

April 4, 2014

Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E., Room 1A
Washington, D.C. 20426

Re: *PJM Interconnection, L.L.C.*, Docket No. ER14-1660-000

Dear Ms. Bose:

PJM Interconnection, L.L.C. (“PJM”), pursuant to section 205 of the Federal Power Act (“FPA”), 16 U.S.C. § 824d, hereby submits revisions to the PJM Open Access Transmission Tariff (“Tariff”) to move forward by two months the Tariff-prescribed procedural deadlines for the periodic development of possible changes to the shape of the Variable Resource Requirement (“VRR”) Curve¹ used to clear PJM’s Reliability Pricing Model (“RPM”) Auctions and two key inputs to that curve – the Cost of New Entry (“CONE”) by a representative new power plant and the Net Energy and Ancillary Services (“EAS”) Revenues that plant would be expected to earn in the PJM markets. These changes will provide all parties more time to assess possible changes in these important RPM Auction parameters before they are applied in an RPM Base Residual Auction (“BRA”), including building in time for a full five-month suspension period before the relevant BRA, thereby enhancing the Commission’s options for timely resolution of any disputes over these parameters.

PJM proposes to make these changes effective June 4, 2014, which is more than 60 days after the date of this filing.

¹ Capitalized terms used and not otherwise defined herein have the meaning set forth in the Tariff, Amended and Restated Operating Agreement of PJM Interconnection, L.L.C. or the Reliability Assurance Agreement Among Load Serving Entities in the PJM Region (“RAA”).

I. BACKGROUND

A. Tariff Provisions Requiring Periodic Review of the VRR Curve, the CONE Values, and Net EAS Revenues

PJM's Tariff requires that PJM periodically review the shape of the VRR Curve and its two key inputs, i.e., the CONE values for each CONE Area and the Net EAS Revenue offset estimates for the PJM Region and each transmission zone, recommend any needed changes, and obtain stakeholder input regarding the same.² The Tariff requires that the next review consider any changes to the shape of the VRR Curve and these inputs for the 2018-2019 Delivery Year.³ PJM will conduct the BRA for that Delivery Year in May 2015; consequently, PJM and its stakeholders must conduct in 2014 the Tariff-prescribed review of these auction parameters.

Under the existing market rules, PJM must conduct its own review of these matters and prepare a recommendation to retain the status quo or to modify these values. If PJM determines that the shape of the VRR Curve and either (or both) of the two key inputs should be modified, PJM staff will propose a new VRR Curve shape and any modifications to the CONE values and Net EAS Revenue offsets "on or before July 15, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied."⁴

PJM Members are then given the opportunity to review the proposed modifications and to vote by October 31 on whether to (i) endorse PJM Staff's proposed changes, (ii) propose alternate changes, or (iii) retain the status quo.⁵

Finally, the PJM Board of Managers ("PJM Board") must consider the proposed modifications and PJM then will file with the Commission any modifications approved by the PJM Board by December 1, prior to the BRA for the "first Delivery Year in which the new values would be applied."⁶

² See Tariff, Attachment DD § 5.10(a).

³ See Tariff, Attachment DD §§ 5.10(a)(iii) (VRR Curve), 5.10(a)(vi)(C) (CONE values), and 5.10(a)(vi)(D) (Net EAS Revenue offsets).

⁴ Tariff, Attachment DD §§ 5.10(a)(iii)(A) (for the VRR Curve shape), 5.10(a)(vi)(C)(1) (CONE values), and 5.10(a)(vi)(D)(1) (Net EAS Revenue offsets).

⁵ See Tariff, Attachment DD §§ 5.10(a)(iii)(C) (for the VRR Curve shape), 5.10(a)(vi)(C)(2) (CONE values), and 5.10(a)(vi)(D)(2) (Net EAS Revenue offsets).

⁶ Tariff, Attachment DD §§ 5.10(a)(iii)(D) (for the VRR Curve shape), 5.10(a)(vi)(C)(3) (for the CONE values), and 5.10(a)(vi)(D)(3) (for the Net EAS Revenue offsets).

In sum, the Tariff currently prescribes the following three procedural deadlines for the PJM and stakeholder review and any resulting filing with the Commission: July 15 (any PJM proposed changes); October 31 (PJM Member vote); and December 1 (filing with the Commission).

B. PJM’s Most Recent VRR Curve Review Proceeding and Resulting Settlement Requirement

PJM’s most recent filing under these provisions followed the Tariff-prescribed review in 2011 for the May 2012 BRA for the 2015-2016 Delivery Year. Specifically, on December 1, 2011, PJM proposed Tariff revisions in Docket No. ER12-513 to the VRR Curve shape, the CONE values, and the Net EAS Revenue offset estimating methodology (“ER12-513 Filing”). Because PJM calculated these values to be effective for the 2015-2016 Delivery Year, PJM requested that the Commission approve each of the changes, including the newly-developed CONE values, to become effective January 31, 2012, the day before PJM was required to post the parameters for the May 2012 BRA.⁷

On January 30, 2012, the Commission accepted, in part, the ER12-513 Filing to be effective January 31, 2012.⁸ However, the Commission found that the CONE values might not be just and reasonable and suspended the effectiveness of those values for five months, i.e., until June 30, 2012.⁹ The Commission also established hearing and settlement procedures to consider, among other things, the proposed CONE values. As a result of the Commission’s order, the CONE values that were in place prior to the ER12-513 Filing remained in place for the May 2012 BRA that secured capacity commitments for the 2015-2016 Delivery Year and the new CONE values that estimated the costs of a representative peaking plant entering service at the start of the 2015-2016 Delivery Year were not employed for the BRA for that Delivery Year.

PJM and the intervening parties met for several months in an effort to resolve the matter of the applicable new CONE values. On November 21, 2012, PJM, on behalf of numerous settling parties, filed a settlement resolving all issues set for hearing in that proceeding.¹⁰ The ER12-513 Settlement included new CONE values to be effective starting with all Incremental Auctions for the 2015-2016 Delivery Year and for all Delivery Years thereafter. In addition, Section II.F of the ER12-513 Settlement provided:

PJM shall conduct a stakeholder process to identify any desired changes in the CONE triennial review process in light of lessons

⁷ ER12-513 Filing at 1, 33.

⁸ *PJM Interconnection, L.L.C.*, 138 FERC ¶ 61,062 (2012).

⁹ *PJM Interconnection, L.L.C.*, 138 FERC ¶ 61,062, at P 39, ordering para. (A).

¹⁰ Settlement Agreement and Offer of Settlement of PJM Interconnection, L.L.C., Docket No. ER12-513-000 (Nov. 21, 2012) (“ER12-513 Settlement”).

learned from the most recent triennial review process . . . with a PJM filing of any resulting tariff changes with [the Commission] in sufficient time to govern the 2014 triennial review

The Commission approved the ER12-513 Settlement, including the stated CONE values and Section II.F, without modification, on January 31, 2013.¹¹

C. Stakeholder Process Implementing Settlement Requirement and Endorsing Enclosed Tariff Changes

As required by Section II.F of the ER12-513 Settlement, PJM conducted a stakeholder process over the last seven months regarding possible Tariff changes related to the periodic review of the VRR Curve and inputs.¹² While the discussion was wide-ranging, stakeholders ultimately reached consensus only on the changes contained in this filing, i.e., advancing the deadlines that govern that periodic review.

PJM, working with its stakeholders, developed Tariff language to implement the consensus change to the review process deadlines, which were first presented to the PJM Markets and Reliability Committee (“MRC”) in late February 2014. The Tariff changes were then presented to the MRC again on March 27, 2014 for endorsement, and to the PJM Members Committee (“MC”), also on March 27, 2014, for endorsement. The MRC unanimously endorsed the changes, with no abstentions, and the MC endorsed the changes without objections and with only one abstention.

D. Current Periodic Review of the VRR Curve and Key Inputs

PJM has retained an independent consultant, The Brattle Group, to conduct the 2014 periodic review of the VRR Curve shape, CONE values, and Net EAS methodology. That review is well underway, and PJM expects to be in a position to share the report, and PJM’s recommendations, with stakeholders by no later than May 15, 2014.

¹¹ *PJM Interconnection, L.L.C.*, 142 FERC ¶ 61,079 (2013). In Docket No. ER13-1044, PJM proposed changes to the periodic VRR Curve review process. Under PJM’s proposal, the review process would occur on a quadrennial rather than triennial basis, and the stakeholder review process was lengthened by six weeks so that PJM Members are presented with PJM’s proposal on July 15 instead of September 1. The Commission accepted these changes without modification. *PJM Interconnection, L.L.C.*, Letter Order, Docket No. ER13-1044-000 (May 22, 2013).

¹² The presentations and other materials related to this stakeholder process have been compiled and posted on PJM’s website at: <http://www.pjm.com/committees-and-groups/issue-tracking/issue-tracking-details.aspx?Issue={E4A0F3EC-E7F8-4ABD-853F-4D43F8D50103}>.

II. PROPOSED TARIFF REVISIONS

Because the VRR Curve shape, and two of the curve's inputs - CONE values, and Net EAS Revenue offsets -- can significantly affect RPM Auction clearing results, PJM, stakeholders, and the Commission should have ample time to evaluate proposed changes to such parameters before they take effect. By this filing, PJM—with the endorsement of its stakeholders—adds two months to the period from the time of PJM staff's recommendations to the time when any new values would need to be used in the BRA for which they were developed. This will provide PJM and stakeholders more time to achieve consensus on any such changes before the relevant BRA and also will provide the Commission more time to process any such changes before they are needed. In particular, the proposed October 1 deadline for filing any changes with the Commission would allow the changes to take effect by May 1 of the subsequent calendar year (i.e., in time for the BRA for which the changes were intended) even if, as happened with the last CONE changes, the Commission suspends the proposed changes for the full five months permitted by the FPA.

Allowing that full five months also would create options for the Commission to resolve any disputes over such parameters using more efficient, and less costly, means such as a technical conference or paper hearing.¹³ The Commission and its staff are accustomed to conducting and resolving technical conference proceedings within a five-month suspension period.¹⁴ By contrast, the current December 1 filing deadline allows only about three months from an initial Commission order to the relevant BRA, which does not provide a good fit for the Commission's customary technical conference schedule. While nothing in this filing binds or prejudices how the Commission should process any filings proposing market rule changes applicable to RPM Auctions, the revised deadlines would provide increased options for effective processing of any such filing before the relevant auction.

The revised filing deadline also would provide PJM and stakeholders a substantial increase in the time available (i.e., five months versus three months) to attempt to settle any disputes over the market rule changes before the relevant BRA.

¹³ PJM notes that the Commission held a technical conference on exactly these three issues—VRR Curve shape, CONE values, and Net EAS Revenue offsets—as part of its review in 2006 of PJM's initial RPM filing. *See* Staff Questions, Day One, presented at the June 7, 2006 Technical Conference on Reliability Pricing Model in PJM Interconnection, L.L.C., Docket Nos. ER05-1410-000, et al. (June 7, 2006).

¹⁴ *See, e.g., PJM Interconnection, L.L.C.*, 145 FERC ¶ 61,001 (2013), *order on technical conference*, 146 FERC ¶ 61,150 (2014) (accepting changes within 5-month suspension period); *PJM Interconnection, L.L.C.*, 137 FERC ¶ 61,204 (2011), *order on technical conference*, 139 FERC ¶ 61,115 (2012) (same).

Accordingly, PJM is proposing to move forward by two months each Tariff-prescribed deadline in the stakeholder review and Commission filing process, as follows:

<u>Description</u>	<u>Current</u>	<u>Proposed</u>
PJM proposes any modifications to current values	July 15	May 15
Stakeholders vote on proposed modifications	October 31	August 31
PJM files proposed modifications with the Commission	December 1	October 1

To effectuate this change for the review of the shape of the VRR Curve, PJM is modifying Attachment DD, section 5.10(a)(iii) to change the dates as shown in the above table. Similarly, to make this change for the reviews of the calculation of the CONE values for each CONE area and the methodology for determining the Net EAS Revenue offsets for the PJM Region and each ZONE, PJM is making the same modifications to Attachment DD, sections 5.10(a)(vi)(C) and 5.10(a)(vi)(D), for the CONE values and Net EAS Revenue offsets, respectively.

As noted above, PJM is presently engaged in the Tariff-prescribed periodic review to assess the VRR Curve and inputs for the 2018-2019 Delivery Year. The current Tariff deadline calls for PJM to provide its recommendation on or before July 15.¹⁵ PJM can comply with this current requirement, and also accommodate the revised deadlines proposed in this filing, by issuing its recommendation by May 15, 2014. PJM therefore has worked with the independent consultant to ensure that its report, and PJM's recommendations, will be issued by May 15, 2014.¹⁶ This will provide adequate time for stakeholder review (indeed, the same 3-1/2 months as provided by the current deadlines) if the Commission thereafter approves the Tariff changes in this filing, thus setting August 31, 2014, as the deadline for a stakeholder vote on the proposed modifications.

III. EFFECTIVE DATE

The enclosed Tariff revisions reflect an effective date of June 4, 2014, i.e., 61 days after the date of this filing.

¹⁵ See Tariff, Attachment DD §§ 5.10(a)(iii) (VRR Curve), 5.10(a)(vi)(C) (CONE values), and 5.10(a)(vi)(D) (Net EAS Revenue offsets).

¹⁶ While the report and recommendation will be issued before results are posted for the 2014 BRA, there will be ample time to take into account any relevant experience from that BRA before the proposed October 1 deadline for any filing of VRR Curve, CONE, or EAS changes with the Commission that may result from this multi-month process.

IV. CORRESPONDENCE

The following individuals are designated for inclusion on the official service list in this proceeding and for receipt of any communications regarding this filing:

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V. DOCUMENTS ENCLOSED

PJM encloses with this transmittal letter:

- (2) Attachment A – redline version of the revised section to the electronic tariff; and
- (3) Attachment B – clean version of the revised section to the electronic tariff.

VI. SERVICE

PJM has served a copy of this filing on all PJM members and on all state utility regulatory commissions in the PJM Region by posting this filing electronically. In accordance with the Commission's regulations,¹⁷ PJM will post a copy of this filing to the FERC filings section of its internet site, located at the following link: <http://www.pjm.com/documents/ferc-manuals/ferc-filings.aspx> with a specific link to the newly-filed document, and will send an e-mail on the same date as this filing to all PJM members and all state utility regulatory commissions in the PJM Region¹⁸ alerting them that this filing has been made by PJM and is available by following such link. If the document is not immediately available by using the referenced link, the document will be available through the referenced link within 24 hours of the filing. Also, a copy of this filing will be available on the Commission's eLibrary website located at the following link: <http://www.ferc.gov/docs-filing/elibrary.asp> in accordance with the Commission's regulations and Order No. 714.

¹⁷ See 18 C.F.R. §§ 35.2(e), 385.2010(f)(3).

¹⁸ PJM already maintains, updates, and regularly uses e-mail lists for all PJM members and affected state commissions.

VII. CONCLUSION

Accordingly, PJM requests that the Commission accept the enclosed Tariff revisions, effective June 4, 2014.

Respectfully submitted,

/s/ Paul M. Flynn

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April 4, 2014

Attachment A

Revisions to Section(s) of the
PJM Open Access Transmission Tariff

(Marked / Redline Format)

5.10 Auction Clearing Requirements

The Office of the Interconnection shall clear each Base Residual Auction and Incremental Auction for a Delivery Year in accordance with the following:

a) Variable Resource Requirement Curve

The Office of the Interconnection shall determine Variable Resource Requirement Curves for the PJM Region and for such Locational Deliverability Areas as determined appropriate in accordance with subsection (a)(iii) for such Delivery Year to establish the level of Capacity Resources that will provide an acceptable level of reliability consistent with the Reliability Principles and Standards. It is recognized that the variable resource requirement reflected in the Variable Resource Requirement Curve can result in an optimized auction clearing in which the level of Capacity Resources committed for a Delivery Year exceeds the PJM Region Reliability Requirement (less the Short-Term Resource Procurement Target) or Locational Deliverability Area Reliability Requirement (less the Short-Term Resource Procurement Target for the Zones associated with such LDA) for such Delivery Year. For any auction, the Updated Forecast Peak Load, and Short-Term Resource Procurement Target applicable to such auction, shall be used, and Price Responsive Demand from any applicable approved PRD Plan, including any associated PRD Reservation Prices, shall be reflected in the derivation of the Variable Resource Requirement Curves, in accordance with the methodology specified in the PJM Manuals.

i) Methodology to Establish the Variable Resource Requirement Curve

Prior to the Base Residual Auction, in accordance with the schedule in the PJM Manuals, the Office of the Interconnection shall establish the Variable Resource Requirement Curve for the PJM Region as follows:

- Each Variable Resource Requirement Curve shall be plotted on a graph on which Unforced Capacity is on the x-axis and price is on the y-axis;
- The Variable Resource Requirement Curve for the PJM Region shall be plotted by first combining (i) a horizontal line from the y-axis to point (1), (ii) a straight line connecting points (1) and (2), (iii) a straight line connecting points (2) and (3), and (iv) a vertical line from point (3) to the x-axis, where:
 - For point (1), price equals: {the greater of [the Cost of New Entry] or [1.5 times (the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset)]} divided by (one minus the pool-wide average EFORD) and Unforced Capacity equals: [the PJM Region Reliability Requirement multiplied by (100% plus the approved PJM Region Installed Reserve Margin (“IRM”)% minus 3%) divided by (100% plus IRM%)] minus the Short-Term Resource Procurement Target;

- For point (2), price equals: (the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset) divided by (one minus the pool-wide average EFORD) and Unforced Capacity equals: [the PJM Region Reliability Requirement multiplied by (100% plus IRM% plus 1%) divided by (100% plus IRM%)] minus the Short-Term Resource Procurement Target; and
- For point (3), price equals [0.2 times (the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset)] divided by (one minus the pool-wide average EFORD) and Unforced Capacity equals: [the PJM Region Reliability Requirement multiplied by (100% plus IRM% plus 5%) divided by (100% plus IRM%)] minus the Short-Term Resource Procurement Target;

ii) For any Delivery Year, the Office of the Interconnection shall establish a separate Variable Resource Requirement Curve for each LDA for which:

- A. the Capacity Emergency Transfer Limit is less than 1.15 times the Capacity Emergency Transfer Objective, as determined by the Office of the Interconnection in accordance with NERC and Applicable Regional Entity guidelines; or
- B. such LDA had a Locational Price Adder in any one or more of the three immediately preceding Base Residual Auctions; or
- C. such LDA is determined in a preliminary analysis by the Office of the Interconnection to be likely to have a Locational Price Adder, based on historic offer price levels; provided however that for the Base Residual Auction conducted for the Delivery Year commencing on June 1, 2012, the Eastern Mid-Atlantic Region (“EMAR”), Southwest Mid-Atlantic Region (“SWMAR”), and Mid-Atlantic Region (“MAR”) LDAs shall employ separate Variable Resource Requirement Curves regardless of the outcome of the above three tests; and provided further that the Office of the Interconnection may establish a separate Variable Resource Requirement Curve for an LDA not otherwise qualifying under the above three tests if it finds that such is required to achieve an acceptable level of reliability consistent with the Reliability Principles and Standards, in which case the Office of the Interconnection shall post such finding, such LDA, and such Variable Resource Requirement Curve on its internet site no later than the March 31 last preceding the Base Residual Auction for such Delivery Year. The same process as set forth in subsection (a)(i) shall be used to establish the Variable Resource Requirement Curve for any such LDA, except that the Locational Deliverability Area Reliability Requirement for such LDA shall be substituted for the PJM Region Reliability Requirement and the LDA Short-Term Resource Procurement Target shall be substituted for the PJM Region Short-Term Resource Procurement Target. For purposes of calculating the Capacity Emergency

Transfer Limit under this section, all generation resources located in the PJM Region that are, or that qualify to become, Capacity Resources, shall be modeled at their full capacity rating, regardless of the amount of capacity cleared from such resource for the immediately preceding Delivery Year.

iii) Procedure for ongoing review of Variable Resource Requirement Curve shape.

Beginning with the Delivery Year that commences June 1, 2018, and continuing no later than for every fourth Delivery Year thereafter, the Office of the Interconnection shall perform a review of the shape of the Variable Resource Requirement Curve, as established by the requirements of the foregoing subsection. Such analysis shall be based on simulation of market conditions to quantify the ability of the market to invest in new Capacity Resources and to meet the applicable reliability requirements on a probabilistic basis. Based on the results of such review, PJM shall prepare a recommendation to either modify or retain the existing Variable Resource Requirement Curve shape. The Office of the Interconnection shall post the recommendation and shall review the recommendation through the stakeholder process to solicit stakeholder input. If a modification of the Variable Resource Requirement Curve shape is recommended, the following process shall be followed:

- A) If the Office of the Interconnection determines that the Variable Resource Requirement Curve shape should be modified, Staff of the Office of the Interconnection shall propose a new Variable Resource Requirement Curve shape on or before ~~July~~May 15, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.
- B) The PJM Members shall review the proposed modification to the Variable Resource Requirement Curve shape.
- C) The PJM Members shall either vote to (i) endorse the proposed modification, (ii) propose alternate modifications or (iii) recommend no modification, by ~~October~~August 31, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.
- D) The PJM Board of Managers shall consider a proposed modification to the Variable Resource Requirement Curve shape, and the Office of the Interconnection shall file any approved modified Variable Resource Requirement Curve shape with the FERC by ~~December~~October 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

iv) Cost of New Entry

- A) For the Delivery Year commencing on June 1, 2015, and continuing thereafter unless and until changed pursuant to subsection (B) below, the Cost of New Entry for the PJM Region shall be \$128,000 per MW-year. The Cost of New Entry for each LDA shall be determined based upon the Transmission Owner zones that comprise such LDA, as provided in the table below. If an LDA combines transmission zones with differing Cost of New Entry values, the lowest such value shall be used.

Geographic Location Within the PJM Region Encompassing These Zones	Cost of New Entry in \$/MW-Year
PS, JCP&L, AE, PECO, DPL, RECO (“CONE Area 1”)	140,000
BGE, PEPCO (“CONE Area 2”)	130,600
AEP, Dayton, ComEd, APS, DQL, ATSI, DEOK, EKPC (“CONE Area 3”)	127,500
PPL, MetEd, Penelec (“CONE Area 4”)	134,500
Dominion (“CONE Area 5”)	114,500

- B) Beginning with the 2016-2017 Delivery Year, the CONE shall be adjusted to reflect changes in generating plant construction costs based on changes in the Applicable H-W Index, in accordance with the following:

(1) The Applicable H-W Index for any Delivery Year shall be the most recently published twelve-month change, at the time CONE values are required to be posted for the Base Residual Auction for such Delivery Year, in the Total Other Production Plant Index shown in the Handy-Whitman Index of Public Utility Construction Costs for the North Atlantic Region for purposes of CONE Areas 1, 2, and 4, for the North Central Region for purposes of CONE Area 3, and for the South Atlantic Region for purposes of CONE Area 5.

(2) The CONE in a CONE Area shall be adjusted prior to the Base Residual Auction for each Delivery Year by applying the Applicable H-W Index for such CONE Area to the Benchmark CONE for such CONE Area.

(3) The Benchmark CONE for a CONE Area shall be the CONE used for such CONE Area in the Base Residual Auction for the prior Delivery Year (provided, however that the Gross CONE values stated in subsection (a)(iv)(A) above shall be the Benchmark CONE values for the 2015-2016 Delivery Year to which the Applicable H-W Index shall be applied to determine the CONE for subsequent Delivery Years).

(4) Notwithstanding the foregoing, CONE values for any CONE Area for any Delivery Year shall be subject to amendment pursuant to appropriate filings with FERC under

the Federal Power Act, including, without limitation, any filings resulting from the process described in section 5.10(a)(vii)(C) or any filing to establish new or revised CONE Areas.

v) Net Energy and Ancillary Services Revenue Offset

- A) The Office of the Interconnection shall determine the Net Energy and Ancillary Services Revenue Offset each year for the PJM Region as (A) the annual average of the revenues that would have been received by the Reference Resource from the PJM energy markets during a period of three consecutive calendar years preceding the time of the determination, based on (1) the heat rate and other characteristics of such Reference Resource; (2) fuel prices reported during such period at an appropriate pricing point for the PJM Region with a fuel transmission adder appropriate for such region, as set forth in the PJM Manuals, assumed variable operation and maintenance expenses for such resource of \$6.47 per MWh, and actual PJM hourly average Locational Marginal Prices recorded in the PJM Region during such period; and (3) an assumption that the Reference Resource would be dispatched for both the Day-Ahead and Real-Time Energy Markets on a Peak-Hour Dispatch basis; plus (B) ancillary service revenues of \$2,199 per MW-year.
- B) The Office of the Interconnection also shall determine a Net Energy and Ancillary Service Revenue Offset each year for each sub-region of the PJM Region for which the Cost of New Entry is determined as identified above, using the same procedures and methods as set forth in the previous subsection; provided, however, that: (1) the average hourly LMPs for the Zone in which the Reference Resource was assumed to be installed for purposes of the CONE estimate (as specified in the PJM Manuals) shall be used in place of the PJM Region average hourly LMPs; (2) if such sub-region was not integrated into the PJM Region for the entire applicable period, then the offset shall be calculated using only those whole calendar years during which the sub-region was integrated; and (3) a posted fuel pricing point in such sub-region, if available, and (if such pricing point is not available) a fuel transmission adder appropriate to each assumed Cost of New Entry location from an appropriate PJM Region pricing point shall be used for each such sub-region.

vi) Process for Establishing Parameters of Variable Resource Requirement

Curve

- A) The parameters of the Variable Resource Requirement Curve will be established prior to the conduct of the Base Residual Auction

for a Delivery Year and will be used for such Base Residual Auction.

- B) The Office of the Interconnection shall determine the PJM Region Reliability Requirement and the Locational Deliverability Area Reliability Requirement for each Locational Deliverability Area for which a Variable Resource Requirement Curve has been established for such Base Residual Auction on or before February 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values will be applied, in accordance with the Reliability Assurance Agreement.
- C) Beginning with the Delivery Year that commences June 1, 2018, and continuing no later than for every fourth Delivery Year thereafter, the Office of the Interconnection shall review the calculation of the Cost of New Entry for each CONE Area.
 - 1) If the Office of the Interconnection determines that the Cost of New Entry values should be modified, the Staff of the Office of the Interconnection shall propose new Cost of New Entry values on or before ~~July~~May 15, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.
 - 2) The PJM Members shall review the proposed values.
 - 3) The PJM Members shall either vote to (i) endorse the proposed values, (ii) propose alternate values or (iii) recommend no modification, by ~~October~~August 31, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.
 - 4) The PJM Board of Managers shall consider Cost of New Entry values, and the Office of the Interconnection shall file any approved modified Cost of New Entry values with the FERC by ~~December~~October 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.
- D) Beginning with the Delivery Year that commences June 1, 2018, and continuing no later than for every fourth Delivery Year thereafter, the Office of the Interconnection shall review the methodology set forth in this Attachment for determining the Net Energy and Ancillary Services Revenue Offset for the PJM Region and for each Zone.

- 1) If the Office of the Interconnection determines that the Net Energy and Ancillary Services Revenue Offset methodology should be modified, Staff of the Office of the Interconnection shall propose a new Net Energy and Ancillary Services Revenue Offset methodology on or before ~~July~~May 15, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new methodology would be applied.
- 2) The PJM Members shall review the proposed methodology.
- 3) The PJM Members shall either vote to (i) endorse the proposed methodology, (ii) propose an alternate methodology or (iii) recommend no modification, by ~~October~~August 31, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new methodology would be applied.
- 4) The PJM Board of Managers shall consider the Net Revenue Offset methodology, and the Office of the Interconnection shall file any approved modified Net Energy and Ancillary Services Revenue Offset values with the FERC by ~~December~~October 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

b) Locational Requirements

The Office of Interconnection shall establish locational requirements prior to the Base Residual Auction to quantify the amount of Unforced Capacity that must be committed in each Locational Deliverability Area, in accordance with the PJM Reliability Assurance Agreement.

c) Resource Requirements and Constraints

Prior to the Base Residual Auction and each Incremental Auction for the Delivery Years starting on June 1, 2014 and ending May 31, 2017, the Office of the Interconnection shall establish the Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement for the PJM Region and for each Locational Deliverability Area for which the Office of the Interconnection is required under section 5.10(a) of this Attachment DD to establish a separate VRR Curve for such Delivery Year. Prior to the Base Residual Auction and Incremental Auctions for each Delivery Year beginning with the Delivery Year that commences June 1, 2017, the Office of the Interconnection shall establish the Limited Resource Constraints and the Sub-Annual Resource Constraints for the PJM Region and for each Locational Deliverability Area for which the Office of the Interconnection is required under section 5.10(a) of this Attachment DD to establish a separate VRR Curve for such Delivery Year.

d) Preliminary PJM Region Peak Load Forecast for the Delivery Year

The Office of the Interconnection shall establish the Preliminary PJM Region Load Forecast for the Delivery Year in accordance with the PJM Manuals by February 1, prior to the conduct of the Base Residual Auction for such Delivery Year.

e) Updated PJM Region Peak Load Forecasts for Incremental Auctions

The Office of the Interconnection shall establish the updated PJM Region Peak Load Forecast for a Delivery Year in accordance with the PJM Manuals by February 1, prior to the conduct (*or possible conduct*) of the *Twenty-Month Conditional, Ten-Month Conditional, and Scheduled Incremental Auctions* for such Delivery Year (*or, for Delivery Years through the 2016-2017 Delivery Year, prior to the conduct of the First, Second, or Third Incremental Auctions for such Delivery Year*).

Attachment B

Revisions to Section(s) of the
PJM Open Access Transmission Tariff

(Clean Format)

5.10 Auction Clearing Requirements

The Office of the Interconnection shall clear each Base Residual Auction and Incremental Auction for a Delivery Year in accordance with the following:

a) Variable Resource Requirement Curve

The Office of the Interconnection shall determine Variable Resource Requirement Curves for the PJM Region and for such Locational Deliverability Areas as determined appropriate in accordance with subsection (a)(iii) for such Delivery Year to establish the level of Capacity Resources that will provide an acceptable level of reliability consistent with the Reliability Principles and Standards. It is recognized that the variable resource requirement reflected in the Variable Resource Requirement Curve can result in an optimized auction clearing in which the level of Capacity Resources committed for a Delivery Year exceeds the PJM Region Reliability Requirement (less the Short-Term Resource Procurement Target) or Locational Deliverability Area Reliability Requirement (less the Short-Term Resource Procurement Target for the Zones associated with such LDA) for such Delivery Year. For any auction, the Updated Forecast Peak Load, and Short-Term Resource Procurement Target applicable to such auction, shall be used, and Price Responsive Demand from any applicable approved PRD Plan, including any associated PRD Reservation Prices, shall be reflected in the derivation of the Variable Resource Requirement Curves, in accordance with the methodology specified in the PJM Manuals.

i) Methodology to Establish the Variable Resource Requirement Curve

Prior to the Base Residual Auction, in accordance with the schedule in the PJM Manuals, the Office of the Interconnection shall establish the Variable Resource Requirement Curve for the PJM Region as follows:

- Each Variable Resource Requirement Curve shall be plotted on a graph on which Unforced Capacity is on the x-axis and price is on the y-axis;
- The Variable Resource Requirement Curve for the PJM Region shall be plotted by first combining (i) a horizontal line from the y-axis to point (1), (ii) a straight line connecting points (1) and (2), (iii) a straight line connecting points (2) and (3), and (iv) a vertical line from point (3) to the x-axis, where:
 - For point (1), price equals: {the greater of [the Cost of New Entry] or [1.5 times (the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset)]} divided by (one minus the pool-wide average EFORD) and Unforced Capacity equals: [the PJM Region Reliability Requirement multiplied by (100% plus the approved PJM Region Installed Reserve Margin (“IRM”)% minus 3%) divided by (100% plus IRM%)] minus the Short-Term Resource Procurement Target;

- For point (2), price equals: (the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset) divided by (one minus the pool-wide average EFORD) and Unforced Capacity equals: [the PJM Region Reliability Requirement multiplied by (100% plus IRM% plus 1%) divided by (100% plus IRM%)] minus the Short-Term Resource Procurement Target; and
- For point (3), price equals [0.2 times (the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset)] divided by (one minus the pool-wide average EFORD) and Unforced Capacity equals: [the PJM Region Reliability Requirement multiplied by (100% plus IRM% plus 5%) divided by (100% plus IRM%)] minus the Short-Term Resource Procurement Target;

ii) For any Delivery Year, the Office of the Interconnection shall establish a separate Variable Resource Requirement Curve for each LDA for which:

- A. the Capacity Emergency Transfer Limit is less than 1.15 times the Capacity Emergency Transfer Objective, as determined by the Office of the Interconnection in accordance with NERC and Applicable Regional Entity guidelines; or
- B. such LDA had a Locational Price Adder in any one or more of the three immediately preceding Base Residual Auctions; or
- C. such LDA is determined in a preliminary analysis by the Office of the Interconnection to be likely to have a Locational Price Adder, based on historic offer price levels; provided however that for the Base Residual Auction conducted for the Delivery Year commencing on June 1, 2012, the Eastern Mid-Atlantic Region (“EMAR”), Southwest Mid-Atlantic Region (“SWMAR”), and Mid-Atlantic Region (“MAR”) LDAs shall employ separate Variable Resource Requirement Curves regardless of the outcome of the above three tests; and provided further that the Office of the Interconnection may establish a separate Variable Resource Requirement Curve for an LDA not otherwise qualifying under the above three tests if it finds that such is required to achieve an acceptable level of reliability consistent with the Reliability Principles and Standards, in which case the Office of the Interconnection shall post such finding, such LDA, and such Variable Resource Requirement Curve on its internet site no later than the March 31 last preceding the Base Residual Auction for such Delivery Year. The same process as set forth in subsection (a)(i) shall be used to establish the Variable Resource Requirement Curve for any such LDA, except that the Locational Deliverability Area Reliability Requirement for such LDA shall be substituted for the PJM Region Reliability Requirement and the LDA Short-Term Resource Procurement Target shall be substituted for the PJM Region Short-Term Resource Procurement Target. For purposes of calculating the Capacity Emergency

Transfer Limit under this section, all generation resources located in the PJM Region that are, or that qualify to become, Capacity Resources, shall be modeled at their full capacity rating, regardless of the amount of capacity cleared from such resource for the immediately preceding Delivery Year.

iii) Procedure for ongoing review of Variable Resource Requirement Curve shape.

Beginning with the Delivery Year that commences June 1, 2018, and continuing no later than for every fourth Delivery Year thereafter, the Office of the Interconnection shall perform a review of the shape of the Variable Resource Requirement Curve, as established by the requirements of the foregoing subsection. Such analysis shall be based on simulation of market conditions to quantify the ability of the market to invest in new Capacity Resources and to meet the applicable reliability requirements on a probabilistic basis. Based on the results of such review, PJM shall prepare a recommendation to either modify or retain the existing Variable Resource Requirement Curve shape. The Office of the Interconnection shall post the recommendation and shall review the recommendation through the stakeholder process to solicit stakeholder input. If a modification of the Variable Resource Requirement Curve shape is recommended, the following process shall be followed:

- A) If the Office of the Interconnection determines that the Variable Resource Requirement Curve shape should be modified, Staff of the Office of the Interconnection shall propose a new Variable Resource Requirement Curve shape on or before May 15, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.
- B) The PJM Members shall review the proposed modification to the Variable Resource Requirement Curve shape.
- C) The PJM Members shall either vote to (i) endorse the proposed modification, (ii) propose alternate modifications or (iii) recommend no modification, by August 31, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.
- D) The PJM Board of Managers shall consider a proposed modification to the Variable Resource Requirement Curve shape, and the Office of the Interconnection shall file any approved modified Variable Resource Requirement Curve shape with the FERC by October 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

iv) Cost of New Entry

- A) For the Delivery Year commencing on June 1, 2015, and continuing thereafter unless and until changed pursuant to subsection (B) below, the Cost of New Entry for the PJM Region shall be \$128,000 per MW-year. The Cost of New Entry for each LDA shall be determined based upon the Transmission Owner zones that comprise such LDA, as provided in the table below. If an LDA combines transmission zones with differing Cost of New Entry values, the lowest such value shall be used.

Geographic Location Within the PJM Region Encompassing These Zones	Cost of New Entry in \$/MW-Year
PS, JCP&L, AE, PECO, DPL, RECO (“CONE Area 1”)	140,000
BGE, PEPCO (“CONE Area 2”)	130,600
AEP, Dayton, ComEd, APS, DQL, ATSI, DEOK, EKPC (“CONE Area 3”)	127,500
PPL, MetEd, Penelec (“CONE Area 4”)	134,500
Dominion (“CONE Area 5”)	114,500

- B) Beginning with the 2016-2017 Delivery Year, the CONE shall be adjusted to reflect changes in generating plant construction costs based on changes in the Applicable H-W Index, in accordance with the following:

(1) The Applicable H-W Index for any Delivery Year shall be the most recently published twelve-month change, at the time CONE values are required to be posted for the Base Residual Auction for such Delivery Year, in the Total Other Production Plant Index shown in the Handy-Whitman Index of Public Utility Construction Costs for the North Atlantic Region for purposes of CONE Areas 1, 2, and 4, for the North Central Region for purposes of CONE Area 3, and for the South Atlantic Region for purposes of CONE Area 5.

(2) The CONE in a CONE Area shall be adjusted prior to the Base Residual Auction for each Delivery Year by applying the Applicable H-W Index for such CONE Area to the Benchmark CONE for such CONE Area.

(3) The Benchmark CONE for a CONE Area shall be the CONE used for such CONE Area in the Base Residual Auction for the prior Delivery Year (provided, however that the Gross CONE values stated in subsection (a)(iv)(A) above shall be the Benchmark CONE values for the 2015-2016 Delivery Year to which the Applicable H-W Index shall be applied to determine the CONE for subsequent Delivery Years).

(4) Notwithstanding the foregoing, CONE values for any CONE Area for any Delivery Year shall be subject to amendment pursuant to appropriate filings with FERC under

the Federal Power Act, including, without limitation, any filings resulting from the process described in section 5.10(a)(vii)(C) or any filing to establish new or revised CONE Areas.

v) Net Energy and Ancillary Services Revenue Offset

- A) The Office of the Interconnection shall determine the Net Energy and Ancillary Services Revenue Offset each year for the PJM Region as (A) the annual average of the revenues that would have been received by the Reference Resource from the PJM energy markets during a period of three consecutive calendar years preceding the time of the determination, based on (1) the heat rate and other characteristics of such Reference Resource; (2) fuel prices reported during such period at an appropriate pricing point for the PJM Region with a fuel transmission adder appropriate for such region, as set forth in the PJM Manuals, assumed variable operation and maintenance expenses for such resource of \$6.47 per MWh, and actual PJM hourly average Locational Marginal Prices recorded in the PJM Region during such period; and (3) an assumption that the Reference Resource would be dispatched for both the Day-Ahead and Real-Time Energy Markets on a Peak-Hour Dispatch basis; plus (B) ancillary service revenues of \$2,199 per MW-year.
- B) The Office of the Interconnection also shall determine a Net Energy and Ancillary Service Revenue Offset each year for each sub-region of the PJM Region for which the Cost of New Entry is determined as identified above, using the same procedures and methods as set forth in the previous subsection; provided, however, that: (1) the average hourly LMPs for the Zone in which the Reference Resource was assumed to be installed for purposes of the CONE estimate (as specified in the PJM Manuals) shall be used in place of the PJM Region average hourly LMPs; (2) if such sub-region was not integrated into the PJM Region for the entire applicable period, then the offset shall be calculated using only those whole calendar years during which the sub-region was integrated; and (3) a posted fuel pricing point in such sub-region, if available, and (if such pricing point is not available) a fuel transmission adder appropriate to each assumed Cost of New Entry location from an appropriate PJM Region pricing point shall be used for each such sub-region.

vi) Process for Establishing Parameters of Variable Resource Requirement

Curve

- A) The parameters of the Variable Resource Requirement Curve will be established prior to the conduct of the Base Residual Auction

for a Delivery Year and will be used for such Base Residual Auction.

- B) The Office of the Interconnection shall determine the PJM Region Reliability Requirement and the Locational Deliverability Area Reliability Requirement for each Locational Deliverability Area for which a Variable Resource Requirement Curve has been established for such Base Residual Auction on or before February 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values will be applied, in accordance with the Reliability Assurance Agreement.
- C) Beginning with the Delivery Year that commences June 1, 2018, and continuing no later than for every fourth Delivery Year thereafter, the Office of the Interconnection shall review the calculation of the Cost of New Entry for each CONE Area.
 - 1) If the Office of the Interconnection determines that the Cost of New Entry values should be modified, the Staff of the Office of the Interconnection shall propose new Cost of New Entry values on or before May 15, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.
 - 2) The PJM Members shall review the proposed values.
 - 3) The PJM Members shall either vote to (i) endorse the proposed values, (ii) propose alternate values or (iii) recommend no modification, by August 31, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.
 - 4) The PJM Board of Managers shall consider Cost of New Entry values, and the Office of the Interconnection shall file any approved modified Cost of New Entry values with the FERC by October 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.
- D) Beginning with the Delivery Year that commences June 1, 2018, and continuing no later than for every fourth Delivery Year thereafter, the Office of the Interconnection shall review the methodology set forth in this Attachment for determining the Net Energy and Ancillary Services Revenue Offset for the PJM Region and for each Zone.

- 1) If the Office of the Interconnection determines that the Net Energy and Ancillary Services Revenue Offset methodology should be modified, Staff of the Office of the Interconnection shall propose a new Net Energy and Ancillary Services Revenue Offset methodology on or before May 15, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new methodology would be applied.
- 2) The PJM Members shall review the proposed methodology.
- 3) The PJM Members shall either vote to (i) endorse the proposed methodology, (ii) propose an alternate methodology or (iii) recommend no modification, by August 31, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new methodology would be applied.
- 4) The PJM Board of Managers shall consider the Net Revenue Offset methodology, and the Office of the Interconnection shall file any approved modified Net Energy and Ancillary Services Revenue Offset values with the FERC by October 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

b) Locational Requirements

The Office of Interconnection shall establish locational requirements prior to the Base Residual Auction to quantify the amount of Unforced Capacity that must be committed in each Locational Deliverability Area, in accordance with the PJM Reliability Assurance Agreement.

c) Resource Requirements and Constraints

Prior to the Base Residual Auction and each Incremental Auction for the Delivery Years starting on June 1, 2014 and ending May 31, 2017, the Office of the Interconnection shall establish the Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement for the PJM Region and for each Locational Deliverability Area for which the Office of the Interconnection is required under section 5.10(a) of this Attachment DD to establish a separate VRR Curve for such Delivery Year. Prior to the Base Residual Auction and Incremental Auctions for each Delivery Year beginning with the Delivery Year that commences June 1, 2017, the Office of the Interconnection shall establish the Limited Resource Constraints and the Sub-Annual Resource Constraints for the PJM Region and for each Locational Deliverability Area for which the Office of the Interconnection is required under section 5.10(a) of this Attachment DD to establish a separate VRR Curve for such Delivery Year.

d) Preliminary PJM Region Peak Load Forecast for the Delivery Year

The Office of the Interconnection shall establish the Preliminary PJM Region Load Forecast for the Delivery Year in accordance with the PJM Manuals by February 1, prior to the conduct of the Base Residual Auction for such Delivery Year.

e) Updated PJM Region Peak Load Forecasts for Incremental Auctions

The Office of the Interconnection shall establish the updated PJM Region Peak Load Forecast for a Delivery Year in accordance with the PJM Manuals by February 1, prior to the conduct (*or possible conduct*) of the *Twenty-Month Conditional, Ten-Month Conditional, and Scheduled Incremental Auctions* for such Delivery Year (*or, for Delivery Years through the 2016-2017 Delivery Year, prior to the conduct of the First, Second, or Third Incremental Auctions for such Delivery Year*).