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DATE: **August 12, 2016**

TO: **PJM Members**

FROM: **IMM**

SUBJECT: **Fuel Cost Policy Issues**

In response to the August 10, 2016, discussion regarding PJM's compliance filing in FERC Docket ER16-372 regarding Offer Flexibility, the IMM has developed alternative proposed language for Schedule 2 of the Operating Agreement and Attachment M- Appendix. The proposal separates all requirements in the Tariff relating to market power and the level of cost based offers (Attachment M-Appendix) from the compliance requirements and consequences for cost based offer and fuel cost policy submittal (Schedule 2). The purpose of fuel cost policies and penalties are simplified and made clear.

The proposal addresses several concerns raised by the IMM and stakeholders:

1. The purpose of fuel cost policies is market power mitigation.
2. The roles of PJM and the IMM should be carefully identified. There is no reason to have two overlapping and potentially counterproductive fuel cost policy review processes.
    a. Under Attachment M, the IMM must review fuel cost policies for market power considerations and the levels of costs.
    b. Under Section 12A of the Tariff, PJM must review fuel cost policies for tariff compliance but PJM may not review fuel cost policies for market power considerations and the levels of costs.
3. Penalties associated with inaccurate cost based offers and fuel cost polices should be simple, high enough to provide incentives for competitive behavior, provide no incentives that distort competitive behavior, and scale with market impact.

SCHEDULE 2 -
COMPONENTS OF COST

(a) Each Market Participant required to submit cost-based energy offers to the PJM Interchange Energy Market shall include the following components, if applicable, for energy supplied to or from the PJM Region:

i. <u>For incremental energy cost curves</u>
Fuel cost, heat rate, emissions allowance cost, variable operations and maintenance cost, opportunity costs

ii. <u>For no load costs</u>
Fuel cost, no load heat input, emissions allowance cost, variable operations and maintenance cost

iii. <u>For start costs</u>
Start fuel cost, heat input, station service power cost

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

(b) The PJM Board, upon consideration of the advice and recommendations of the Market Monitoring Unit and the Members Committee, shall from time to time define in detail a method of determining the costs entering the components listed in Section (a).

(c) A Market Seller may only submit a nonzero cost-based offer into the PJM Interchange Energy Market for a generation resource if it has a fuel cost policy approved by PJM under Section (e) for such generation resource.

(d) 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 purpose of the fuel cost policy is to establish between the Market Seller and the Market Monitoring Unit a method of computing fuel costs for cost-based offers that result in competitive prices in the presence of market power, as detailed in Section II.A.3 of Attachment M-Appendix. PJM's fuel cost policy compliance approval, based on the criteria described in Section (e), ensures that Market Sellers submitting cost based offers participate in the Market Monitoring Unit's fuel cost policy process.

(e) The Market Seller shall submit the initial fuel cost policy for a generation resource to PJM and the Market Monitoring Unit 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 Section (f). PJM shall notify the Market Seller whether the fuel cost policy is approved or rejected. If PJM rejects a Market Seller's fuel cost policy, PJM shall provide an explanation for why the fuel cost policy was rejected.

i. For all fuel cost policies, regardless of fuel type, the Market Seller shall provide a method of calculating fuel costs for each generation resource, indicating whether fuel costs are subject to a contract price and/or spot pricing and which contract prices and/or spot market prices it uses. The Market Seller shall indicate whether it includes fuel handling and transportation costs. Alternatively, the Market Seller may indicate that fuel costs are not applicable to the generation resource.

ii. For generation resources with emissions costs, the fuel cost policy shall include a method for determining the emissions allowance cost and the frequency of updating emission rates.

iii. For generation resources with variable operations and maintenance costs, the fuel cost policy shall include the frequency of updating costs, if such costs are applicable to the generation resource.

iv. For generation resources with heat inputs, the fuel cost policy shall include a method of developing heat inputs and the frequency of updating heat inputs. A fuel cost policy shall include the method used to determine and frequency of updating any applicable unit specific performance factors.

v. A fuel cost policy shall include an example of the cost-based incremental energy cost curve, Start Cost, and No Load cost calculations for the generation resource.

(f) 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 or confirm that their currently effective fuel cost policy remains accurate, 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. After it has reviewed the compliance of the request, as described in section (e), PJM shall notify the Market Seller 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, PJM must provide an explanation for why the fuel cost policy was rejected. If a Market Seller desires to update its fuel cost policy outside of the annual review process, the Market Seller shall follow the applicable processes and deadlines specified in the PJM Manuals.

(h) If the Market Seller does not have an approved fuel cost policy on file with PJM or upon receipt of a report from the Market Monitoring Unit that a cost-based offer accepted by PJM does not satisfy the market power criteria in section A.1 of Attachment M–Appendix, PJM shall impose on the Market Seller the following penalty for both the Day Ahead Market and Balancing Market for all market hours pertaining to the violation:

$$Penalty_{dh} = \frac{\min(d, 15)}{20} \times LMP_h \times MW_h$$

where:

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

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

LMP_h is the generating unit LMP for the hour.

MW_h is the available capacity of the unit for the hour.

Payment of a penalty does not excuse a Market Seller from additional penalties or other liability, including if the Commission determines that such offer constitutes an attempted or actual exercise of market power and/or manipulation.

All charges collected pursuant to this provision shall be allocated by hourly Load Ratio Share to all Load Serving Entities in the PJM Region, excluding imports and exports.

If the Market Seller, Market Monitor, or PJM disagree about the applicability of the penalty, the Market Seller, Market Monitor, or PJM shall have recourse to the Commission for a final determination.

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ATTACHMENT M – APPENDIX

II. DEVELOPMENT OF INPUTS FOR PROSPECTIVE MITIGATION

A. Cost-Based Offers:

1. Market Sellers shall submit cost-based offers (Offer Price Cap) that accurately represent the short run marginal cost of production for the generating unit for the applicable operating hour, not in excess of the costs determined in accordance with PJM Manual 15. The fuel cost included in a cost-based offer calculated in accordance with a fuel cost policy accepted by the Market Monitoring Unit shall be presumed accurate.

2. The Market Monitoring Unit shall notify the PJM Board and the Members Committee whether it believes that the cost references, methods and rules included in PJM Manual 15 are accurate and appropriate, in whole or in part, and recommend improvements. The Market Monitoring Unit shall not be required to base its determinations on market power and/or manipulation on cost references, methods and rules that it has notified the PJM Board and Members Committee are not accurate and appropriate.

3. The Market Sellers and the Market Monitoring Unit shall engage in good faith in the following process for review of cost-based offers and fuel cost policies:

    a. Market Sellers shall, prior to submittal of cost-based offers, submit to the Market Monitor information sufficient for the validation of cost-based offers. The information shall include, among other data, heat inputs, fuel costs, variable fuel transportation and handling costs, emissions rates, start costs, opportunity costs, and other short run marginal costs.

    b. Market Sellers shall, prior to submittal of cost-based offers, provide a verifiable, algorithmic, and systematic fuel cost policy, such that the Market Monitoring Unit determines that it can reasonably rely on such policy to verify that cost-based offers submitted by the Market Seller accurately reflect such Seller's short run marginal costs. Any included fuel commodity, transportation, handling, and opportunity costs must be short run marginal costs only.

c. The Market Monitoring Unit shall provide a convenient and secure method for submitting cost data and fuel cost policies on its website. It shall review the sufficiency of the data submitted for validating cost-based offers and may request further data and/or supporting information from the Market Seller to determine whether the cost components are short run marginal costs.

d. The Market Monitoring Unit shall review all fuel cost policies submitted by Market Sellers for market power and manipulation concerns, discuss such fuel cost policies with the Market Seller, and accept such fuel cost policies that the Market Monitoring Unit determines are verifiable, algorithmic, systematic, and designed to accurately calculate fuel costs representative of the short run marginal cost of fuel at the generating unit's location at any given point in time.

The Market Monitoring Unit shall inform the Market Seller and PJM when it accepts or rejects a fuel cost policy. The Market Monitoring Unit may revoke acceptance of the policy upon three days' notice to the Market Seller and PJM. The Market Monitoring Unit shall explain the basis for rejection or revocation to the Market Seller.

e. The Market Monitoring Unit shall review the costs included in the cost-based offer (offer price cap per Section 6 of the Schedule 1 to the Operating Agreement) of a generating unit in order to ensure that the Market Seller has correctly calculated its cost-based offer, using the supporting information submitted according to 3.a. and 3.b. and other information available to the Market Monitoring Unit, and that the level of the lowest cost-based offer made available to the PJM Energy Market is the short run marginal cost of production for the generating unit for the applicable operating hour.

f. In the event that the Market Monitor determines that a resource has submitted a cost-based offer that does not meet the criteria in Subsection II.A.1 of Attachment M-Appendix, it shall inform PJM for the assessment of penalties under Section (h) of Schedule 2 of the Operating Agreement.

4. 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 price 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.

5. 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.

6. 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.