJM's administrative compliance review. Nothing in the System Offer Cap Order supports the aspects of PJM's proposal that the Market Monitor is protesting. The Market Monitor requests only that the Market Monitor and not PJM apply the criteria for evaluating whether fuel cost policies raise market power concerns (including the level of



costs that fuel cost policies will determine), whether fuel cost policies define competitive, cost-based offers and whether fuel cost policies are supported with adequate detail and documentation.

*c. Order 719*

**i. The Market Monitor’s Role in Market Power Review Does Not Impinge on RTO Functions.**

PJM also argues that its proposed review process is required under Order No. 719. PJM states (at 7): “Because Fuel Cost Policies “affect market outcomes on a forward-going basis [by] altering the prices of offers” [n23: Order No. 719 at P 375] their review and approval constitutes prospective mitigation.” PJM’s reliance on Order No. 719 is misplaced. PJM has misread Order No. 719. PJM confuses the inputs to prospective mitigation with prospective mitigation.<sup>39</sup> The Market Monitor has never argued that it has responsibility to implement mitigation. The Market Monitor has never implemented mitigation and is not requesting to do so.

**ii. The Fuel Cost Policy is an Input to Prospective Mitigation.**

Under current practice, the Market Monitor accepted fuel cost policy serves as an input to prospective mitigation that ensures the submittal of cost-based offers at competitive levels. Consistent with Order No. 719, the OATT (Section 12A and Section IV.E-1 of Attachment to the OATT) assigns this role exclusively to the Market Monitor. Agreement between the Market Monitor and the Market Seller on cost calculations, via fuel

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<sup>39</sup> See August 16<sup>th</sup> Filing at 7 n.21, discussing Order No. 719 (at P 375) (“Importantly, the Commission held that it considered “prospective mitigation to include only mitigation that can affect market outcomes on a forward-going basis, such as altering the prices of offers or altering the physical parameters of offers (e.g., ramp rates and start-up times) at or before the time they are considered in a market solution. All other mitigation would be considered retrospective.” *Id.* (emphasis added). The Commission further held that “the MMU may provide the inputs required by the RTO or ISO to conduct prospective mitigation, including determining reference levels, identifying system constraints, cost calculations and the like.”).

cost policy review, performs the same function as the Market Monitor cost level consultation for developing reference levels in other RTOs.<sup>40</sup> Participating in the Market Monitor's review process is a requirement under Section 12A of the OATT.

The Commission's Orders No. 719 and No. 719-A recognized conflicts of interest that the RTO and the Market Monitor may face in implementing market power mitigation and the potential for the RTOs to infringe on market monitoring independence.<sup>41</sup> The Commission chose to allow flexibility in the division of labor between the RTO and the Market Monitor in RTO tariffs. Order No. 719 explicitly allows (at P 375) an RTO's tariff to assign the development of inputs to the market monitoring function. Order No. 719, in the passage quoted by PJM, held "the MMU may provide the inputs required by the RTO or ISO to conduct prospective mitigation, including determining reference levels, identifying system constraints, cost calculations and the like."<sup>42</sup> Order No. 719 explicitly stated (at P 375) that allowing MMUs to calculate cost inputs was meant to "enable the RTO or ISO to utilize the considerable expertise and software capabilities developed by their MMUs, and reduce wasteful duplication."<sup>43</sup> For similar reasons, Order No. 719 (at P 377) excludes MMUs from involvement in "purely administrative matters," because they are "remote from the core duties that the Final Rule assigns to the market monitoring function." Finally, Order No. 719 stressed (at P 378) the need for clear rules establishing separate functions:

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<sup>40</sup> The Market Monitor's authority under the PJM tariff is more limited. The Market Monitor does not determine the level of the cost input. The Market Monitor advises participants of its position concerning whether the cost input raises market power concerns and attempts to come to an agreement. Participants are not bound to use a fuel cost policy approved by the Market Monitor unless they come to an agreement with the Market Monitor.

<sup>41</sup> Order No. 719 at PP 372–373; Order No. 719-A at PP 133–137.

<sup>42</sup> *Id.*

<sup>43</sup> For example, the Market Monitor has made a significant investment in its web based interface, the Member Information Reporting Application ("MIRA") system. MIRA allows participants to upload all elements of cost-based offers including fuel cost policies. For more information on MIRA, see <<http://www.monitoringanalytics.com/tools/tools.shtml>>.

We also direct that the tariffs of RTOs and ISOs clearly state which functions are to be performed by MMUs, and which by the RTO or ISO. This separation of functions will serve to eliminate RTO or ISO influence over the MMUs, and remove the concern that MMU assistance in mitigation makes it subordinate to the RTO or ISO.

The Commission's approval of the assignment of duties to develop the inputs to mitigation must take into account the RTO's conflict of interest and the relative expertise of the RTO and the market monitor. Orders 719 and 719-A recognized this in allowing market monitors to provide inputs to mitigation, including cost calculations and reference levels.<sup>44</sup> Orders 719 and 719-A also stated that the purpose of separating the roles related to market power mitigation was to "remove the MMU from subordination to the RTO."<sup>45</sup> The orders are clear that the intent is to allow the MMU to "provide the inputs required by the RTO," not to provide input to the RTO in a subordinate role.<sup>46</sup> PJM proposes to place the Market Monitor in a subordinate role.

**iii. Market Monitoring Is an Independent Function, Separate from the RTO.**

PJM's August 16<sup>th</sup> Filing would undermine key elements of the competitive design of PJM's energy market, the independent role of the Market Monitor, and the ability of the Market Monitor to obtain necessary information to carry out its functions. The August 16<sup>th</sup> Filing proposes that PJM assume an active role as the primary reviewer of generator costs and of the sufficiency of information to support those costs.<sup>47</sup> Currently, the Market Monitor independently does both through its market power review of cost-based offers.<sup>48</sup>

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<sup>44</sup> Order No. 719 at P 375; Order No. 719-A at P 128.

<sup>45</sup> Order No. 719-A at P 127.

<sup>46</sup> Order No. 719-A at PP 127-128.

<sup>47</sup> See August 16<sup>th</sup> Filing at 20-21.

<sup>48</sup> OATT Attachment M § IV.E-1.

PJM states (at 7) that monitoring for market power is “a shared duty and one performed most effectively where rules are designed, as is the case with the instant proposal, to ensure early communication, timely input, collaboration, and cooperation between the RTO and its market monitoring functions.” PJM provides no basis for its assertion (at 6–7) that market power monitoring is a shared duty. The OATT does not support PJM’s claims that market power monitoring is a shared duty; the OATT specifically contradicts PJM’s claims.

The OATT rules specify a clear separation of functions that the August 16<sup>th</sup> Filing ignores by including market power criteria in the criteria for PJM’s administrative compliance review. If the shared process proposed by PJM is accepted, it would establish exactly the ISO influence over and subordination of the MMU function that the Commission sought to prevent in Order No. 719. The OATT rules that clearly state separate functions should be preserved. The review process included in the August 16<sup>th</sup> Filing should be rejected as incompatible with the Commission’s MMU policies.

#### **4. There is No Need for a Change to the Current Roles.**

The changes to the current roles proposed in the August 16<sup>th</sup> Filing are not necessitated by flaws in the current process.

PJM took no interest in fuel cost policy reviews until the Market Monitor began to emphasize the significant role of fuel cost policies to competitive markets and began a process to clarify and reform the requirements for fuel cost policies to obtain better policies, and some reluctant participants complained to PJM about the reform effort. PJM’s August 16<sup>th</sup> Filing is not about ensuring incentives for more accurate cost based offers. It is instead about undercutting the ongoing effort by the Market Monitor to improve the incentives for accurate fuel cost policies. If the August 16<sup>th</sup> Filing were accepted, it would terminate the Market Monitor’s effort to put in place competitive fuel cost policies precisely when the need for algorithmic, verifiable, and systematic fuel cost policies has become acute. PJM’s

attempts (at 9–16) to justify its changes to review processes based on alleged confusion and delay in the current process for reviewing fuel policies are unsupported.

PJM's primary rationale for displacing the Market Monitor from its current role involves allegations (12) that "many Market Sellers have indicated they are in a state of uncertainty with regard to their Fuel Cost Policies because while the IMM had previously indicated that it agreed with such policies, the IMM has more recently indicated that it no longer agrees with them."

It is correct that the Market Monitoring Unit has carefully reviewed all fuel cost policies and found a significant number of those fuel cost policies to be inadequate because they are not algorithmic, verifiable or systematic. The Market Monitor's review was a positive development in light of changes in gas markets and PJM markets. The changes to the Market Monitor's review process were required by the need to ensure competitive offers. While there was a transition process, there is no uncertainty about the status of any participant's fuel cost policy with the Market Monitor.

The fact that PJM complains about these developments illustrates that their concerns are misplaced and that their objectives are not well defined. The goal of the fuel cost policy review process is to help ensure competitive market outcomes and not to minimize generator complaints. The application of new standards to the fuel cost policy review process has been somewhat difficult for all involved. But that is not surprising. It would have been more productive for PJM to encourage generators to cooperate with the Market Monitor's process and to reaffirm the tariff defined roles than to attempt to redefine the market power monitoring roles of the Market Monitor and PJM.

Some market participants have indicated that they are reluctant to make the effort to meet the Market Monitor's standards because PJM has communicated disagreement with those standards and its intent to modify the process to replace the Market Monitor's standards with PJM's weaker standards.

The Market Monitor's goal is to have the fuel cost policy review process work efficiently and effectively. The Market Monitor has detailed fuel cost policy templates for all

fuel types and has engaged with participants for months to develop policies for each participant. The Market Monitor and its exercise of its proper tariff defined role is not the problem with the current process. PJM has not supported its claims that there is a problem with the current process that justifies PJM taking over the market monitoring role. The Market Monitor agrees that the process needs to be clarified. The tariff revisions proposed by the Market Monitor include such clarification.

**C. The Scopes and Standards for Compliance and Market Power Review Should Remain Without Overlap.**

To preserve incentives for accurate cost-based offers, it is essential that the Market Monitor independently evaluate fuel cost policies and the adequacy of the supporting documentation and communicate its determination directly to participants. If participants submit inaccurate offers, participants must have clear responsibility for their market behavior. The Market Monitor's review is the only review that considers whether offer costs are at a competitive level, short run marginal cost. This standard derives from the language in Attachment M that the Market Monitor reviews cost offers for market power concerns.<sup>49</sup> The Commission's Orders and its 2014 study have shown repeatedly that the Commission supports short run marginal cost as the standard for cost offers and reference levels for prospective mitigation.<sup>50</sup> For PJM to comply with the June 17<sup>th</sup> Order without interfering

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<sup>49</sup> OATT Attachment M § IV.E-1.

<sup>50</sup> See "Staff Analysis of Energy Offer Mitigation in RTO and ISO Markets" Federal Energy Regulatory Commission, Docket No. AD14-14 Price Formation in Organized Wholesale Electricity Markets (October 2014) at 3 ("The mitigation procedures in the RTO and ISO energy markets, as set forth in the Commission-jurisdictional tariffs, are based on the premise that in a competitive wholesale electricity market, a resource's offer will be approximately equal to its short-run marginal cost (including opportunity costs)."); *Southwest Power Pool, Inc.*, 152 FERC ¶ 61,226 at P 68 (2015); see also, e.g., *Houlian Chen, Powhatan Energy Fund, LLC*, 151 FERC ¶ 61,179 at P 23 (2015) ("In calculating the cost of line loss, as part of LMP, PJM sets the price at marginal cost, rather than average cost..."); *Midwest Indep. Transmission Sys. Operator, Inc.*, 134 FERC ¶ 61,141 at P 83 (2011) ("[s]ince any such negative offer prices would reflect the resources marginal cost for producing energy, settling excessive energy credits at \$ 0 or at a non-negative market price instead of the resources

with the independence of the Market Monitor's market power review requires that the Commission make clear that PJM's review covers compliance requirements that do not involve evaluation of potential market power monitoring items, such as cost calculations, levels, and the sufficiency of documentation.

**1. The Proposed Overlapping Scope of Review Would Be Confusing and Inefficient.**

PJM's proposal would result in displacement of the Market Monitor from effective participation in the process of market power review, would create confusion about who performs market power reviews and would result in continuing referrals of disputes between the Market Monitor and PJM about fuel cost policies and market power issues to the Office of Enforcement. This would create confusion and uncertainty for market participants. This is not an efficient or effective way to address market power issues.

PJM's process under proposed Schedule 2 and Manual 15 impermissibly mixes its review for administrative compliance with the Market Monitor's market power review. PJM sets forth standards in the guise of administrative compliance that call for it to make evaluations of whether the information provided will generate accurate offers. Accuracy can only be defined by the level of the offer measured against short run marginal costs. Accuracy is part of the market power review. Administrative compliance is limited to

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negative offer prices would provide an incentive for Dispatchable Intermittent Resources to overproduce and gain revenues in excess of their marginal costs (e.g., via production tax credits."); *Atlantic City Elec. Co., et al. v. PJM Interconnection, L.L.C.*, 115 FERC P 61,132 at P 22 (2006) ("Billing on the basis of marginal costs ensures that each customer pays the proper marginal cost price for the power it is purchasing."); *PJM Interconnection, L.L.C.*, 150 FERC ¶ 60,120 at P 35 (2015) ("this is consistent ... with the construct of the PJM market, in which LMPs reflect the marginal cost of production"); *Midcontinent Indep. Sys. Operator*, 149 FERC ¶ 61,225 at P 53 (2014) ("Under locational marginal pricing, all parties at a location pay the same marginal cost of serving the next increment of load."); *San Diego Gas & Electric Company v. Sellers of Energy and Ancillary Services, etc.*, 149 FERC ¶ 61,116 at P 7 (2014) ("To mitigate these transactions, the Commission used the Mitigated Market Clearing Price (MMCP). The MMCP serves as a proxy price based on the marginal cost of the most expensive unit dispatched to serve load in CAISO's real-time imbalance energy market."); *PJM Interconnection, L.L.C.*, 110 FERC ¶ 61,053, at P 25 (2005).

whether information is provided, not whether such information results in accurate values. Likewise, the sufficiency of documentation is a matter for market monitoring.

The August 16<sup>th</sup> Filing includes changes to Section II.A.2. of Attachment M – Appendix that require the Market Monitor’s cost-based offer review to rely on PJM’s fuel cost policy standards. The August 16<sup>th</sup> Filing also retains Section IV.E-1 of Attachment M that requires the Market Monitor to review cost-based offers for market power concerns. The Market Monitoring Unit would continue to meet its responsibility to perform the market power review and would refer anticompetitive behavior to the Office of Enforcement, even if such behavior were sanctioned by a PJM-approved fuel cost policy. However, no penalty for inaccurate cost-based offers would apply. PJM’s proposed process would make the Market Monitor’s review effectively meaningless because it would be unenforceable if inconsistent with PJM’s acceptance of a fuel cost policy that incorporated PJM’s weaker market power mitigation approach. PJM’s proposed process would result in an increase in investigations, referrals and complaints. PJM’s proposed process would also pose administrative burdens on Market Sellers.

## **2. PJM’s Lower Standards Would Create Safe Harbors for the Exercise of Market Power and Complicate Enforcement.**

Under PJM’s proposed approach, the less rigorous review of fuel cost policies would create incentives for participants to submit inaccurate cost-based offers. PJM’s standards for cost-based offers do not require an accurate reflection of actual costs, only adherence to the PJM-approved policy, which would be held to vague, discretionary standards, like “a range of reasonableness and expectation.”<sup>51</sup> Such offers would not be algorithmic, would not be verifiable and would not be systematic. Such standards are exactly what were proposed by some generators in the early phases of discussions with the Market Monitoring Unit on fuel

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<sup>51</sup> “Manual 15 Biennial Review and Fuel Cost Policy,” PJM presentation to the Market Implementation Committee (July 27, 2016), <<http://pjm.com/~media/committees-groups/committees/mic/20160727/20160727-manual-15-presentation.ashx>> at 28.



cost policies. Most generation owners have realized that such standards are not meaningful. Such offers would be shielded from effective referrals by the Market Monitor and effective enforcement actions by the Commission as a result of unclear standards that do not include enforceable provisions related to market power.

If PJM is allowed to make determinations on market power in the fuel cost policy review process instead of the Market Monitor, the process will no longer create incentives for participants to submit accurate cost-based offers. Allowing participants to make offers based on PJM's stated standards for market power will result in increased opportunities to exercise market power and a reduction in the effectiveness of market power mitigation. The proposed penalties would only apply when the cost-based offers do not adhere to PJM's approved policy. Inaccurate cost-based offers would face no consequences. PJM would not inform participants that their offers raise market power concerns even when the offers are not consistent with their short run marginal costs and are not supported by adequate documentation. The Market Monitor would be required to make many more referrals because it would be unable to provide an incentive for competitive offers directly through the fuel cost policy review process. The Office of Enforcement will be unable to defend determinations that participants exercised market power when PJM has approved such behavior in advance even if it agrees with the Market Monitor that cost based offers were not competitive. The result would be a weakening of the competitiveness of the PJM Energy Market.

As a result of rule changes permitting hourly changes to offers and permitting cost based offers above \$1,000 MWh, opportunities to exercise market power and to exercise significant market power will increase at the same time that protections against the exercise of market power are reduced and the obstacles for enforcement are raised.

The June 17<sup>th</sup> Order directs that proposed rule changes ensure that the incentives for participants to submit accurate cost-based offers be retained. Accordingly, the current role of the Market Monitor in the review of fuel cost policies for market power concerns should be retained. PJM's proper role is not to shield participants from monitoring for market

power. PJM should limit its consideration and approval of fuel cost policies to administrative tariff compliance and should make no determination on their substance.

PJM's defined role contains no review for short run marginal costs or for market manipulation. The proposal's relegation of the Market Monitor to providing advice to PJM in the fuel cost policy review weakens the enforceability of any market power concerns that the Market Monitor may find in a PJM approved policy. Allowing PJM to supplant the market power review with its administrative compliance review would interfere with and compromise the market monitoring function. Weakening the market power standards for fuel cost policies weakens PJM's market power mitigation and thus the competitiveness of PJM's markets. Weakening the competitiveness of PJM's markets is not just and reasonable.

### **3. Clarification of Administrative Compliance and Market Power Review Scope, Standards, and Consequences is Needed.**

A Market Seller must pass PJM's administrative compliance review in order to submit a cost-based offer. A Market Seller does not need to meet the standards of the Market Monitor's market power review in order to submit an offer, but compliance with a fuel cost policy that the Market Monitor has not approved does not entitle the seller to any presumption that its offer is not an exercise of market power or manipulation. Penalties should apply, on referral or otherwise, when an offer is an exercise of market power or manipulation. The consequences should not be constrained by whether an offer was consistent with a fuel cost policy approved by PJM. PJM's proposal would mean that PJM's approval of a fuel cost policy as meeting the administrative requirements of the tariff would shield a seller from enforcement action even though the fuel cost policy raised significant market power concerns.

#### **D. The Market Monitor's Proposals Would Preserve the Current Review Process and Delineation of Roles, and Would Enhance Transparency.**

The Market Monitor has developed tariff language (Attachment A) that would satisfy the Commission's directives that the review process (i) preserves and enhances the incentives to submit accurate cost-based offers that do not raise market power concerns, (ii)

does not permit nonzero offers from participants whom PJM determines have not complied with the tariff, (iii) and provides for penalties when PJM determines that Market Sellers do not comply with the tariff or when the Market Monitor determines that the level of cost-based offers raise market power concerns.

The Market Monitor's proposed language satisfies the Commission's directives in a manner fully consistent with the assignment of roles in the review of cost-based offers in the PJM tariff and consistent with how the process has been conducted historically. To maintain the ability of the Market Monitor to prevent the exercise of market power, the Market Monitor proposes that, in accordance with Section 12A of the OATT, the division of labor in reviewing fuel cost policies and cost-based offers be clarified in the OATT by defining PJM's responsibilities in Schedule 2 and the Market Monitor's responsibilities in Attachment M-Appendix. Schedule 2 would describe the basic components of cost-based offers, PJM's administrative cost-based offer acceptance criteria, the basic components of fuel cost policies, and PJM's administrative fuel cost policy approval process. PJM's criteria and processes would include no judgments regarding the levels of costs or cost components, the reasonableness of cost development practices, or the sufficiency of cost documentation. Cost levels and development practices are part of the market power review. Only a very clear delineation of the scope of PJM's and the Market Monitor's review will ensure that both tariff administration and the prevention of market power are the result.

The Market Monitor's proposed language would make rules against market power enforceable, in contrast to PJM's proposal. The Market Monitor cannot prevent offers with which it disagrees, but the tariff should define consequences for its findings of exercises of market power. The consequences may be direct PJM penalties or penalties designated by the Commission. The Market Monitor proposes revisions to PJM's proposed Schedule 2 and Attachment M-Appendix Section II.A.2. The Market Monitor's proposed II.A.2A would identify the inclusion of excessive cost levels in cost-based offers as a potential exercise of market power, subject to penalties imposed by PJM or the Commission. PJM's compliance

review would not provide a safe harbor from the Market Monitor's independent market power findings.

The Market Monitor's proposed clarifying tariff language should be approved, or PJM should be directed to submit revisions consistent with the Market Monitor's proposed language.

## **E. The Market Monitor's Recommended Revisions to Operating Agreement Schedule 2 and Attachment M–Appendix**

### **1. Components of Cost**

A principal purpose of Schedule 2 of the PJM Operating Agreement is to list the components of cost. Because the listing of the components of cost in Schedule 2(a) does not parallel the components used to construct cost-based offers, the Market Monitor recommends a clarification to list the components of cost as applicable to the three-part offer in the energy market. The recommended revision would align PJM's compliance review of the components of costs included in cost-based offers, as described in the fuel cost policy, with the structure of actual cost-based offers by identifying the components includable in cost-based incremental energy offers, no load costs, and start costs.

### **2. Levels of Cost**

Section 12A of the OATT prohibits PJM from the review of the levels of cost-based offers and the levels of the components of cost. Provisions related to the evaluation of the levels of cost should reside in Attachment M–Appendix II.A with all other market monitoring functions.<sup>52</sup> The Market Monitor recommends the inclusion in Schedule 2(a) of a reference to Section II.A of Attachment M–Appendix for provisions related to the evaluation of the levels of cost. The Market Monitor also recommends that the Commission require a clarification in Attachment M of the current requirement for incremental costs to

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<sup>52</sup> See Order No. 719 at 392.

more explicitly require that the levels not exceed short run marginal costs.<sup>53</sup> Although incremental costs are short run marginal costs, some have interpreted incremental to include costs other than short run marginal costs.<sup>54</sup> The clarification should reside in Attachment M, because it is specific to the market power review.

The Market Monitor's review of the levels of cost should not be subordinate to determinations made by PJM, beyond Commission review, whether in the fuel cost policy review process or otherwise. For this reason, the Market Monitor recommends clarification that it shall deem costs accurate when calculated according to a fuel cost policy accepted by the Market Monitor under its standards, not necessarily one approved by PJM.

### **3. PJM Manual 15: Cost Development Guidelines**

Currently, Section (c) of Schedule 2 requires Market Sellers to adhere to the cost development methods contained in Manual 15. The Market Monitor's review of the levels of cost should not be subordinate to determinations made by PJM, beyond Commission review. The Market Monitor proposes to modify the requirement to adhere to Manual 15 to instead state that costs shall not exceed those calculated under Manual 15. Otherwise, Manual 15 may serve as a shield for Market Sellers submitting excessive cost-based offers by using outdated provisions, such as the calculations based on FERC accounting codes.<sup>55</sup>

The Market Monitor recommends maintaining, in Attachment M–Appendix II.A.1., the Market Monitor's role in advising PJM and its Members on the appropriate methods to

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<sup>53</sup> See *Southwest Power Pool, Inc.*, 141 FERC ¶ 61,048 at P 420 (2012) (“SPP must be more specific and establish that offers are to be mitigated to their short run marginal costs of the generating unit.”).

<sup>54</sup> See *Southwest Power Pool*, 152 FERC ¶ 61,226 (2015).

<sup>55</sup> See, for example, Manual 15 at 31, 46, and 88. Manual 15 is out of date, including cost methods that date from decades prior to markets when the purpose of cost-based offers was to split the savings among PJM members from the operation of PJM as a tight power pool and not to define competitive offers.

be included in Manual 15 with the goal of achieving consistency and transparency for Market Sellers.

#### **4. The Scope of PJM's Compliance Review**

As described in Section 12A of the tariff, PJM performs a compliance review of cost-based offers to ensure that Market Sellers have met the requirements for acceptance of a cost-based offer. The requirement prohibiting nonzero cost-based offers in the absence of a fuel cost policy provides market participants assurance that Market Sellers with offers clearing in PJM's Energy Market have engaged in the fuel cost policy review process with the Market Monitor required to support market power mitigation. While PJM's approval may not ensure against the exercise of market power, it does ensure that the Market Seller has provided its information to the Market Monitor and received feedback. PJM's provision in Schedule 2(d) that a Market Seller "only submit a nonzero cost-based offer" with a fuel cost policy approved by PJM is necessary and appropriate, as is the requirement that Market Sellers submit a fuel cost policy to PJM and the Market Monitor.

In several places, PJM's proposed Schedule 2 infringes upon the market power review of cost-based offers. In cases where Schedule 2 would have PJM making judgements regarding levels of cost, methods for determining levels of cost, and sufficiency of information to verify costs, revision is required to maintain consistency with Section 12A to support the independence and enforceability of the market power review. The Market Monitor recommends clarification in (e) and (k) that the scope of PJM's review is administrative compliance and that the market power review is independent of PJM's compliance approval.

Section (f) contains specific items that infringe on the independent market power review. For example, if PJM makes a determination under (f)(i) that the fuel cost policy provides for sufficient information for the verification of the practices used to determine cost-based offers, it inhibits the Market Monitor's ability to argue otherwise in requesting further information required for the market power review. Market Sellers may use PJM's

approval as a shield against further provision of information to the Market Monitor. If the Market Monitor refers such behavior to the Commission's Office of Enforcement, PJM approval may hinder the enforceability of the tariff violation.

Several of the requirements in (f) are also impractical or not applicable to the determination of the fuel costs included in cost-based offers. Fuel contracts and fuel procurement practices required in (f)(ii) are generally irrelevant to the determination of replacement fuel costs. For example, most natural gas-fired generators find that the spot market provides the best indication of the economic value (market price) of fuel. Generators may procure gas using long term contracts, which play no role in calculating the market price of fuel at a specific point in time. The spot market price, which may play no role in procurement, defines the short run replacement cost and opportunity cost of burning fuel to produce energy. The fuel cost policy approval should not include a requirement to describe fuel procurement practices except to the extent that they directly result in short run marginal costs.

The provisions in (f)(iv) do not make clear what it means for an index to be illiquid or what provisions apply to Market Sellers that have never experienced such conditions. If an illiquid fuel market situation has never arisen, or has only arisen once, the Market Seller does not have "alternative means actually utilized" under those conditions. The proposed definition of illiquid is relevant only because it requires a different method for calculating the level of gas costs which is not within PJM's purview. The provisions in (j) provide adequate compliance criteria for PJM's fuel cost policy review. The Market Monitor recommends the removal of (f).

The scope of PJM's compliance review should not include providing PJM with the authority to grant exceptions to the OATT based on a discretionary notion of superiority, or any other criteria. Only the Commission may grant exceptions to the tariff. Provisions in a PJM Manual for exceptions to the manual may have a valid use but those exceptions remain subject to the tariff. If Schedule 2 cannot be written broadly enough to cover PJM's

compliance review, exceptions should require approval by the Commission. The Market Monitor recommends the removal of (g).

Consistent with Section 12A, PJM's compliance review should not include evaluation of the substance of the fuel cost policy content, which describes the calculation of the levels of fuel costs. In approving or rejecting a policy, PJM need not evaluate the adequacy of support for or acceptability of the content. The Market Monitor recommends removal of the first sentence in (h). PJM's rejection should not cause a Market Seller to revert to a fuel cost policy that is no longer accurate. Reversion to the previously approved policy makes sense when the new policy contains refinements on the previous policy. If, for example, a resource has converted from burning coal to burning gas, the previous policy would be incorrect and there are no conditions under which use of that policy would be appropriate. In such a case, the previous policy should not be the default under Schedule 2. The Market Monitor recommends corresponding clarification to (h).

The scope of PJM's administrative compliance review should not include revocation of approved policies. PJM has not made clear under what circumstances it would revoke a policy. In the September 13, 2016, Markets Implementation Committee, PJM staff provided the example of fraud. The determination of fraud falls into the scope of market manipulation and market power abuse. PJM's role is not to make such determinations. The Market Monitor recommends removal of (i).

## **5. Details of PJM's Compliance Review**

### ***a. Applicability to Non-fossil Fuel Resources***

Schedule 2(j) makes provisions related to generation technologies that may not include fuel costs in cost-based offers. The details imply particular levels of cost for these resources. The Market Monitor recommends removal of the details to allow sufficient flexibility for solar, nuclear, wind, hydro, and other renewable fuel resources that may face a variety of special circumstances. The Market Monitor has learned through experience with actual units that it is not possible to specify in advance this level of detail. Specifying this level of detail in the tariff would be counterproductive.



***b. Requirements for the Levels of Cost Components***

In adherence to Section 12A and based on its experience monitoring cost-based offers, the Market Monitor recommends the removal of requirements to report the levels of non-fuel cost components in the fuel cost policy. Inclusion of these details would necessitate burdensome frequent updates to the fuel cost policy. The policy should instead include an example calculation of all three parts of the cost-based offer. The requirement to report Maintenance Adders in (j)(iv) is unnecessary, as all maintenance costs are recoverable in the RPM Avoidable Cost Rate.<sup>56</sup> The Market Monitor recommends removal of (j)(iv) and other details unnecessary for PJM's compliance review.

For consistency, the Market Monitor also recommends that the provisions for calculating the levels of energy market opportunity costs reside in Section II.A of Attachment M–Appendix instead of Schedule 2.

***c. Process and Deadlines***

The Market Monitor recognizes the need for procedural deadlines. The August 16<sup>th</sup> Filing contains no deadline pertinent to the market power review of fuel cost policies. The Market Monitor understands that Market Sellers will want to coordinate the timeline of the compliance and the market power review.

**6. Details of Market Power Review**

The market power review considers whether the level of the cost-based offer equals the level of the expected offer under competitive market conditions, which is short run marginal cost. To perform the review, the Market Monitor requires the submittal of all cost components and the methods by which the Market Seller computes the final offer. The fuel cost policy plays a crucial role in assuring that the Market Seller has followed an algorithmic calculation that is verified prior to offer submittal, and the Market Monitor will

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<sup>56</sup> See OATT Attachment DD § 6.8.

be able to verify the accuracy of that calculation after the fact by assessing of the level of the offered short run marginal cost.

The alignment of requirements for competitive cost development practices with the market power review criteria would provide the Market Seller assurance that its engagement with the Market Monitor in the fuel cost policy review process is necessary and sufficient for compliance with the market power provisions of the tariff. Such assurance does not exist under the current provisions, because many provisions in Schedule 2 and Manual 15 are overdue for revision, lack detail, and do not align with the market design.

In the recommended market power review, the Market Monitor would: 1) review the fuel cost policy; 2) consult with the Market Seller on an ongoing basis to achieve an algorithmic, verifiable, and systematic fuel cost policy; 3) inform PJM and the Market Seller of the ongoing market power review status of the fuel cost policy; 4) collect, review, and consult with the Market Seller regarding all other data required to support each unit's short run marginal cost; 5) use the accepted fuel cost policy, validated Market Seller cost data, and other information available to the Market Monitor to estimate the applicable units' short run marginal costs; 6) compare such estimates of short run marginal costs to the incremental costs submitted to PJM by the Market Seller in the cost-based offer; 7) discuss any discrepancies with Market Sellers; and 8) advise PJM and the Commission regarding the applicability of penalties for incremental costs that exceed short run marginal cost. In the case that a Market Seller does not have a fuel cost policy accepted by the Market Monitor or does not provide other data necessary for the verification of its cost-based offers with the result that the Market Monitor cannot verify the cost-based offers, the Market Monitor may refer the Market Seller to the Commission's Office of Enforcement.

The Market Monitor requests that the Commission support its performance of this review by requiring the inclusion of its recommended revisions to Section II.A.2 of Attachment M-Appendix. The revisions enhance the current language by requiring Market Sellers to submit cost-based offers that do not reflect market power and by requiring Market Sellers to adequately participate in the Market Monitor's data collection and fuel

cost policy review processes. It also identifies the inclusion of incremental costs that exceed short run marginal cost levels as an exercise of market power, subject to penalties under the tariff. Without these revisions, the Commission and market participants cannot have the assurance that the penalty provisions included in Schedule 2 will be enforceable and sufficient to prevent the exercise of market power.

## 7. Penalty Provisions

The June 17<sup>th</sup> Order (at P 63) requires a penalty if either the Market Monitor or PJM determines that a submitted cost-based offer does not comply with Schedule 2 or Manual 15. The Market Monitor recommends that the penalty triggers are also consistent with PJM's and the Market Monitor's defined administrative compliance and independent market power review roles. For clarity, the Market Monitor recommends specifying that it reviews the *level* of the cost-based offer, as described in the Market Monitoring Plan.<sup>57</sup> A penalty is triggered by PJM upon discovery of any administrative noncompliance with Schedule 2 or Manual 15. Both reviews are required to ensure accuracy of cost-based offers. If both reviews are defined in the tariff to respect their separate scope and standards, there should be no need for the Market Monitor to make referrals to the Commission when there is a disagreement with PJM.<sup>58</sup> The penalized Market Seller retains the right of appeal to the Commission. The Market Monitor recommends removal of the provisions in (l) relating to agreement and disagreement.

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<sup>57</sup> See Order No. 719 at 392.

<sup>58</sup> The Market Monitor notes that some RTOs implement penalties directly at the market monitor's determination of applicability. See Southwest Power Pool OATT Attachment AF, Section 3.9. Other RTOs implement penalties after referral to the Commission. See Midcontinent ISO, Market Monitoring and Mitigation Business Practices Manual, BPM-009-r10 at Section 8.2. The Market Monitor does not have a preference between these practices, but seeks clarity on whether the Commission has such a preference.

PJM recommends that penalty payments be allocated to load on a load ratio share basis over the entire footprint. This is not adequate. The allocation of penalty payments should account for the appropriate time period and appropriate location and ensure that no penalty payments are returned to the penalized entity or any of its affiliates.

## **8. Abrogation of the Market Power Review**

With the scope and standards of review defined in the tariff to respect the proper roles of PJM and Market Monitor, there should be no need for PJM to defend the intent of its abrogation of the independent market power review of cost-based offers. The Market Monitor recommends removal of (m).

### **F. Insufficient Penalty for Noncompliant Cost-Based Offers**

The August 16<sup>th</sup> Filing provides for a penalty that applies to noncompliant cost offers. PJM adopted the penalty formulation proposed by the Market Monitor, with slight modifications. The penalty is a defined fraction of potential gross revenues for the unit during the operating hours applicable to the noncompliant offer. The potential gross revenue formulation allows the penalty to scale with potential market impact. The fraction begins at five percent on the first day identified with a noncompliant offer. It escalates by an additional five percent of potential gross revenue each day after notification. The penalty should apply to all identified noncompliant cost-based offers. The penalty level should also provide sufficient incentive to elicit competitive, compliant behavior. PJM's proposed penalty does not. The Market Monitor proposes simple changes to increase the level and frequency of application of the penalty.

The Market Monitor's recommended penalty would apply to all market hours for which an inaccurate cost-based offer applied. Such hours include those prior to notification

by PJM or the Market Monitor at a factor of one twentieth of potential gross revenues.<sup>59</sup> The applicable offers may include any cost-based offer accepted by PJM. If the Market Seller submits multiple cost-based offers, representing different fuel pricing scenarios, the penalty may apply when any of the three are incorrect. For each available fuel, the Market Seller's lowest cost-based offer should reflect the most economic available fuel cost under the fuel cost policy. PJM's fuel cost policy compliance penalty should also apply at the generation resource level so that each resource has an approved fuel cost policy. For example, a Market Seller's nuclear fuel cost policy does not meet the compliance requirement for its coal-fired units. Due to the various scenarios, the penalty language needs to cover all cost-based offers accepted by PJM and any applicable fuel cost policy.

The formulation of the proposed penalty does not achieve levels high enough to deter anticompetitive behavior. The Market Monitor recommends that the penalty should be twice as high with further penalties applicable as the Commission deems fit. The following examples illustrate:

**1. An Incorrect Fuel Type Creates a Benefit to an Affiliated Unit.**

Consider a 150 MW combustion turbine that Company A operates using either natural gas or fuel oil. The short run marginal cost of energy is \$16/MWh burning natural gas and \$120/MWh burning oil. Suppose Company A submits a cost-based offer using the oil price and no cost-based offer using the natural gas price, despite the availability of gas. With the natural gas offer, the market would call on the unit for a one hour commitment. With only the oil offer, the market does not call on the unit. Company A has accomplished economic withholding, raising the LMP from, for example, \$30/MWh to \$35/MWh. Company A also owns a 1,000 MW combined cycle at the same location. Company A

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<sup>59</sup> PJM staff has repeatedly stated in Market Implementation Committee meetings that the penalty does not apply prior to notification. If that is the intent, the language requires clarification. The Market Monitor would not support such clarification.

benefits by increased revenue for the combined cycle of \$5,000/hour. The applicable penalty is  $1/20 * \$35/\text{MWh} * 150 \text{ MW} = \$262.50$  per hour for each day prior to notification. It reaches a maximum of \$3,937.50 per hour after notification. The market power abuse remains beneficial to Company A despite the penalty. Under the Market Monitor's proposal, the penalty exceeds the benefit to Company A on the tenth day after notification.

This example also illustrates the need to require accuracy of multiple cost-based offers considered jointly. The Market Monitor has noted to the Commission that Market Sellers can manipulate the cost-based offer rules in various ways.<sup>60</sup> Submittal of cost-based offers for an incorrect fuel type should be deemed to be inaccurate and subject to penalties. It should also be deemed a tariff violation. The Market Monitor recommends clarity in Schedule 2(l) with the addition of the words "any of" before "a Market Seller's cost-based offer[s]."

## **2. Uplift Payments in a Constrained Natural Gas Market.**

Consider a 500 MW natural gas fired combined cycle owned by Company B on a day when natural gas pipeline constraints result in high fuel prices. Company B receives fuel cost estimates of \$50/MMBtu from unaffiliated gas marketers. Company B adds a 60 percent markup to the fuel cost, resulting in the inclusion of an \$80/MMBtu cost in its cost-based offer.<sup>61</sup> With an average heat rate of seven MMBtu per MWh, the submitted cost is \$560/MWh, exceeding the verifiable cost estimate of \$350/MWh by \$210/MWh. Suppose the LMP for the hour is \$250/MWh. If dispatched by PJM, Company B will receive a make

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<sup>60</sup> See Answer and Motion for Leave to Answer of the independent Market Monitor for PJM, Docket ER16-372 (January 27, 2016) at 11. See 2015 State of the Market Report for PJM, Vol. II, Section 3: Energy Market ("The MMU recommends, in order to ensure effective market power mitigation when the TPS test is failed...that there be at least one cost-based offer using the same fuel as the available price-based offer.").

<sup>61</sup> See Section I.A. The \$30/MMBtu overstatement of fuel cost is representative of behavior observed in January 2014.

whole payment to cover its cost of  $\$560/\text{MWh} * 500 \text{ MW} = \$280,000$  per hour, while its verifiable cost is  $\$350/\text{MWh} * 500 \text{ MW} = \$175,000$  per hour. Company B benefits by  $\$105,000$  per hour from overstating its fuel costs. PJM's proposed penalty would equal  $1/20 * \$250/\text{MWh} * 500 \text{ MW} = \$6,250$ , six percent of the benefit. The Market Monitor's proposed penalty would equal only twelve percent of the benefit. While the scenario is unlikely to be repeated for fifteen days, PJM's proposed penalty reaches a maximum of only  $\$93,750$  per hour. The Market Monitor's proposed penalty would exceed the hourly benefit on the ninth day.

While the Market Monitor supports the simple formulation of the proposed penalty, the Market Monitor proposes to increase the penalty by a factor of two by making it applicable separately for both day-ahead and real-time market offers. The change provides a greater market incentive for competitive behavior. It also provides the Market Seller an opportunity to decrease the resulting penalty by revising the cost-based offer in the market rebid period so that the penalty applies only to the day-ahead offer. PJM's proposal would apply the same penalty amount whether or not the Market Seller revises the cost-based offer.

A penalty sufficiently large to deter market power abuse under extreme market conditions would be punitive under normal market conditions. Only referral to the Commission will adequately deter market power abuse in this scenario. Company B's use of the unverifiable fuel cost in the first example should constitute a tariff violation. The OATT should complement the penalty provisions with the Market Monitor's recommended review for algorithmic, verifiable and systematic fuel cost policies and short run marginal costs. Only under the Market Monitor's recommendations would there be, in addition to the penalties, a market rule, enforceable by the Commission, to deter the exercises of market power illustrated here and others.

## **G. The August 16<sup>th</sup> Filing Fails to Address Other Issues in the June 17<sup>th</sup> Order and Creates New Issues.**

### **1. Short Run Marginal Costs**

The August 16<sup>th</sup> filing proposes the definition of costs in the energy market that are not short run marginal costs. The proposal contradicts a statement in the November 20<sup>th</sup> Filing that “cost-based offers are based on the short run marginal cost.”<sup>62</sup> PJM proposes to define a “Maintenance Adder” and “Start Additional Labor Costs” in Section 1 of the OATT. These costs are recoverable in the capacity market and should not be additionally recoverable in the energy market. The persistence of these legacy costs in outdated Manual 15 does not justify their inclusion as short run marginal costs in energy market cost-based offers.

The August 16<sup>th</sup> filing defines the Maintenance Adder for energy market cost-based offers:

PJM is proposing define [sic] Maintenance Adders as ‘an adder that may be included to account for variable operation and maintenance expenses in a Market Seller’s Fuel Cost Policy. The Maintenance Adder is calculated in accordance with the applicable provisions of PJM Manual 15, and may only include expenses incurred as a result of electric production.’<sup>63</sup>

Manual 15 refers to various FERC accounts that include fixed costs. For example, FERC Accounts 512, 513, and 553 “include the cost of labor, materials used and expenses incurred in the maintenance of...plant.” The account covers all fixed and variable, short run and long run, maintenance costs. In the case of fossil steam plants, the Manual provides some restriction by using the term “incremental.”<sup>64</sup> It provides no examples or details for

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<sup>62</sup> August 16<sup>th</sup> Filing at 4.

<sup>63</sup> *Id.* at 26 n.49.

<sup>64</sup> Manual 15 § 4.6.



interpretation. The maintenance section for combined cycles is internally inconsistent. The Manual does not specify the term “incremental” for combined cycles.<sup>65</sup> It describes the approval process for Long Term Service Agreement (“LTSA”) costs.<sup>66</sup> The following subsection removes “major inspection and overhaul expenses,” which includes LTSA costs.<sup>67</sup> The combustion turbine section states the use of “total dollars” for FERC Account 553, with the later exclusion of “major inspection and overhaul expenses” that had been previously approved but does not for diesel engines.<sup>68</sup>

Attachment DD of the OATT defines Avoidable Maintenance Expenses for the RPM Avoidable Cost Rate (“ACR”):

AME (Avoidable Maintenance Expenses) consists of avoidable maintenance expenses (other than expenses included in AOML) related directly to the generating unit for the twelve months preceding the month in which the data must be provided. The categories of expenses included in AME are those incurred for: (a) chemical and materials consumed during maintenance of the generating unit; and (b) rented maintenance equipment used to maintain the generating unit.<sup>69</sup>

Attachment DD of the OATT defines Avoidable Operations and Maintenance Labor for the RPM Avoidable Cost Rate:

AOML (Avoidable Operations and Maintenance Labor) consists of the avoidable labor expenses related directly to operations and maintenance of the generating unit for the twelve months preceding the month in which the data must be provided. The categories of expenses included in AOML are those incurred for: (a) on-site based labor engaged in operations and maintenance

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<sup>65</sup> Manual 15 § 5.6.

<sup>66</sup> Manual 15 § 5.6.1.

<sup>67</sup> Manual 15 § 5.6.2.

<sup>68</sup> Manual 15 § 6.6.

<sup>69</sup> OATT Attachment DD § 6.8(a).

activities; (b) off-site based labor engaged in on-site operations and maintenance activities directly related to the generating unit; and (c) off-site based labor engaged in off-site operations and maintenance activities directly related to generating unit equipment removed from the generating unit site.<sup>70</sup>

Like the FERC Accounts, the Attachment DD language includes all maintenance and labor used for maintenance.

The August 16<sup>th</sup> filing also defines Start Additional Labor Costs for energy market cost-based offers:

PJM is proposing to define “Start Additional Costs” as “[a]dditional labor costs for startup required above normal station manning levels.”<sup>71</sup>

These labor costs may also be recovered in the ACR, Avoidable Operations and Maintenance Labor. The cost of staffing a station for startup is a cost for availability of the unit to provide energy. It is not a short run marginal cost.

Sufficient revisions to Manual 15 to prevent double recovery of these costs in PJM’s Energy and RPM Markets has not been made in the nine years since the inception of the RPM Market, when the Attachment DD Avoidable Cost Rate language went into effect.<sup>72</sup> Attachment DD includes language to prevent short run marginal costs from being recovered in the capacity market:

For the purpose of determining an Avoidable Cost Rate, avoidable expenses shall exclude variable costs recoverable under cost-based offers to sell energy from operating capacity on the PJM Interchange Energy Market under the Operating Agreement.<sup>73</sup>

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<sup>70</sup> OATT Attachment DD § 6.8(a).

<sup>71</sup> August 16<sup>th</sup> Filing at 26 n.50.

<sup>72</sup> See *PJM Interconnection, L.L.C.*, 116 FERC ¶ 61,331 (2006).

<sup>73</sup> OATT Attachment DD § 6.8(c).

The Market Monitor and PJM promote the view that the corollary that prevents the recovery of avoidable costs in the energy market also applies.<sup>74</sup> The details for calculating cost-based offers in Manual 15 are not consistent with this tariff provision. The Commission cannot rely on current Manual 15 definitions, or timely updates to Manual 15, to provide Market Sellers with the necessary details to calculate cost-based offers consistent with the tariff.

During its current reviews of cost-based offers under Attachment M, the Market Monitor calls into question items includable under Manual 15, such as maintenance and labor costs, and Market Sellers make appropriate revisions to their cost-based offers. The current Attachment M process calls for review of cost-based offers for market power concerns and for reasonableness in addition to compliance with Manual 15.<sup>75</sup> Consistent with the purpose of cost-based offers for market power mitigation and interpretative FERC orders, the Market Monitor promotes the reading of “incremental” costs as “short run marginal” costs.<sup>76</sup> The August 16<sup>th</sup> filing defines components of energy costs that are not

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<sup>74</sup> See August 16<sup>th</sup> Filing at 26 (“Maintenance Adders cannot include any costs that are included in the generation resource’s Avoidable Cost Rate.”).

<sup>75</sup> OATT Attachment M § IV.E-1 and Attachment M–Appendix § II.A.2.

<sup>76</sup> OATT Schedule 1 § 6.4.2; see also 18 CFR Part 35 Offer Caps in Markets Operated by Regional Transmission Organizations and Independent System Operators, Notice of Proposed Rulemaking, Docket No. RM16-5-000, 154 FERC ¶ 61,038 at P 2 (2016) (“The Commission preliminarily finds that the offer cap [footnote omitted] on incremental energy offers (offer cap) may no longer be just and reasonable for several reasons. The offer cap may unjustly prevent a resource from recouping its costs by not permitting that resource to include all of its short-run marginal costs within its energy supply offer (supply offer). The offer cap may result in unjust and unreasonable rates because it can suppress LMPs to a level below the marginal cost of production. Further, because of the offer cap, a resource with short-run marginal costs above that cap may choose not to offer its supply to the RTO/ISO, even though the market may be willing to purchase that supply.[footnote omitted] Finally, when several resources have short-run marginal costs above the offer cap but are unable to reflect those costs within their incremental energy offers due to the offer cap, the RTO/ISO is not able to dispatch the most efficient set of resources because it will not have access to the underlying costs associated with the multiple incremental energy offers above the offer cap.”).

short run marginal costs. Inclusion of these components in cost-based offers raises market power concerns and creates unreasonable double recovery in the markets. The Commission's acceptance of these cost definitions based on outdated Manual 15 language would undermine the accuracy and enforceability of the market power review of cost offers. The Market Monitor provides a just and reasonable alternative, which the Commission required for the Southwest Power Pool market, to define all costs in cost-based energy offers to be short run marginal costs.<sup>77</sup> All other costs that are not sunk are recoverable through the ACR. A short run marginal cost definition for cost-based energy, start, and no load offers would provide needed consistency across PJM's markets and would align all provisions related to cost-based offers with their intent and purpose, effective market power mitigation.

## **2. Threshold to Trigger Cost Based Offer Updates**

In the June 17<sup>th</sup> Order, the Commission directed (at P 71) PJM: "[E]xplain in detail and ... include examples in its compliance filing as to why the \$5/MWh threshold is a reasonable amount" and "how it proposes to use this threshold in conjunction with the ten percent adder that is currently included in cost-based offers."

### ***a. PJM Compliance filing***

PJM states that it conducted an exhaustive analysis to examine what the appropriate threshold should be and concluded that \$5/MWh is a reasonable and justifiable amount. PJM states:<sup>78</sup>

For example, based on PJM's analysis, PJM determined that utilizing a \$5/MWh threshold, in 2015 at TETCO 3, a cost-based offer based on an average heat rate would need to be updated 10% of the time by the Market Seller, whereas in 2016, a cost-based

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<sup>77</sup> *Southwest Power Pool, Inc.*, 141 FERC ¶ 61,048 at P 420 (2012).

<sup>78</sup> August 16<sup>th</sup> Filing at 60–61.

offer based on an average heat rate at TETCO 3 would need to be updated 5% of the time.

Based on PJM's analysis, in most years and on most of the studied hubs, a \$5/MWh threshold would result in Market Sellers needing to adjust their cost-based offers downward between 5% and 10% of the time when they also submit a market-based Real-time Offer. In other words, if a \$5/MWh threshold is used, PJM is confident that between approximately 90% and 95% of the time, even if an available cost-based offer is not compliant with Operating Agreement, Schedule 2 or the PJM Manuals at the time a Market Seller submits a market-based Real-time Offer for an applicable clock hour, the current price of such available cost-based offer for that clock hour will not exceed the Market Seller's estimation of its new cost-based offer for the hour by more than \$5/MWh.

***b. IMM Response to PJM Compliance filing***

The Market Monitor requested and received the methodology used by PJM for its analysis. The analysis does not support PJM's conclusions on the percent of time when cost based offer updates would be triggered. The analysis makes unrealistic assumptions on what triggers an update to offers. Realistic assumptions are important because PJM proposes that market sellers update cost based offers in real time when two conditions are met: (i) the market seller updates their market-based offer in real time; and (ii) the market seller's current incremental portion of the available cost-based offer exceeds its estimate of the new incremental portion of cost based offer by at least \$5/MWh.

In order to estimate the percent of time a cost based offer update is triggered using PJM's defined triggers, one must estimate how many times a market-based offer is updated, and then estimate for those instances how many times the intraday fuel price decreases from the previous estimate to result in at least a \$5/MWh decrease to a resource's offer. PJM's analysis does neither. PJM assumes that market sellers use a known gas price index for the day-ahead offer and update it once the next day's gas price index is published. Neither of those assumptions is true. Market sellers estimate the cost of gas for the day-ahead offer prior to the day-ahead offer deadline for gas consumed the next electric operating day, which spans two gas days. Once the gas market price indices for the next gas

day (that begins at 10:00 a.m. EPT during the electric day) are published, market sellers have a better idea on the cost of gas for the next gas day. For any purchases during the electric operating day, the market seller depends on the intraday gas market to determine the cost of fuel. So the fuel prices that trigger real-time updates to offers are the market seller's estimate for cost of gas any time after 10:30 a.m. (the deadline for the Day-Ahead Energy Market) the day before the electric operating day. It is not the gas price index on one day compared to the previous day's index. PJM's assertion that for "most of the hubs" PJM used, cost-based offers have decreased from the previous hour's cost-based offer by \$5/MWh only five to ten percent of the time "in most years" does not reflect the true triggers for offer updates.

The time thresholds that PJM uses to justify the trigger are irrelevant. A dollar per MWh threshold that results in changes five or ten percent of the time is not an appropriate threshold. If the intent of the market rules was to minimize the number of updates, PJM's five and ten percent of the time thresholds would have made sense. But that is not the intent. The intent of the rule is to ensure accuracy in cost based offers based on the most up to date information available to market sellers. PJM went from using an arbitrary cost threshold of \$5/MWh to using a study with arbitrary assumptions and arbitrary time thresholds (five to ten percent) and vague assertions of confidence that have no basis in statistical inference, to justify the \$5/MWh threshold.

Further, PJM does not clarify the part of the incremental portion of the offer to which the \$5/MWh threshold applies. Is it the incremental offer at economic minimum point, the incremental offer at economic maximum point, or does the current incremental offer have to exceed the new estimated incremental offer by at least \$5/MWh for every point along the incremental curve? Incremental offer curves may change by different amounts at different MWh levels for a given change in fuel cost. PJM's compliance filing fails to justify why no-load costs are excluded in the trigger for updating cost-based offers. In order to include the

no-load costs as well as incremental cost, the Market Monitor proposed to use the operating rate at the economic maximum MW point as a trigger for updating cost-based offers.<sup>79</sup>

PJM also fails to justify why, when a market seller has enough incentive to update the market-based offer, the market seller should not be required to update the cost-based offer to be compliant with Schedule 2 of the Operating Agreement and the PJM Manuals, regardless of the magnitude of change in costs. PJM's proposed threshold, intended to minimize the administrative burden and to address the compliance risk associated with small changes to costs, instead creates a safe harbor provision for inaccurate cost-based offers.

As the Commission noted in the June 17<sup>th</sup> order, it is critical that market sellers make accurate and timely updates to their cost-based offers.<sup>80</sup> The Market Monitor proposed that market sellers be required to update cost-based offers when the Operating Rate at economic maximum MW level decreases by at least \$1/MWh.<sup>81</sup> The Market Monitor also proposed that any unit for which costs change be required to update cost-based offers to be compliant with Schedule 2 of the PJM Operating Agreement subject to the thresholds defined, regardless of whether the unit updates its market-based offer. If a market seller chooses to not use hourly offers, they can opt out of hourly offer flexibility provisions on a monthly basis by no later than the 15<sup>th</sup> day of the prior month.<sup>82</sup>

The Market Monitor's proposal ensures that cost-based offers are accurate if a market seller wishes to use the hourly offer functionality. The threshold of \$1/MWh is only

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<sup>79</sup> See Comments of the Independent Market Monitor For PJM, Docket No. ER16-372 (March 28, 2016) at 6–8.

<sup>80</sup> June 17<sup>th</sup> Order at P 71.

<sup>81</sup> See Comments of the Independent Market Monitor For PJM, Docket No. ER16-372 (March 28, 2016) at 6.

<sup>82</sup> *Id.* at 6–7.

meant to ensure that small changes to costs do not result in compliance risk for market sellers while also not creating a safe harbor for exercising market power. The Market Monitor’s proposal to base the trigger on operating rate instead of incremental offer ensures that there is no ambiguity on what point along the incremental curve a threshold should apply to, and that market sellers do not circumvent this requirement by simply adjusting no-load costs without updating incremental costs.

### **3. The August 16<sup>th</sup> Filing Lacks Adequate Rules for Offer Parameters and Appropriate Definitions for Key Terms.**

In the June 17<sup>th</sup> Order (at P 33), the Commission required PJM to include “rules for the offer parameters that are subject to flexible hourly offers and the appropriate definitions for various terms.” The June 17<sup>th</sup> Order further directed (at P 80) that PJM include additional defined terms, including the “three key offer parameters, incremental energy offer, start-up costs, and no-load costs,” and the term “Flexible Resources.”

#### ***a. Three Part Offer Definition***

The August 16<sup>th</sup> Filing includes overly restrictive definitions for the three part offer that do not clearly distinguish between the price-based and cost-based offer. Under current PJM Market Rules, each component of the offer communicates the Market Seller’s compensation request for commitment and dispatch of the resource by PJM. Other than the system offer cap, the request is unlimited for market-based offers. The request represents short run marginal costs for the cost-based offer. The August 16<sup>th</sup> Filing proposes a price-based offer definition for Incremental Energy Offer. The definition needs a cost-based Incremental Energy Offer clarification. The August 16<sup>th</sup> Filing proposes cost-based definitions for Start-up Cost and No-load Cost, which would restrict them from the inclusion of markup over short run marginal cost. The Market Monitor supports the proposed exclusion of markup from these offer parameters.

#### ***b. Incremental Energy Offer***

The market-based Incremental Energy Offer is a set of price and quantity segments presenting the Market Seller’s request for compensation, in dollars per MWh, for dispatch



of an online resource to the indicated output levels, in MW, for the applicable operating hours. A cost-based Incremental Energy Offer equals the short run marginal cost, in dollars per MWh, of providing energy from an online resource at indicated output levels, in MW, for the applicable operating hours.

PJM proposes the following definition for the Incremental Energy Offer:<sup>83</sup>

“Incremental Energy Offer” shall mean bid/offer segments comprised of a pairing of price (in dollars per MWh) and megawatt quantities, which taken together produce all of the energy segments above a resource’s Economic Minimum. No-load Costs are not included in the Incremental Energy Offer.

The proposed definition overly restricts the price and quantities that may be included in the Incremental Energy Offer. For example, in the case of block-loaded units, Market Sellers frequently and appropriately include no-load costs in incremental energy prices. For accuracy in representing short run marginal costs, Market Sellers also include a zero MW point in the curve, below the Economic Minimum. The proposed definition lacks a key characteristic of incremental offers, that all incremental offers must be non-decreasing function. PJM enforces this requirement through its market tools but there is no explicit rule in the PJM tariff. The proposed definition should also refer to offers and not refer to bids as this could be misinterpreted.

*c. Start-up Cost*

A Start-up Cost equals the short run marginal cost, in dollars per start, to synchronize a generation resource to the grid from up to three different temperature states. For simplicity and to avoid the creation of a fourth component of an energy offer, the Start-up Cost also includes the short run marginal cost of shutting down a generation resource after it is no longer synchronized to the grid. The energy market requires the specification of Start-up Cost to create an upward sloping supply curve.

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<sup>83</sup> August 16<sup>th</sup> Filing at 56.

PJM proposes the following definition for the Start-up Cost:<sup>84</sup>

“Start-Up Costs” shall mean the unit costs to bring the boiler, turbine and generator from shutdown conditions to the point after breaker closure which is typically indicated by telemetered or aggregated state estimator megawatts greater than zero and is determined based on the cost of start fuel, total fuel-related cost, performance factor, electrical costs (station service), start maintenance adder, and additional labor cost if required above normal station manning. Start-Up Costs can vary with the unit offline time being categorized in three unit temperature conditions: hot, intermediate and cold.

The proposed definition includes two components that are not short run marginal costs, the start maintenance adder and the additional labor cost. It does not include shutdown costs that Market Seller’s currently and appropriately include under PJM Manual 15.<sup>85</sup> It includes in the definition a “typical” method for PJM to estimate when a breaker closes which is not relevant. It does not specify how the Start-up Cost should be determined for generation resources with multiple breakers such as combined cycles.

*d. No-load Cost*

A No-load Cost equals the short run marginal costs, in dollars per hour, required to calculate a non-decreasing incremental energy cost curve for an online, dispatchable resource. It includes the same cost components as the cost-based Incremental Energy Offer. The energy market requires the specification of No-load Cost, for resources with decreasing short run marginal costs over some output range, in order to create a non-decreasing supply curve which is a requirement of the PJM optimization process.<sup>86</sup>

PJM proposes the following definition for No-load Cost:

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<sup>84</sup> *Id.* at 53.

<sup>85</sup> PJM Manual 15: Cost Development Guidelines § 3.4, Rev. 27 (April 20, 2016).

<sup>86</sup> The terms non-decreasing, flat/upward sloping, and as monotonically increasing are all substitutes.

“No-load Cost” shall mean the hourly cost required to create the starting point of a monotonically increasing incremental offer curve for a generating unit.

The proposed definition is imprecise in its focus on the starting point of the offer curve. It does not address the relevant components of cost.

#### **4. Flexible Resource Definition**

In response to the Commission’s order, PJM submitted tariff language that defines a Flexible Resource. PJM is changing which resources will be eligible for lost opportunity cost credits when scheduled in the Day-Ahead Energy Market and not committed in real time. PJM is proposing to only compensate Flexible Resources for this type of LOC instead of all combustion turbines. PJM is defining Flexible Resources as a generating resource that must have a combined Startup Time and Notification Time equal to or less than two hours and a Minimum Run Time equal to or less than two hours. This definition is a step forward to providing clarity about what types of resources are considered flexible by PJM’s operators, but this definition does not require as much flexibility as the actual capability of unit types typically considered flexible (combustion turbines and diesel engines) and it is not based on actual physical operational characteristics.

Operating parameters should be based on original equipment manufacturer (OEM) capability. The definition of Flexible Resource should be refined to include only resources with a combined Startup Time and Notification Time equal or less than 30 minutes and a Minimum Run Time equal or less than 60 minutes on all of the resource’s cost-based and price-based offers. The last requirement is important because a resource could meet the flexible parameter requirement on its cost-based offer but not in its price-based offer. PJM should only compensate the resource for providing flexible generation to the market when it has the verified physical capability to do so, as indicated by its cost-based offers, and indicates its willingness to do so, as indicated by its price-based offers.

## 5. Flexibility Rules and Limitations for Offer Parameters

The June 17<sup>th</sup> Order directed (at P 81) that the rules (i) “allow resources to pursue strategies to best procure fuel and minimize costs,” and (ii) “indicate what limitations apply to submission of offer parameters and specify any limitations on when these parameters can be changed in the hourly updates.” The June 17<sup>th</sup> Order further directed that PJM “clarify provisions relating to the minimum run time offer parameter and indicate whether a resource will be permitted to submit day-ahead offers with minimum run times that vary by hour and whether a resource can change its minimum run time between the day-ahead and real-time markets,” and “provide a general rules framework for offer parameters, including a specification of what limitations, if any, PJM is proposing for these parameters and when these parameters can or cannot be changed.”

PJM’s proposed revised tariff states:<sup>87</sup>

For generation resource offers, Market Sellers may vary for each clock hour during the entire Operating Day the following offer parameters: (1) cost-based Start-up Costs; (2) cost-based No-load Costs; (3) Incremental Energy Offer; (4) Economic Minimum and Economic Maximum; (5) emergency minimum MW and emergency maximum MW; and (6) for Real-time Offers only, notification time; and Minimum Run Time.

The August 16<sup>th</sup> Filing explains:<sup>88</sup>

Notification time and Minimum Run Time are factors known at the time sellers submit offers into the Day-ahead Energy Market, and there is no valid reason for varying these parameters hourly in such offers. However, because unexpected operational issues may arise in real-time, PJM is proposing to allow hourly granularity for notification time and Minimum Run Time in Real-time Offers.

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<sup>87</sup> PJM Proposed OATT § 1.10.9B (b).

<sup>88</sup> August 16<sup>th</sup> Filing at 53.

PJM is correct that there is no valid reason for offering Minimum Run Time and Notification Time that vary by hour in the Day-Ahead Energy Market. Resources should be allowed to update their Minimum Run Time and Notification Time in real time to reflect operational issues that may arise during the operating day. However, PJM's proposed language in the compliance filing goes beyond what is necessary to let resources update these parameters in real time in response to operational issues. PJM also changed its proposal from what it stated in the deficiency letter response. The matrix submitted in the deficiency letter response states that PJM proposes to allow hourly frequency for Minimum Run Time updates but daily granularity for each schedule. This means that market sellers could update a resource's Minimum Run Time during the operating day and the updated value would apply for the rest of the operating day, unless another update was made. PJM should have filed tariff revisions consistent with this proposal. However, the proposed tariff language states instead: "Market Sellers may vary for each clock hour during the entire Operating Day...(6) for Real-time Offers only, notification time; and Minimum Run Time." This language suggests that resources can offer Minimum Run Times that vary by hour for the rest of the operating day in their real time offers with no operational justification. As the transmittal letter states, PJM now proposes to have hourly granularity for Minimum Run Time. There is no reason for a resource to update its Minimum Run Time parameter during the operating day that varies for each hour remaining in the day. For example, PJM's proposed tariff rules would allow a generation resource to update its Minimum Run Time at noon to have a different value for 1:00, 2:00, and 3:00 p.m. In such a scenario, it is unclear what Minimum Run Time PJM dispatchers should use if they wish to schedule the resource.

PJM's compliance filing also fails to follow Commission regulations on compliance filings:

[F]ilings made to comply with Commission orders must include only those changes required to comply with the order. Such compliance filings may not be combined with other rate or tariff change filings. A compliance filing that includes other changes or

that does not comply with the applicable order in every respect may be rejected.<sup>89</sup>

The Commission should reject tariff language inconsistent with its compliance directives and direct that PJM file corrected tariff language, consistent with PJM's deficiency letter response, clarifying that real time updates to Minimum Run Time should be supported by documented operational issues that arise during the operating day.

Under the PJM proposal, generation resources will be able to update their Minimum Run Times in real time regardless of previous commitments. The Minimum Run Time parameter is key in determining the number of hours a resource must run, which may result in PJM making the resource whole if it did not recover its costs as submitted in its energy offer.

PJM did not propose any rule changes regarding how updates of a resource's Minimum Run Time may impact their make whole payments. Under the PJM proposal, generation resources will be made whole (paid operating reserve credits) based on the lower of the Committed and the Final Offer. This definition and any of the current operating reserve credit calculation rules do not take into account what would be the impact of extending the Minimum Run Time of a committed resource. If this issue is left unaddressed, market sellers could argue that they should be made whole in cases when their resources ran additional hours due to an extension of the Minimum Run Time.

#### **6. The August 16<sup>th</sup> Filing Lacks Adequate Rule for Mitigation of Self-Scheduled Resources.**

In the June 17<sup>th</sup> Order (at P 33), the Commission required the inclusion of "rules pertaining to the mitigation of self-scheduled resources."

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<sup>89</sup> 18 CFR § 154.203(b) (2009).

The June 17<sup>th</sup> Order further directed (at P 59) that PJM “submit Tariff and Operating Agreement revisions to explicitly state that the economic portion of offers submitted by self-scheduled resources is subject to the three pivotal supplier test and potential mitigation.”

In response, PJM included in section 6.4 of Schedule 1 to the OA that “Resources that are self-scheduled to run in either the Day-ahead Energy Market or the Real-time Energy Market are subject to the provisions of this section 6.4.” PJM included this clarification in subsection 6.4.1(a). Subsection 6.4.1(e) still needs to include a broader description of which resources are subject to mitigation. Subsection 6.4.1(e) covers the application of the TPS test and the mitigation of the resources owned by generation owners that fail the test. Subsection 6.4.1(e) only refers to resources committed by PJM not self-scheduled resources. PJM should clarify that resources dispatched by PJM will also be subject to the TPS test. This clarification will also be consistent with another clarification made by PJM in section 6.4.1(f)(iv), which makes self-scheduled units subject to mitigation.

The June 17<sup>th</sup> Order further directed (at P 86), “Because PJM does not propose to prevent a self-scheduled resource that offers a portion of its supply to the market on an economic basis from updating its offer between the day-ahead and real-time markets, the term Committed Offer should be amended to accommodate the fact that self-scheduled resources can change their offers.” The June 17<sup>th</sup> Order also directed (*Id.*), “The Committed Offer of a self-scheduled resource that clears the real-time market at a point on its economic incremental energy offer curve that is above its self-scheduled quantity should be the market-based or cost-based offer upon which the resource cleared the real-time market.”

In response to the Commission’s order, PJM included that “for self-scheduled resources, either the offer on which the Market Seller has elected to schedule the resource or the applicable offer for the resource determined pursuant to Operating Agreement, Schedule 1, section 6.4, or Operating Agreement, Schedule 1, section 6.6 for a particular clock hour for an Operating Day.” The proposed language is unclear and potentially confusing. Currently, self-scheduled resources do not select the offer on which they clear the energy market. Because currently they are not subject to mitigation, self-scheduled

resources clear the energy market on their price-based offer by default and only clear the energy market on their cost-based offer if the price-based offer is not available. The reference to the “applicable offer” is ambiguous because it fails to specify whether the offer on which the resource is scheduled or the offer on which the resource is dispatched is meant. The Committed Offer should simply be defined as the offer on which a resource was scheduled by either PJM or the Market Seller.

## **7. Local Market Power Mitigation**

The June 17<sup>th</sup> Order (at P 54) determined that “PJM’s proposal lacks sufficient information about how PJM will apply the existing three pivotal supplier test to hourly offers and that this lack of detail could create uncertainty for market participants.” The Commission further stated (at P54):

[W]e reject PJM’s proposal and direct PJM to specify in its Tariff and Operating Agreement the manner in which a resource’s offer is mitigated when that resource offer fails the three pivotal supplier test. PJM should include in the Tariff and Operating Agreement provisions clarifying that if a resource’s offer fails the three pivotal supplier test, that resource’s offer is mitigated for the resource’s entire run time. Similarly, we direct PJM to include within its Tariff and Operating Agreement the formula PJM uses to determine the lower of a resource’s cost-based offer and market-based offer, which, as noted above, involves calculating the dispatch cost of each offer.

In response, PJM submitted tariff language that describes how it determines the offer on which a resource is committed when the Market Seller of the generation resource fails the three pivotal supplier test.

For the Day-Ahead Energy Market, PJM proposes to use the offer that results in the lowest overall system production cost.<sup>90</sup> For the Real-Time Energy Market, PJM proposes to change the method for determining the cheaper of the market based and cost based offer

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<sup>90</sup> PJM proposed revised OATT § 6.4.1(a).



from what PJM stated in the deficiency letter response. PJM's new formula for dispatch cost is defined as:<sup>91</sup>

$$\text{Dispatch cost} = ((\text{Incremental Energy Offer @ EcoMin } [\$/\text{MWH}] * \text{EcoMin } [\text{MW}]) + \text{No Load Cost } [\$/\text{H}] ) * \text{Min Run Time } [\text{H}] + \text{Startup Cost } [\$].^{92}$$

Further, PJM states that for resources that are operating in real time, Minimum Run Time and Start-Up costs are not considered. Thus, the dispatch cost for a resource operating in real time would be:

$$\text{Dispatch cost} = (\text{Incremental Energy Offer @ EcoMin } [\$/\text{MWH}] * \text{EcoMin } [\text{MW}]) + \text{No Load Cost } [\$/\text{H}]$$

In comparison, PJM's formula as stated in the deficiency letter response was:

$$\text{Dispatch cost} = \text{Marginal cost @ Economic minimum output} + \text{Fixed cost adder}$$

$$\text{where Fixed cost adder} = \text{Startup cost}/(\text{Economic maximum output} * \text{Minimum run hours}) + \text{No-load cost}/\text{Economic maximum output}^{93}$$

PJM does not justify its decision to change the method for determining the lower of the cost based and market based offers for resources whose owners fail the TPS test.

The Market Monitor has demonstrated that regardless of which of the two methods PJM uses, it allows resources, whose owners fail the TPS test, to circumvent mitigation by strategically offering varying markup and using operating parameters.<sup>94</sup> This results in unjust and unreasonable rates because it permits generation resources whose owners have

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<sup>91</sup> PJM proposed revised OATT § 6.4.1(g).

<sup>92</sup> PJM proposed revised OATT § 6.4.1(g).

<sup>93</sup> PJM Deficiency Letter Response at 18.

<sup>94</sup> Protest of the Independent Market Monitor for PJM, Docket Nos. EL15-73-000 & ER16-372-000 (December 14, 2016) at 18-21.

failed the market power screen to set prices above the competitive level, thus exercising market power.

PJM went beyond what was directed in the Commission's June 17<sup>th</sup> Order and proposes changes to the Dispatch Cost formula that it uses to determine the cheaper of the cost based and market based offers in the Real-Time Energy Market. The proposal is beyond the scope of a compliance filing and should be rejected.<sup>95</sup> Because the August 16<sup>th</sup> Filing fails to explain why the current approach is not just and reasonable, and fails to support its new approach, the burden under Section 206 of the Federal Power Act is not met even if a complaint proceeding were allowed to be joined to this compliance proceeding contrary to Commission policy.<sup>96</sup>

*a. Duration of Offer Capping*

The August 16<sup>th</sup> Filing includes new tariff language that describes the duration of mitigation in both the Day-Ahead and Real-Time Energy Markets. The proposed language states that in the Day-Ahead Energy Market, mitigated resources will be offer capped for the entire commitment period. The proposed language states that in the Real-Time Energy Market, resources are offer capped "until the earlier of: (i) the resource is released from its commitment by the Office of the Interconnection; (ii) the end of the Operating Day; or (iii) the start of the generation resource's next pre-existing commitment."<sup>97</sup>

The Market Monitor agrees with PJM's proposed language for the Day-Ahead Energy Market, since it is consistent with what PJM described in response to the Commission's request for information.

The Market Monitor does not agree with PJM's changes to the duration of mitigation for resources committed in the Real-Time Energy Market. PJM's use of the end of the

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<sup>95</sup> 18 CFR § 154.203(b) (2009).

<sup>96</sup> *Id.*

<sup>97</sup> PJM Proposed OATT § 6.4.1 (a) (August 16, 2016).

operating day as a trigger for ending mitigation does not comply with the Commission's directive in this proceeding. The June 17<sup>th</sup> Order (at P 54) directed that: "PJM should include in the Tariff and Operating Agreement provisions clarifying that if a resource's offer fails the three pivotal supplier test, that resource's offer is mitigated for the resource's entire run time." If PJM commits a resource for a duration that spans multiple operating days either because of its Minimum Run Time or because PJM deems the resource is needed for reliability, and the resource owner fails the TPS test at the time of commitment, it should be offer capped for its entire run time, regardless of whether the commitment crosses over into the next operating day. Otherwise, the rules would provide an opportunity to exercise market power. The Market Monitor recommends that PJM remove the second of the three scenarios and update the language to:

For such generation resources committed in the Real-time Energy Market such offer prices shall be capped until the earlier of: (i) the resource ~~is~~ being released from its commitment by the Office of the Interconnection; ~~(ii) the end of the Operating Day;~~ or (iii) the start of the generation resource's next pre-existing commitment.

## 8. Other Issues

### *a. Market Seller vs Generation Owner vs Generation Supplier*

PJM introduces a new term Market Seller but continues to use "generation supplier" in other instances while describing the three pivotal supplier test. For example, (6.4.1 (e)) of the proposed OATT states (emphasis added):<sup>98</sup>

Offer price caps under section 6.4 of this Schedule shall be suspended for a generation resource with respect to transmission limit(s) for any ~~hour~~period in which a generation resource is committed by the Office of the Interconnection for the Operating Day where (1) there are not three or fewer *generation suppliers* available for redispatch under subsection (a) that are jointly pivotal with respect to such transmission limit(s), and (2) the

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<sup>98</sup> PJM proposed revised OATT § 6.4.1(e).

**Market Seller** of the generation resource's ~~owner~~, when combined with the two largest other *generation suppliers*, is not pivotal ("three pivotal supplier test"). In the event the Office of the Interconnection system is unable to perform the three pivotal supplier test for a **Market Seller**, generation resources of that **Market Seller** that are dispatched to control transmission constraints will be dispatched on the resource's market-based offer or cost-based offer which results in the lowest overall dispatch cost as determined in accordance with section 6.4.1(g).

Proposed section 6.4.1(f)(iii):

Offer price caps will apply on a generation supplier basis (i.e. not a generating unit by generating unit basis) and only the generation suppliers that fail the three pivotal supplier test **with respect to any hour in the relevant period** will have their units that are dispatched with respect to the constraint offer capped. A generation supplier for the purposes of this section includes corporate affiliates. Supply controlled by a generation supplier or its affiliates by contract with unaffiliated third parties or otherwise will be included as supply of that generation supplier; supply owned by a generation supplier but controlled by an unaffiliated third party by contract or otherwise will be included as supply of that third party.

A generation supplier's units, **including self-scheduled units**, are offer capped if, when combined with the two largest other generation suppliers, the generation supplier is pivotal.

The Operating Agreement defines the term 'Market Seller' to mean:

[A] Member that has met reasonable creditworthiness standards established by the Office of the Interconnection and that is otherwise able to make sales in the PJM Interchange Energy Market.

PJM's use of the term Market Seller in the proposed language introduces confusion and is misleading. The three pivotal supplier test score has always been and should be calculated at the owner level. Section 6.4.1(f)(iii) contains further detail and description of what a generation supplier is for the purposes of the three pivotal supplier test. Section 6.4.1(f)(iv) contains further detail on the types of supply and demand included in the Day-Ahead Energy Market for the three pivotal supplier test. The Market Monitor recommends

that PJM continue to use generation supplier in Section 6.4.1(e), consistent with its practice for the three pivotal supplier test, and consistent with Section 6.4.1(f)(iii), so as to not introduce confusion about the calculation of the TPS test score.

***b. LOC Deviation***

The June 17<sup>th</sup> Order directed PJM (at P 90) to clarify whether resources will be under compensated for LOC credits in situations when the real-time price is between the Final Offer and Committed Offer, as it has not been addressed in the proposal.

In response, PJM submitted two numerical examples showing how their proposed LOC calculation would work when the real-time LMP is between the Final Offer and the Committed Offer. In example 1, PJM showed a scenario in which the Committed Offer is higher than the Final Offer. In this example, the resource does not receive LOC compensation even when the resource's output is reduced by PJM. This is true when the real time LMP is \$40 per MWh, but not true when the real time LMP is higher than \$40 per MWh. The Market Monitor used the same data in the example in order to show a range of outcomes using different levels of the real-time LMP. The Market Monitor calculated the LOC compensation using 1) the Final Offer, 2) the Committed Offer and 3) PJM proposed method. Table 1 shows the results. The result is that the LOC compensation using PJM's proposed method is lower than using the Final Offer or the Committed Offer when real-time LMP is higher than \$40 per MWh. This results in the resource being undercompensated.

**Table 1 PJM Example 1 LOC Analysis. LOC Compensation Comparison using Final Offer, Committed Offer and the PJM Proposal.**

Example 1: Committed Offer higher than Final Offer

		Committed Offer (\$/MWh)	Final Offer (\$/MWh)
Actual output (MWh)	200	20.00	10.00
Committed Offer at actual output (\$/MWh)	\$40.00	20.00	10.00
Final Offer at actual output (\$/MWh)	\$30.00		
Total Committed Offer at actual output (\$)	\$5,000.00		
Total Final Offer at actual output (\$)	\$3,000.00		

LOC using the Final Offer									
Scenario	Real-time LMP (\$/MWh)	Desired output (MWh)	Deviation (MWh)	Lost revenue (\$)	Area under offer curve at desired MWh (\$)	Area under offer curve at actual MWh (\$)	LOC Offer (\$)	LOC Credit (\$)	
A	\$35.00	225	25	\$875.00	\$3,812.50	\$3,000.00	\$812.50	\$62.50	
B (PJM Example 1)	\$40.00	250	50	\$2,000.00	\$4,750.00	\$3,000.00	\$1,750.00	\$250.00	
C	\$45.00	275	75	\$3,375.00	\$5,812.50	\$3,000.00	\$2,812.50	\$562.50	
D	\$50.00	300	100	\$5,000.00	\$7,000.00	\$3,000.00	\$4,000.00	\$1,000.00	
E	\$55.00	300	100	\$5,500.00	\$7,500.00	\$3,000.00	\$4,500.00	\$1,000.00	
F	\$60.00	300	100	\$6,000.00	\$8,000.00	\$3,000.00	\$5,000.00	\$1,000.00	

LOC using the Committed Offer									
Scenario	Real-time LMP (\$/MWh)	Desired output (MWh)	Deviation (MWh)	Lost revenue (\$)	Area under offer curve at desired MWh (\$)	Area under offer curve at actual MWh (\$)	LOC Offer (\$)	LOC Credit (\$)	
A	\$35.00	175	0	\$0.00	\$4,062.50	\$5,000.00	\$0.00	\$0.00	
B (PJM Example 1)	\$40.00	200	0	\$0.00	\$5,000.00	\$5,000.00	\$0.00	\$0.00	
C	\$45.00	225	25	\$1,125.00	\$6,062.50	\$5,000.00	\$1,062.50	\$62.50	
D	\$50.00	250	50	\$2,500.00	\$7,250.00	\$5,000.00	\$2,250.00	\$250.00	
E	\$55.00	275	75	\$4,125.00	\$8,562.50	\$5,000.00	\$3,562.50	\$562.50	
F	\$60.00	300	100	\$6,000.00	\$10,000.00	\$5,000.00	\$5,000.00	\$1,000.00	

LOC using PJM Proposal										
Scenario	Real-time LMP (\$/MWh)	Desired output (MWh) (1)	Deviation (MWh) (2)	Lost revenue (\$)	Area under offer curve at desired MWh (\$) (3)	Area under offer curve at actual MWh (\$ (3)	LOC Offer (\$)	LOC Credit (\$)	Result	
A	\$35.00	225	25	\$875.00	\$6,062.50	\$5,000.00	\$1,062.50	\$0.00	Correct	
B (PJM Example 1)	\$40.00	250	50	\$2,000.00	\$7,250.00	\$5,000.00	\$2,250.00	\$0.00	Correct	
C	\$45.00	275	75	\$3,375.00	\$8,562.50	\$5,000.00	\$3,562.50	\$0.00	Undercompensated	
D	\$50.00	300	100	\$5,000.00	\$10,000.00	\$5,000.00	\$5,000.00	\$0.00	Undercompensated	
E	\$55.00	300	100	\$5,500.00	\$10,000.00	\$5,000.00	\$5,000.00	\$500.00	Undercompensated	
F	\$60.00	300	100	\$6,000.00	\$10,000.00	\$5,000.00	\$5,000.00	\$1,000.00	Correct	

(1) PJM Proposal calculates the desired output based on the Final Offer

(2) PJM Proposal calculates the deviation based on the Final Offer

(3) PJM Proposal calculates the area under the curve using the desired output based on the Final Offer and values that output at the higher between the Committed Offer and the Final Offer

In example 2, PJM showed a scenario in which the Committed Offer is lower than the Final Offer. In this example, the resource does receive LOC compensation. PJM also argued that applying the Market Monitor's recommendation of using the Committed Offer would overcompensate the resource. The Market Monitor did the same analysis using the data in example 2 to show a range of outcomes using different levels. The result is that the resource would be overcompensated using the Market Monitor's recommendation. Table 2 shows the results.

**Table 2 PJM Example 2 LOC Analysis. LOC Compensation Comparison using Final Offer, Committed Offer and the PJM Proposal.**

Example 2: Committed Offer lower than Final Offer

		Committed Offer (\$/MWh)	Final Offer (\$/MWh)
Actual output (MWh)	200	0	\$20.00
Committed Offer at actual output (\$/MWh)	\$30.00	100	\$20.00
Final Offer at actual output (\$/MWh)	\$40.00	300	\$60.00
Total Committed Offer at actual output (\$)	\$3,000.00		
Total Final Offer at actual output (\$)	\$5,000.00		

LOC using the Final Offer									
Scenario	Real-time LMP (\$/MWh)	Desired output (MWh)	Deviation (MWh)	Lost revenue (\$)	Area under offer curve at desired MWh (\$)	Area under offer curve at actual MWh (\$)	LOC Offer (\$)	LOC Credit (\$)	
A	\$35.00	175	0	\$0.00	\$4,062.50	\$5,000.00	\$0.00	\$0.00	
B	\$40.00	200	0	\$0.00	\$5,000.00	\$5,000.00	\$0.00	\$0.00	
C (PJM Example 2)	\$45.00	225	25	\$1,125.00	\$6,062.50	\$5,000.00	\$1,062.50	\$62.50	
D	\$50.00	250	50	\$2,500.00	\$7,250.00	\$5,000.00	\$2,250.00	\$250.00	
E	\$55.00	275	75	\$4,125.00	\$8,562.50	\$5,000.00	\$3,562.50	\$562.50	
F	\$60.00	300	100	\$6,000.00	\$10,000.00	\$5,000.00	\$5,000.00	\$1,000.00	

LOC using the Committed Offer									
Scenario	Real-time LMP (\$/MWh)	Desired output (MWh)	Deviation (MWh)	Lost revenue (\$)	Area under offer curve at desired MWh (\$)	Area under offer curve at actual MWh (\$)	LOC Offer (\$)	LOC Credit (\$)	
A	\$35.00	225	25	\$875.00	\$3,812.50	\$3,000.00	\$812.50	\$62.50	
B	\$40.00	250	50	\$2,000.00	\$4,750.00	\$3,000.00	\$1,750.00	\$250.00	
C (PJM Example 2)	\$45.00	275	75	\$3,375.00	\$5,812.50	\$3,000.00	\$2,812.50	\$562.50	
D	\$50.00	300	100	\$5,000.00	\$7,000.00	\$3,000.00	\$4,000.00	\$1,000.00	
E	\$55.00	300	100	\$5,500.00	\$7,500.00	\$3,000.00	\$4,500.00	\$1,000.00	
F	\$60.00	300	100	\$6,000.00	\$8,000.00	\$3,000.00	\$5,000.00	\$1,000.00	

LOC using PJM Proposal										
Scenario	Real-time LMP (\$/MWh)	Desired output (MWh) (1)	Deviation (MWh) (2)	Lost revenue (\$)	Area under offer curve at desired MWh (\$) (3)	Area under offer curve at actual MWh (\$)	LOC Offer (\$)	LOC Credit (\$)	Result	
A	\$35.00	175	0	\$0.00	\$4,062.50	\$5,000.00	\$0.00	\$0.00	Correct	
B	\$40.00	200	0	\$0.00	\$5,000.00	\$5,000.00	\$0.00	\$0.00	Correct	
C (PJM Example 2)	\$45.00	225	25	\$1,125.00	\$6,062.50	\$5,000.00	\$1,062.50	\$62.50	Correct	
D	\$50.00	250	50	\$2,500.00	\$7,250.00	\$5,000.00	\$2,250.00	\$250.00	Correct	
E	\$55.00	275	75	\$4,125.00	\$8,562.50	\$5,000.00	\$3,562.50	\$562.50	Correct	
F	\$60.00	300	100	\$6,000.00	\$10,000.00	\$5,000.00	\$5,000.00	\$1,000.00	Correct	

(1) PJM Proposal calculates the desired output based on the Final Offer

(2) PJM Proposal calculates the deviation based on the Final Offer

(3) PJM Proposal calculates the area under the curve using the desired output based on the Final Offer and values that output at the higher between the Committed Offer and the Final Offer



The analysis shows that neither approach is correct in all instances and that there should be two different LOC calculations depending on whether the Committed Offer or the Final Offer is higher. When the Committed Offer is higher than the Final Offer, the LOC deviation should be calculated using the Committed Offer. When the Committed Offer is lower than the Final Offer, the LOC deviation should be calculated using the Final Offer. In no scenario should the LOC deviation be calculated using both the Committed and the Final Offer as PJM proposed.

*c. Miscellaneous Tariff Revision Issues*

**iv. Misplaced definitions**

PJM is proposing several definitions in the PJM tariff that are not proper definitions. For example, PJM is proposing to define the term Segment simply by referencing another section of the tariff.

Another example is the definition of LOC Deviation. The language proposed includes how the value is calculated. Due to the complexity of this term and the different values it could have depending on the type of resource or depending on how the resource is offered, it would be preferable to include this calculation in the rule that calculates LOC credits.

**v. Typographical Errors**

The first paragraph of section 1.10.9A of Schedule 1 of the Operating Agreement should specify 65 minutes, not 60 minutes.

The third paragraph of section 6.4.1 (a) of Schedule 1 of the Operating Agreement should specify offer capped not offered capped.

### III. CONCLUSION

The Market Monitor respectfully requests that the Commission afford due consideration to this protest as it resolves the issues raised in this proceeding.

Respectfully submitted,



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Dated: September 16, 2016

# **Attachment A**

## SCHEDULE 2 – COMPONENTS OF COST

(a) Each Market Participant obligated to sell energy on the PJM Interchange Energy Market at cost-based rates may include the following components or their equivalent in the determination of costs for energy supplied to or from the PJM Region:

- i. For incremental energy cost curves  
Fuel cost, heat rate, emissions allowance cost, variable operations and maintenance cost, opportunity costs
- ii. For no load costs  
Fuel cost, no load heat input, emissions allowance cost, variable operations and maintenance cost
- iii. For start costs  
Start fuel cost, heat input, station service power cost, variable operations and maintenance cost

The levels of cost-based offers and their components shall adhere to the provisions in Section II.A of Attachment M-Appendix.

(c) The PJM Board, upon consideration of the advice and recommendations of the Members Committee, shall from time to time define in detail the method of determining the costs entering into the said components, and the Members shall not exceed the costs calculated using such definitions in the preparation of incremental costs used on the Interconnection.

(d) A Market Seller may only submit a non-zero cost-based offer into the PJM Interchange Energy Market for a generation resource if it has a PJM-approved Fuel Cost Policy for such generation resource.

(e) A Market Seller shall provide a Fuel Cost Policy to PJM and the Market Monitoring Unit for each generation resource that it intends to offer into the PJM Interchange Energy Market, for each fuel type utilized by the resource. The Market Seller shall submit the initial Fuel Cost Policy for a generation resource to PJM and the Market Monitoring Unit for review by no later than 45 days prior to the Market Seller's initial submittal of a cost-based offer for the resource and shall update existing Fuel Cost Policies consistent with the annual update requirements set forth below in subsection (k). PJM shall review Fuel Cost Policies for administrative compliance with the PJM Market Rules, as described in PJM Tariff, Section 12A. The Market Monitoring Unit shall independently review Fuel Cost Policies, as described in PJM Tariff, Attachment M. PJM shall consult with the Market Monitoring Unit, and consider any input and advice timely received from the Market Monitoring Unit on administrative compliance, in its determination of whether to approve a Fuel Cost Policy. After it has completed its evaluation of the request, PJM shall notify the Market Seller in writing, with a copy to the Market Monitoring Unit, whether the Fuel Cost Policy is approved or rejected. If PJM rejects a Market Seller's Fuel Cost Policy, PJM shall include an explanation for why the Fuel Cost Policy was rejected in its written notification.

(f)

(g)

(h) If PJM rejects the Fuel Cost Policy, the Market Seller's previously PJM-approved Fuel Cost Policy shall remain in effect until such time as, subject to the review process set forth below in subsection (k), PJM approves a new Fuel Cost Policy for the Market Seller, except when the previously approved Fuel Cost Policy is no longer accurate.

(i)

(j) Each Market Seller shall include in its Fuel Cost Policy the following information, as further described in the applicable provisions of PJM Manual 15:

(i) For all Fuel Cost Policies, regardless of fuel type, the Market Seller shall provide a method of calculating fuel costs, indicating whether fuel is subject to a contract price and/or spot pricing, and specifying which of the contract prices and/or spot market prices to use. The Market Seller shall include its method for determining commodity, handling and transportation costs. Alternatively, the Market Seller may indicate that fuel costs are not applicable to the generation resource.

(ii)

(iii) For emissions costs, Market Sellers shall report the method for determining the emissions allowance cost and the frequency of updating emission rates.

(iv)

(v) Market Sellers shall report the source of heat inputs, and the frequency of updating heat inputs.

(vi) A Fuel Cost Policy shall include the method used to determine performance factors, which may be modified to reflect ambient conditions.

(vii) A Fuel Cost Policy shall include an example of the cost-based Start Cost, No Load Cost, and Incremental Energy Offer calculation for the generation resource and all applicable cost components.

(viii) A Fuel Cost Policy shall also include any other incremental operating cost components included in a Market Seller's cost-based offer for a resource, including but not limited to the consumables used for operation and the marginal value of costs in terms of dollars per MWh or dollars per unit of fuel, along with all applicable descriptions and frequency of updating such costs.

(k) On an annual basis, all Market Sellers will be required to either submit to PJM and the Market Monitoring Unit an updated Fuel Cost Policy that complies with this Schedule 2 and PJM Manual 15, or confirm that their currently effective and approved Fuel Cost Policy remains compliant, pursuant to the procedures and deadlines specified in PJM Manual 15. Market Sellers must submit such information by no later than June 15 of each year. PJM shall consult with the Market Monitoring Unit, and consider any input timely received from the Market Monitoring Unit on administrative compliance, in its determination of whether to approve an updated Fuel Cost Policy. After it has completed its evaluation of the request, PJM shall notify the Market Seller in writing, with a copy to the Market Monitoring Unit, of its determination whether the updated Fuel Cost Policy is approved or rejected by no later than November 1. If PJM rejects a Market Seller's updated Fuel Cost Policy, in its written notification, PJM shall provide an explanation for why the Fuel Cost

Policy was rejected. If a Market Seller desires to update its Fuel Cost Policy, or PJM determines either on its own or based on input received from the Market Monitoring Unit, that the Market Seller must update its Fuel Cost Policy outside of the annual review process, the Market Seller shall follow the applicable processes and deadlines specified in PJM Manual 15.

(l) If upon review of any of a Market Seller's cost-based offers, PJM determines that the Market Seller has not complied with Schedule 2 or the Cost Development Guidelines or the Market Monitoring Unit determines that the level of the offer is not in compliance with Section II.A.2. of Attachment M – Appendix, the Market Seller shall be subject to the following penalty summed for each market hour, for both the Day Ahead Market and Balancing Market, that the offer applied:

$$\sum_h \text{Penalty}_h = \frac{\min(d, 15) \times \text{LMP}_h \times \text{MW}_h}{20}$$

where:

$d$  is the greater of one and the number of days since PJM or the Market Monitoring Unit first notified the Market Seller of the potential penalty

$h$  is the applicable market hour for which the offer applies

$\text{LMP}_h$  is the LMP at the applicable pricing location for the resource for the market hour

$\text{MW}_h$  is the available capacity of the resource for the market hour

All charges collected pursuant to this provision shall be allocated by Load Ratio Share to all Load Serving Entities in the PJM Region.

(m)

## OATT Attachment M–Appendix § II.A

### II. DEVELOPMENT OF INPUTS FOR PROSPECTIVE MITIGATION

#### A. Offer Price Caps:

1. The Market Monitoring Unit shall advise the Office of the Interconnection whether it believes that the cost references, methods and rules included in the Cost Development Guidelines are accurate and appropriate, as specified in the PJM Manuals.
  
2. The Market Monitoring Unit shall review the incremental costs (defined in Section 6.4.2 of Schedule 1 of the Operating Agreement) included in the Offer Price Cap of a generating unit in order to ensure that the level of the incremental costs included in Offer Price Cap (i) are sufficiently documented and (ii) accurately reflect such Market Seller's short run marginal costs. The Market Monitoring Unit shall inform PJM if it believes a Market Seller has submitted a cost-based offer that is not compliant with these criteria and whether it recommends that PJM assess the applicable penalty therefor, pursuant to Schedule 2 of the Operating Agreement.
  - (a) Market Sellers shall include in Offer Price Caps incremental costs not to exceed short run marginal costs, as determined at the time of offer submittal. Submittal by a Market Participant of an Offer Price Cap that includes incremental costs in excess of short run marginal cost is a potential exercise of market power and may be subject to the application of the penalty specified in Schedule 2 of the Operating Agreement and any such other relief that the Commission determines is appropriate under the Federal Power Act. Market Sellers shall submit sufficient documentation for the verification of short run marginal costs.
  
  - (b) The Market Monitoring Unit shall review all Fuel Cost Policies submitted by Market Sellers for market power concerns, including, specifically, whether such policy is algorithmic, systematic and verifiable, and can be reasonably relied upon to produce accurate fuel cost inputs for Offer Price Caps. An accurate fuel cost input is an input that reflects the short run marginal cost of fuel. The Market Monitoring Unit shall regularly communicate the status of Fuel Cost Policies under its review for market power concerns to the Market Seller and PJM. The fuel cost component of a cost-based offer submitted subject to a Fuel Cost Policy that the Market Monitoring Unit has determined does not raise market power concerns shall be presumed accurate.
  
  - (c) The Market Monitoring Unit shall provide and maintain a convenient and secure electronic interface for submitting cost data, Fuel Cost Policies, and supporting documentation. An accurate cost input is an input necessary to calculate the short run marginal cost. The Market Monitoring Unit shall identify to the Market Seller potentially inaccurate inputs.
  
3. On or before the 21st day of each month, the Market Monitoring Unit shall calculate in accordance with the applicable criteria whether each generating unit with an offer cap calculated under Section 6.4.2 of Schedule 1 of the Operating Agreement is eligible to include an adder based on Frequently Mitigated Unit or Associated Unit status, and shall issue a written notice of the applicable adder, with a copy to the Office of the Interconnection, to the Market Seller for each unit that meets the criteria for Frequently Mitigated Unit or Associated Unit status.

4. Notwithstanding the number of jointly pivotal suppliers in any hour, if the Market Monitoring Unit determines that a reasonable level of competition will not exist based on an evaluation of all facts and circumstances, it may propose to the Commission the removal of offer-capping suspensions otherwise authorized by Section 6.4 of Schedule 1 of the Operating Agreement. Such proposals shall take effect upon Commission acceptance of the Market Monitoring Unit's filing.
5. Market Sellers may include opportunity costs due to operational limitations in cost-based offers. The Market Monitor shall either review or provide opportunity cost calculations and their inputs.

For a generating unit that is subject to operational limitations due to energy or environmental limitations imposed on the generating unit by Applicable Laws and Regulations (as defined in the PJM Tariff), the Market Participant may include in the calculation of its "other incremental operating costs" an amount reflecting the unit-specific Energy Market Opportunity Costs expected to be incurred. Such unit-specific Energy Market Opportunity Costs are calculated by forecasting Locational Marginal Prices based on future contract prices for electricity using PJM Western Hub forward prices, taking into account historical variability and basis differentials for the bus at which the generating unit is located for the prior three year period immediately preceding the relevant compliance period, and subtract therefrom the forecasted costs to generate energy at the bus at which the generating unit is located, as specified in more detail in PJM Manual 15. If the difference between the forecasted Locational Marginal Prices and forecasted costs to generate energy is negative, the resulting Energy Market Opportunity Cost shall be zero.

For a generating unit that is subject to operational limitations because it only has a limited number of starts or available run hours resulting from (i) the physical equipment limitations of the unit, for up to one year, due to original equipment manufacturer recommendations or insurance carrier restrictions, or (ii) a fuel supply limitation, for up to one year, resulting from an event of Catastrophic Force Majeure, the Market Participant may include in the calculation of its "other incremental operating costs" an amount reflecting the unit-specific Non-Regulatory Opportunity Costs expected to be incurred. Such unit-specific Non-Regulatory Opportunity Costs are calculated by forecasting Locational Marginal Prices based on future contract prices for electricity using PJM Western Hub forward prices, taking into account historical variability and basis differentials for the bus at which the generating unit is located for the prior three year period immediately preceding the period of time in which the unit is bound by the referenced restrictions, and subtract therefrom the forecasted costs to generate energy at the bus at which the generating unit is located, as specified in more detail in PJM Manual 15. If the difference between the forecasted Locational Marginal Prices and forecasted costs to generate energy is negative, the resulting Non-Regulatory Opportunity Cost shall be zero.



## 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 16<sup>th</sup> day of September, 2016.



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Jeffrey W. Mayes

General Counsel

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