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**ORIGINAL**

September 29, 2006

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

10/4

FILED  
OFFICE OF THE  
SECRETARY  
2006 SEP 29 P 3:45

**Re: Settlement Agreement and Explanatory Statement of the Settling Parties Resolving All Issues in PJM Interconnection L.L.C., Docket Nos. ER05-1410-000 and -001, and EL05-148-000 and -001**

Dear Ms. Salas:

PJM Interconnection, L.L.C. ("PJM"), pursuant to Rule 602 of the Commission's Rules, submits for filing, on behalf of itself and the parties listed in the enclosed Settlement Agreement (collectively "Settling Parties"), an original and 14 copies of the settlement documents described below.

**I. Description of the Filing**

The Settlement Agreement filed herein resolves all issues regarding the implementation by PJM of a reliability pricing model ("RPM") to replace PJM's existing capacity obligation rules, without the need for an evidentiary hearing or further proceedings. Therefore, the Settling Parties respectfully request that the Commission approve the Settlement Agreement, including the enclosed revised sheets of the PJM Open Access Transmission Tariff ("PJM Tariff"), PJM Operating Agreement, and the enclosed new Reliability Assurance Agreement for the PJM Region ("RAA"), as set forth in Attachments A through F to the Settlement Agreement.

**II. Documents Enclosed**

The Settling Parties submit the following settlement materials:

1. Explanatory Statement, including appendices containing supplemental affidavits of Mr. Andrew L. Ott, Mr. Joseph E. Bowring, and Mr. Benjamin F. Hobbs, on behalf of PJM; Mr. Paul Williams, on behalf of the Portland Cement Association; and Mr. Robert Stoddard, on behalf of Mirant.

Honorable Magalie R. Salas, Secretary

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2. Settlement Agreement, including appendices containing revised sheets to the PJM Tariff, Operating Agreement and RAA;
3. Proposed Letter Order; and
4. Certificate of Service.

### **III. Comment Dates**

Pursuant to Rule 602(f)(2), comments on the Settlement Agreement must be filed with the Secretary within 20 days of the filing of the settlement, i.e., on or before October 19, 2006, and reply comments must be filed with the Secretary within 30 days of such filing, i.e. on or before October 30, 2006.

### **IV. Request for Review and Waiver**

The Settlement Agreement provides that the RPM construct shall replace PJM's current capacity construct beginning on June 1, 2007, which is the first day of the next annual Delivery Year under the new capacity rules. To permit this implementation date, PJM must conduct the Base Residual Auction for the 2007-2008 Delivery Year in April 2007; therefore, PJM and the market participants must begin to implement the necessary systems and business practice changes as soon as possible. To that end, the Settling Parties are asking the Commission to approve the Settlement Agreement by December 22, 2006. To the extent necessary, waiver of the Commission's notice requirements is requested.

### **V. Service and Request for Waiver of Posting Requirements**

Pursuant to Rules 602(d) and 2010 (18 C.F.R. §§ 385.602(d) & 2010), PJM has served, either by paper or electronic service, the settlement documents listed in section II above, on all the parties listed on the official service list compiled by the Secretary in this proceeding, all PJM members, and all state commissions in the PJM Region.

With regard to service on the PJM members and the state commissions, PJM requests waiver of the posting requirements, so as to permit electronic service rather than paper service. Waiver of paper service is consistent with the Commission's decision to establish electronic service as the default method of service on service lists maintained by the Commission Secretary for Commission proceedings.<sup>1</sup> While Order No. 653 did not amend the posting requirements, application of its rules to tariff filings would be consistent with the Commission's "efforts to reduce the use of paper in compliance with the Government Paperwork Elimination Act."<sup>2</sup> Applying amended section 385.2010(f) to

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<sup>1</sup> See Electronic Notification of Commission Issuances, Order No. 653, 110 FERC ¶ 61,110 (2005).

<sup>2</sup> Id. at P 2, citing 44 U.S.C. § 3504.

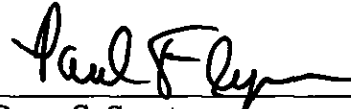
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this filing, PJM will post this filing today to the FERC filings section of its internet site, <http://www.pjm.com/documents/ferc.html>, and send an e-mail to all PJM members and all state utility regulatory commissions in the PJM Region<sup>3</sup> alerting them that this filing has been made by PJM today and is available by following such link. Within one business day, PJM will send a second e-mail to the same list, containing a link that takes the recipient directly to the filed document.<sup>4</sup>

Respectfully submitted,



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Encl.

cc: Service List

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<sup>3</sup> PJM already maintains, updates, and regularly uses e-mail lists for all Members and affected commissions.

<sup>4</sup> PJM anticipates that in unusual circumstances, it may not be possible to post the document to its website on the day of filing, or to distribute an active link to the document within one business day. Consistent with §385.2010(i)(3), if a link to the document does not become available within two business days after filing, PJM will arrange for immediate service by other means.

**PJM Interconnection, L.L.C.**  
**Docket Nos. EL05-148 and**  
**ER05-1410**  
**September 29, 2006**

**Tab 1**  
**Explanatory Statement**  
**And**  
**Attachments**

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

PJM Interconnection, L.L.C.                    )       Docket Nos. ER05-1410-000, -001  
  )                               EL05-148-000, -001

**EXPLANATORY STATEMENT**

PJM Interconnection, L.L.C. (“PJM”), on behalf of the Settling Parties in this proceeding,<sup>1</sup> submits this Explanatory Statement in support of the enclosed Settlement Agreement and Offer of Settlement (“Settlement Agreement”).<sup>2</sup> The Settlement Agreement resolves all issues in Docket Nos. ER05-1410-000 and -001 and EL05-148-000 and -001. Therefore, the Settling Parties request that the Commission approve the Settlement Agreement, including the revised tariff sheets in Attachments A through F to the Settlement Agreement.

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<sup>1</sup> The Settling Parties, comprising most of the active parties in this proceeding with a broad cross-section of load interests, generation owner interests, and state regulators, are listed on page 1 of the Settlement Agreement. In addition, many other parties to the proceeding committed at the September 25, 2006 vote on this Settlement Agreement that they would not oppose Commission approval of the Settlement Agreement without condition or modification. The parties that cast such a vote are: American Municipal Power – Ohio, District of Columbia Office of the People’s Counsel, Delaware Public Service Commission, Duquesne Light Co., Easton Utilities, Illinois Municipal Electric Agency, Northern Illinois Municipal Power Agency, NRG Energy, Inc., Ohio Consumer’s Counsel, Ohio Public Utilities Commission, Pennsylvania Department of Environmental Protection, Pennsylvania Public Utilities Commission, Public Power Association of New Jersey, Rockland Electric Company, Borough of Chambersburg, Direct Energy Services, LLC, and Strategic Energy LLC.

<sup>2</sup> PJM coordinated preparation of this Explanatory Statement with the RPM Settlement Drafting Committee, but any characterization herein of the Settlement Agreement or these proceedings is solely that of PJM and should not be attributed to any other party. In the event of any conflict between this Explanatory Statement and the Settlement Agreement, the provisions of the Settlement Agreement govern.

## I. BACKGROUND

On August 31, 2005, PJM filed under sections 205 and 206 of the Federal Power Act (“FPA”) a proposal for a reliability pricing model (“RPM”) to replace its existing capacity obligation rules (“August 31<sup>st</sup> Filing”). In the August 31<sup>st</sup> Filing, PJM asked the Commission to find that its existing capacity construct is unjust and unreasonable and that its RPM proposal was a just and reasonable replacement.<sup>3</sup>

On April 20, 2006, the Commission issued an Initial Order on RPM.<sup>4</sup> In its order, the Commission found that PJM’s existing capacity construct is unjust and unreasonable.<sup>5</sup> In addition, the Commission made a number of findings as to various aspects of the RPM proposal.<sup>6</sup> In addition to these findings, the Commission instituted a paper hearing and scheduled a technical conference to address a number of issues for which the Commission sought additional information.<sup>7</sup>

Pursuant to the April 20 Order, on May 19, 2006, PJM filed a brief on the paper hearing issues. Parties to the proceeding filed comments on PJM’s brief on June 2, 2006, and reply comments on June 16, 2006.<sup>8</sup> The technical conference required by the April

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<sup>3</sup> *August 31st Filing* at 3.

<sup>4</sup> *PJM Interconnection, L.L.C.*, 115 FERC ¶ P61, 079 (2006) (“April 20 Order”).

<sup>5</sup> *Id.* at P 1.

<sup>6</sup> *Id.* at P 6.

<sup>7</sup> *Id.* at P 173.

<sup>8</sup> The complete record compiled in the paper hearing in this case is generally referred to herein as the “Paper Hearing.”

20 Order was held on June 7-8, 2006. Comments on the technical conference were filed on June 22, 2006.<sup>9</sup>

On May 8, 2006, the American Forest and Paper Association (“AFPA”) filed a motion to establish settlement judge proceedings, and requested that Administrative Law Judge Lawrence Brenner conduct those proceedings.<sup>10</sup> AFPA also requested that the Commission suspend the technical conference and paper hearing procedures established in the April 20 Order pending the outcome of the proposed settlement judge proceedings.<sup>11</sup> On May 17, 2006, the Commission issued an Order Granting Motion for Appointment of Settlement Judge and Denying Request to Suspend Scheduled Proceedings.<sup>12</sup> In that order, the Commission established settlement judge procedures, but denied AFPA’s request to suspend the procedural schedule during the course of the settlement judge proceedings.<sup>13</sup> In addition, the Commission granted AFPA’s request that the scope of the settlement discussions would not be limited to the issues that the Commission ordered to be the subject of the paper hearing and technical conference.<sup>14</sup>

Beginning on June 5, 2006, and continuing through the end of July, the parties to this proceeding engaged in lengthy and intense settlement discussions. As noted in the

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<sup>9</sup> The complete record compiled in the technical conference in this case is generally referred to herein as the “Technical Conference.”

<sup>10</sup> A number of parties either supported or did not oppose the motion to establish settlement judge proceedings.

<sup>11</sup> *See* AFPA Motion at 1.

<sup>12</sup> 115 FERC ¶ 61,186 (2006).

<sup>13</sup> *Id.* at P 1.

<sup>14</sup> *Id.* at P 5.

August 3, 2006 Report By Settlement Judge On Agreement In Principle issued in this proceeding, over 150 individuals representing more than 65 parties engaged in more than 25 days of settlement discussions with direct Settlement Judge involvement and with the assistance of Mr. Steven Shapiro of the Dispute Resolution Service, and numerous other meetings among the negotiating parties during the settlement period. On August 2, the parties voted on an agreement in principle embodied in a settlement term sheet. All of the parties to the Settlement Agreement (at section I at p. 4) either voted to support or not oppose the settlement term sheet.<sup>15</sup>

Throughout the months of August and September, the parties either supporting or not opposing settlement engaged in further negotiations to resolve the open issues and specifics necessary to reach final settlement on all issues in the term sheet. In addition, the parties drafted and finalized the Settlement Agreement, the accompanying PJM Tariff sheets, and necessary changes to the Reliability Assurance Agreement (“RAA”). Following substantial completion of those documents,<sup>16</sup> the parties met again on September 25, 2006 and voted on the Settlement Agreement. The Settling Parties consist

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<sup>15</sup> Only six parties to the proceeding voted to oppose the settlement term sheet. They were Catocin Power, LLC, Coral Power LLC, Maryland Office of the People’s Counsel, New Jersey Board of Public Utilities, PPL Parties, and the PSEG Companies (as noted in the Settlement Agreement).

<sup>16</sup> The RPM Settlement Drafting Committee, consisting of designated representatives of PJM, buyers, and sellers, made minor conforming, clarifying, or correcting changes to the Settlement Agreement and tariff/RAA sheets after the vote, to prepare those documents for filing.



of all parties that voted at that time to support the settlement. The parties listed in footnote 1 above voted not to oppose the settlement.<sup>17</sup>

In preparation for filing, the parties also prepared this Explanatory Statement and several supplemental affidavits in support of the settlement. Those supplemental affidavits, Attachments A through E to this Explanatory Statement, are submitted by Mr. Andrew L. Ott, Mr. Joseph E. Bowring, and Professor Benjamin F. Hobbs, on behalf of PJM; Mr. Paul R. Williams, on behalf of the Portland Cement Association; and Mr. Robert B. Stoddard, on behalf of Mirant.

## **II. DETAILED DESCRIPTION OF THE SETTLEMENT AGREEMENT**

### **A. Use of August 31<sup>st</sup> Filing as Baseline**

The settlement in this case takes as its starting point the amendments to the PJM Tariff, Operating Agreement, and Reliability Assurance Agreement included in the August 31<sup>st</sup> Filing, and makes numerous specified changes to those provisions. To eliminate uncertainty, the Settlement Agreement (at section V at P. 46) states that unless otherwise provided therein, the provisions in the August 31<sup>st</sup> Filing apply. This approach also is reflected in the implementing revisions to the PJM Tariff, Operating Agreement and RAA that are set forth in Attachments A through F to the Settlement Agreement and expressly incorporated as part of the Settlement Agreement. The changes made by the Settlement Agreement to the new RPM Tariff attachment<sup>18</sup> and the new RAA relative to

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<sup>17</sup> Four additional parties voted at that time to oppose the settlement. Those parties are BP Energy, the Long Island Power Authority, J.P. Morgan Energy Ventures Corp. and Mittal Steel.

<sup>18</sup> In the August 31<sup>st</sup> Filing, the attachment to the PJM Tariff that contained the RPM terms and conditions was designated as "Attachment Y." For this filing, that attachment has been redesignated as "Attachment DD." However, all (continued)

the August 31<sup>st</sup> Filing are shown in redline form in this settlement filing (all other Tariff and Operating Agreement changes are redlined against the current effective sheets). The Settlement Agreement (at section V) further states that, to the extent there is a conflict between any provisions of the Settlement Agreement and the attached tariff and agreement provisions, those tariff and agreement provisions shall govern.

#### **B. Implementation Date**

The Settlement Agreement (at section II.A) provides that the RPM construct, as described in the Settlement Agreement and tariff sheets, shall replace PJM's current capacity construct beginning on June 1, 2007, which is the first day of the next annual Delivery Year<sup>19</sup> under PJM's capacity rules. To permit this implementation date, PJM must conduct the Base Residual Auction for the 2007-2008 Delivery Year in April 2007; therefore, PJM and the market participants must begin to implement the necessary systems and business practice changes as soon as possible. To that end, the Settling Parties request that the Commission approve the Settlement Agreement by December 22, 2006.

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(continued)

language of that attachment remains the same as in the August 31<sup>st</sup> Filing, except for the changes shown by the redlining in this filing. Similarly, the new consolidated RAA has been redesignated from Rate Schedule FERC No. 42 in the August 31<sup>st</sup> Filing to Rate Schedule FERC No. 44 in this filing, but the text has been changed only as shown by the redlined version in this filing. In accordance with the Settlement Agreement (at section II.P.9) the RAA also has been updated to reflect relevant amendments to the East RAA, West RAA, or South RAA that have become effective since August 31, 2005.

<sup>19</sup> Capitalized terms used in this Explanatory Statement that are not otherwise defined herein have the meaning given in the PJM Tariff or Reliability Assurance Agreement.

### C. Variable Resource Requirement Curve

Consistent with the April 20 Order, which endorsed in principle reliance on a downward-sloping demand curve to clear the capacity market,<sup>20</sup> the Settlement Agreement (at section II.B) provides that the RPM capacity auctions shall be cleared using a downward-sloping Variable Resource Requirement Curve (“VRR Curve”). The VRR Curve adopted by the Settlement Agreement (“Settlement Curve”), however, contains significant modifications to the VRR Curve proposed by PJM in the August 31<sup>st</sup> Filing, which shift the curve downward to correlate the varying capacity requirement levels with generally lower prices. Id.

Figure 1 below compares the Settlement Curve with the curve proposed in the August 31<sup>st</sup> Filing.<sup>21</sup> As can be seen, the Settlement Curve establishes a lower value for capacity at nearly all capacity levels. There is a crucial point of convergence: both curves value at the Net Cost of New Entry a cleared capacity level equal to the Installed Reserve Margin plus one percent. This important feature of the proposed curve in the August 31<sup>st</sup> Filing, which was discussed and supported at length in the Technical Conference, is preserved by the Settlement. The curves diverge in both directions from that point, with the Settlement Curve yielding progressively lower prices as either capacity surpluses or capacity shortages increase. The curves also share the same zero crossing point, with both dropping to the horizontal axis at a cleared capacity level equal

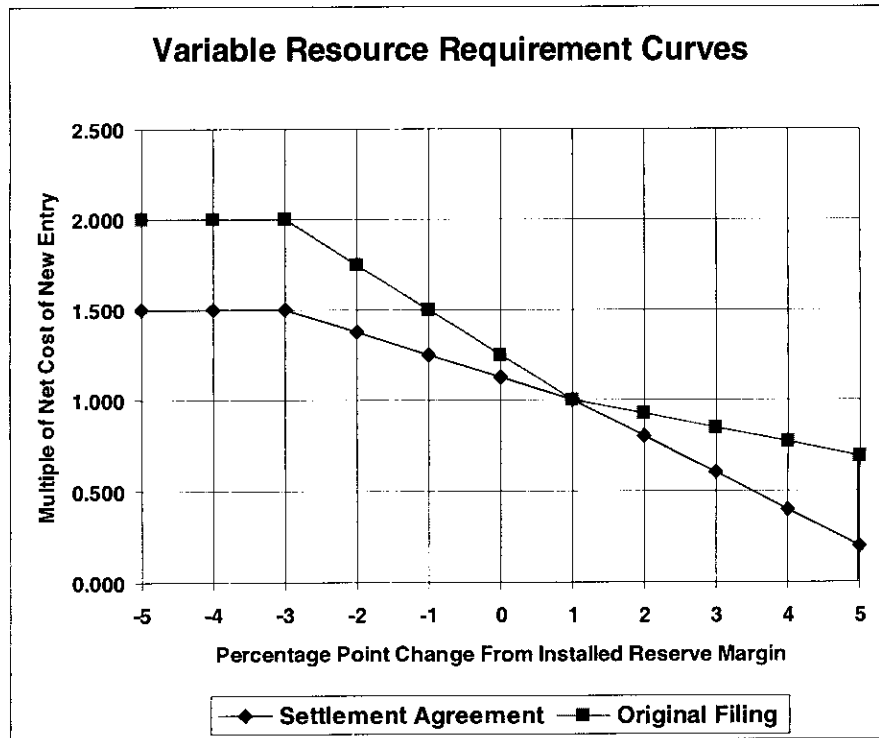
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<sup>20</sup> April 20 Order at PP 104-108.

<sup>21</sup> The comparison illustrated here is not exact, due to a difference in the price calculation method. The VRR Curve included in the August 31<sup>st</sup> Filing calculated the price as [(multiplier) times (CONE)] minus (EAS Offset). The Settlement Curve calculates price as (multiplier) times [(CONE) minus (EAS Offset)].

to IRM plus five percent. By design, therefore, the Settlement Curve results in lower capacity costs at almost all capacity levels.

**Figure 1**  
**Comparison of Settlement Curve**  
**and VRR Curve Proposed in the August 31<sup>st</sup> Filing**



Even though it sets a lower capacity cost, the Settlement Curve performs similarly, on the key measures of long-term reliability and long-term total cost to consumers, to the VRR Curve proposed in the August 31<sup>st</sup> Filing. At PJM’s request, Professor Benjamin F. Hobbs of the Johns Hopkins University supplemented his prior affidavits in this case to present the results of a long-run dynamic simulation of the relative performance of the Settlement Curve under a broad range of differing

assumptions.<sup>22</sup> Based on his economic simulations, Professor Hobbs “conclude[s] that the Settlement Curve’s performance would likely be similar to that of [the] [c]urve [that] was recommended by PJM in its August 31, 2005 filing, and much better than the vertical demand curve” that more closely reflects PJM’s current capacity construct.<sup>23</sup>

As Professor Hobbs explains, his simulations show that the Settlement Curve is likely to lead to reserve levels meeting or exceeding the Installed Reserve Margin 95% of the time, compared with 98% of the time for the originally proposed curve.<sup>24</sup> Similarly, the Settlement Curve leads to comparable levels of total consumer costs as the originally proposed curve, i.e., \$82/peak kW/year versus \$79 peak kW/year.<sup>25</sup> Notably, the Settlement Curve performs far better on these measures than a “no demand curve” case that effectively is a vertical line at the Installed Reserve Margin, capped at a price of twice the CONE minus the energy and ancillary services revenue offset. The vertical demand curve is likely to meet or exceed the IRM only about 52 percent of the time, and leads to total consumer costs of about \$123/peak kW/year, i.e., about fifty percent greater costs than either the Settlement Curve or the curve proposed in the August 31<sup>st</sup> Filing. Id. Thus, Professor Hobbs correctly observes that the differences between the Settlement Curve and PJM’s originally proposed curve “are very small compared to the gulf between

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<sup>22</sup> Discussion of Professor Hobbs’ analysis in this filing does not imply endorsement of that analysis by any Settling Party.

<sup>23</sup> Hobbs Supplemental Affidavit, at 8.

<sup>24</sup> Id. at 5.

<sup>25</sup> Professor Hobbs shows that this relative performance of the Settlement Curve (i.e., comparable to, but slightly below the PJM-filed curve) continues across a wide range of sensitivity analyses, which reinforces his conclusions. Id. at 8.

their performance and that of Curve 1 (“No Demand Curve”), which performs much worse.”<sup>26</sup>

In short, the differences between curve in the August 31<sup>st</sup> Filing and the Settlement Curve are minor compared to the substantial benefits of moving from the current construct to either of those two alternatives.

As stated by Mr. Andrew L. Ott in his supplemental affidavit, this analysis shows that the Settlement Curve provides reasonable assurance that the PJM Region will continue to meet reliability objectives.<sup>27</sup> His conclusion is amply supported by the record developed in the Technical Conference, which included extensive discussion of minimum acceptable reliability levels, alternative downward-sloping curves to meet these levels, and the details and relative merits of Professor Hobbs’ simulation analysis and alternative analyses.

Moreover, while this detailed simulation modeling suggests that the Settlement Curve will help ensure continued reliability, the Settlement Agreement preserves PJM’s ability to address any issues promptly if that expected reliability is not achieved. The Settling Parties have agreed to include the RPM terms and conditions in the PJM Tariff and Reliability Assurance Agreement, both of which are documents that PJM has the right to amend under FPA Section 205.<sup>28</sup> The Settlement Agreement (at section III) expressly adds that nothing in the agreement shall be construed as affecting in any way PJM’s right unilaterally to make application to the Commission for a change in rates,

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<sup>26</sup> Id. at 8.

<sup>27</sup> Ott Supplemental Affidavit at 2.

<sup>28</sup> Settlement Agreement at section III.

terms and conditions under FPA section 205.<sup>29</sup> The Settlement Agreement (at section III) leaves in place the originally-filed tariff provisions that require PJM to evaluate the need for changes to the VRR Curve or its parameters at least every three years,<sup>30</sup> to report on the performance of RPM within four and a half years after RPM is implemented,<sup>31</sup> and to investigate the costs and benefits of transmission upgrades in the RTEP process if elevated locational prices do not result in new entry.<sup>32</sup> Consistent with these provisions, even before three years have elapsed, if available evidence indicates that RPM is not working as intended to promote reliability, PJM will investigate the causes and exercise its FPA section 205 rights to file any necessary changes if warranted.

#### **D. Forward Commitment of Capacity**

The Settlement Agreement retains forward commitment of capacity largely as proposed in the August 31<sup>st</sup> Filing (and as endorsed in principle by the April 20th Order<sup>33</sup>), but reduces the forward period (i.e., the period between the Base Residual Auction and the start of the Delivery Year) when RPM is fully implemented from four years to three. As explained by Mr. Ott in his accompanying affidavit, three years remains sufficient to meet the essential purpose of forward commitment, i.e., to provide a

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<sup>29</sup> By the same token, nothing in the Settlement Agreement is to be construed as restricting any rights of the other parties under the FPA, including their rights under section 206. In recognition of the careful balancing of positions, the Settlement Agreement requires PJM to hold at least one stakeholder meeting to discuss the proposed changes, and give at least 15 days prior notice of that meeting, before filing to change the Reference Resource or CONE Areas.

<sup>30</sup> See PJM Tariff Attachment DD, section 5.10(a)(iii).

<sup>31</sup> See PJM Tariff Attachment DD, section 17.6

<sup>32</sup> See PJM Tariff Attachment DD, section 15.

<sup>33</sup> April 20 Order at PP 67-72..

credible prospect of new entry. The unrebutted record supports this conclusion. PJM's witness Mr. Raymond L. Pasteris presented a detailed development timeline for a combustion turbine plant configuration typical of new entry units in the PJM Region. His timeline, which no party disputed, showed a typical 33-month period between the signing of an Incremental Facilities Study Agreement for a new plant and the plant's commercial operation date.<sup>34</sup> Under the RPM rules, a proposed new generation plant must have a signed Interconnection Facilities Study Agreement before it can participate in the Base Residual Auction,<sup>35</sup> which—pursuant to the Settlement Agreement—will take place 36 months before the start of the Delivery Year. Therefore, a three-year forward auction schedule still allows a typical new entry combustion turbine to offer into the auction and credibly commit to be in service by the Delivery Year.

The Settlement Agreement provides (at section II.C) that PJM will conduct a Base Residual Auction (“BRA”) and three Incremental Auctions largely as proposed in Original Attachment Y, except for the one-year reduction in the forward schedule. The Base Residual Auction will be the basic mechanism to ensure the lowest cost, three-year forward commitment of capacity that satisfies the region's reliability needs and all locational constraints. Id. The three Incremental Auctions will provide a mechanism for market participants to commit additional resources that may be needed for the Delivery Year either to replace previously committed resources that have become unavailable or to accommodate an increase in the forecasted load (Id. at section II.D). Attachment F to this Explanatory Statement shows a timeline of all relevant milestones once RPM is fully

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<sup>34</sup> See August 31<sup>st</sup> Filing, Tab I, p. 23, Figure 3.

<sup>35</sup> See RAA (Attachment A to the Settlement Agreement), section 1.67.



implemented, beginning with the first deadline for PJM to post information for auction participants, continuing through the Base Residual and Incremental Auctions, and culminating in the Delivery Year addressed by those auctions.

The Settlement Agreement provides that the commitment period for the capacity offered in the Base Residual Auction is one year, beginning on June 1 and continuing through May 31 of the following calendar year (“Delivery Year”) (id. at section II.E). However, addressing concerns noted in the April 20 Order<sup>36</sup> and raised by both Commission Staff and intervenors in the Paper Hearing and Technical Conference, the Settlement Agreement also provides an opportunity under certain circumstances for new entry units to receive their first-year clearing price for up to two additional years, as further discussed in section II.J below.

**E. Locational Requirements, System Constraints, and Integration of RPM with the RTEP Process**

The Settlement Agreement (at section II.H) adopts locational capacity pricing largely as proposed in the August 31<sup>st</sup> Filing, retaining the connection—endorsed by the April 20 Order<sup>37</sup>—between the capacity pricing areas (known as Locational Deliverability Areas (“LDAs”)) and the areas analyzed in the Regional Transmission Expansion Planning (“RTEP”) process for system constraints. However, as explained below, the Settlement Agreement: (i) slightly lengthens the LDA phase-in schedule; (ii) requires an FPA section 205 filing before a new LDA is created; (iii) clarifies and makes more transparent the rules on when a separate VRR Curve is used in an LDA (which is a

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<sup>36</sup> April 20 Order at P 74.

<sup>37</sup> Id. at PP 49, 52.

predicate to prices “separating,” i.e., increasing in an LDA); and (iv) clarifies certain aspects of the interaction between RPM and the RTEP process id..

### 1. Phase-in of LDAs for RPM Pricing Purposes

This Settlement Agreement (at section II.H.1) retains, after a phase-in period, the 23 LDAs proposed in the August 31<sup>st</sup> Filing as potential capacity pricing regions. The record developed in the Paper Hearing fully supports and explains those 23 LDAs and their necessary relationship to the reliability planning process.

The Settlement Agreement (at section II.H.1) modifies the phase-in that precedes full implementation of those 23 LDAs. The August 31<sup>st</sup> Filing proposed two large LDAs for the expected first year of RPM, four large LDAs for the second year, and full implementation of the proposed 23 LDAs beginning with the third year id.. Under that proposal, the four LDAs proposed for the second year consisted of: Southwestern MAAC,<sup>38</sup> Eastern MAAC,<sup>39</sup> the MAAC Region plus APS,<sup>40</sup> and an LDA consisting of the remaining zones in the PJM Region (hereinafter, the “Rest of Market” or “ROM”) (Settlement Agreement at section II.H.1).<sup>41</sup>

The Settlement Agreement establishes a phase-in of three years before full LDA implementation, rather than two, and uses the four LDAs described above for each of

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<sup>38</sup> Potomac Electric Power Co. and Baltimore Gas & Electric Co.

<sup>39</sup> Public Service Electric And Gas Co., Jersey Central Power & Light Co., Philadelphia Electric Co., Atlantic Electric, Delmarva Power & Light, and Rockland Electric.

<sup>40</sup> SW MAAC and Eastern MAAC plus Pennsylvania Electric, Metropolitan Edison, PPL, and Allegheny Power.

<sup>41</sup> Commonwealth Edison, American Electric Power, Dayton Power & Light, Dominion-Virginia Power, and Duquesne Light.

those three years. Accordingly, those four LDAs will be effective for the Delivery Years of 2007-08, 2008-09, and 2009-10. For the Delivery Year of 2010-11, all 23 LDAs will be effective. id.

The Settlement Agreement preserves, however, some of the potential price-signaling benefits of the full complement of 23 LDAs even during the transition. Id. After conducting the Base Residual Auctions for each of the first three Delivery Years, PJM will calculate and post, for informational purposes only, the prices that would have resulted if all 23 LDAs were in place. Potential project developers therefore will have additional information to help guide their project scope and location decisions, and market participants will have additional information to help prepare their hedging strategies and business practices for full RPM implementation.

## **2. Identification of Transmission Constraints for Pricing Purposes**

The Settlement Agreement expressly recognizes that prices may not separate in all 23 LDAs (at section II.H.2). Indeed, prices cannot separate in an LDA unless the algorithm used to clear the auction employs a separate VRR Curve for that LDA, id., tailored to the capacity requirements for the expected peak loads in that LDA.<sup>42</sup> Notably, as the Settlement Agreement recognizes, even if an LDA has its own VRR Curve, the locational constraint may not bind and prices may not separate in that LDA, because the Base Residual Auction will clear using the actual resource offers in each of the LDAs.

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<sup>42</sup> All such VRR Curves have the same shape and inflection points as the Settlement Curve described above; only the megawatt inputs (reflecting loads and demand resources only in the given LDA) and the dollar inputs (reflecting any subregional differences in the Net Cost of New Entry) will change. The algorithm used to clear the auction considers the PJM Region VRR Curve and any separate LDA VRR Curves through a simultaneous optimization calculation.

Taking account of these considerations, the Settlement Agreement improves upon the August 31<sup>st</sup> Filing by clearly establishing, and making transparent, the rules that determine when a separate VRR Curve will be used for an LDA (Settlement Agreement at II.H.2).

In particular, the Settlement Agreement establishes a default screen to determine whether to employ a separate VRR Curve for an LDA, based on objective measures that indicate that an LDA is constrained or is close to becoming constrained. Id. Accordingly, the Settlement Agreement provides that, consistent with the phase-in of LDAs discussed above, PJM will establish a separate VRR Curve for an LDA whenever the Capacity Emergency Transfer Limit (“CETL”) for the LDA is less than 105% of the Capacity Emergency Transfer Objective (“CETO”) for that LDA. Id. Moreover, even if this screen is not passed, PJM is permitted to determine that an acceptable level of reliability, consistent with the Reliability Principles and Standards (as defined in the RAA), requires establishment of a separate VRR Curve for an LDA with a margin greater than 5%. Id. The Settlement Agreement provides that, in such a case, PJM will post on its website, at least three months before the Base Residual Auction, the LDA for which the VRR Curve is being established and the margin or other information that is being used rather than the 5% margin. Id.

To ensure the market has other information that may influence prices and capacity commitments, the Settlement Agreement (section II.H.2) provides that PJM will post, at least three months before each Base Residual Auction, the CETO and CETL values for all LDAs; the LDAs that do not have the potential to bind because they are not constrained LDAs; the LDAs for which a separate VRR Curve has been established; and the separate curve and associated data (e.g., LDA Reliability Requirement, projected

Interruptible Load for Reliability, applicable Cost of New Entry, and applicable Net Cost of New Entry) for each such LDA.

### **3. Integration with Regional Transmission Expansion Planning Process**

The Settlement Agreement (at II.H.3) clarifies the manner in which the Capacity Resources will be integrated with the Regional Transmission Expansion Planning process. First, Generation Capacity Resources that do not clear in the Base Residual Auctions, and are not sold elsewhere, shall be considered the minimum amount of at-risk generation in the market efficiency analysis of the RTEP process and shall be considered at-risk in the sensitivity cases in the RTEP market efficiency analysis. Id. The Settlement Agreement provides that, if necessary, PJM shall file to amend Schedule 6 of the PJM Operating Agreement to ensure such treatment of “at-risk” generation. Id. Second, the Settlement Agreement provides that the PJM planning market efficiency analysis shall take into account energy congestion and locational capacity prices, differentials in the initial cost-benefit determination of proposed transmission solutions, and later cost-benefit analyses. Id. PJM submitted tariff and Operating Agreement revisions to address reforms such as these in the RTEP process on September 8, 2006 in Docket No. ER06-1474-000

### **4. Changes to LDAs**

The Settlement Agreement adopts the offer made by PJM in its Paper Hearing reply comments that any LDA changes would require a section 205 filing (Settlement Agreement at section II.H.4.C). Specifically, the Settlement Agreement provides that, in order for PJM to change any of the LDAs, either during the transition or in the end state, PJM must make a filing under Section 205 of the FPA to effectuate such a change. Id.

The Settlement Agreement (at section II.H.4.a) further provides that, when a new LDA is included in the PJM RTEP planning process, PJM will make a filing to add such LDA to RPM (including a new aggregate LDA), so long as the new region is projected to have a CETL less than 105% of CETO, or if such new region is required to assure an acceptable level of reliability, consistent with the Reliability Principles and Standards, as discussed above.

In addition, market participants may propose, and PJM will evaluate, new LDAs (including new aggregate LDAs) for inclusion in the RTEP planning process and RPM under the standards described above.

#### **F. Seasonal Pricing and Operational Reliability Requirements**

The Settlement Agreement eliminates two features of the August 31<sup>st</sup> Filing—seasonal pricing and Operational Reliability Requirements—that added significantly to the complexity of RPM.

The April 20 Order questioned the justification for seasonal pricing and directed the parties to address the issue in the Paper Hearing.<sup>43</sup> While PJM reiterated its support for seasonal pricing, no intervenor that addressed the issue supported seasonal pricing. The Settling Parties have agreed, in the interests of compromise, to eliminate seasonal pricing.

The August 31<sup>st</sup> Filing also included rules to quantify the PJM Region's needs for generating capacity with certain attributes that enhance operational reliability, and to increase the auction clearing price as necessary to ensure commitment of units with such capabilities. The Settlement Agreement (at Section II.P.1) provides that these operational

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<sup>43</sup> April 20 Order at P 74.

reliability requirements shall be eliminated from the capacity construct. However, the Settlement Agreement requires PJM to file with the Commission to implement by June 2008 markets and/or market rules, outside of the RPM markets, to address the “Operational Reliability Requirements” described in the August 31<sup>st</sup> Filing (i.e., load-following (which includes cycling) and thirty minute reserves). Id. The Settlement Agreement makes clear that PJM must make such a filing, through a stakeholder process or, if that fails, unilaterally, in time to implement this provision by June 2008. Id.

### **G. Determination of the Cost of New Entry**

#### **1. CONE for First Four Delivery Years**

The Settlement Agreement (at section II.L.1) provides that the Cost of New Entry (“CONE”) used to establish the VRR Curves for the Base Residual Auctions for the first, second, third, and fourth Delivery Years<sup>44</sup> shall be at the levels proposed in the August 31<sup>st</sup> Filing. The August 31<sup>st</sup> Filing and the record of the Technical Conference provide substantial evidence on which the Commission may approve this level of the Cost of New Entry for use during the initial years. The Settlement Agreement (at section II.L.1) provides that the CONE will be offset by the Net Energy and Ancillary Services Revenue offset, which will continue to be determined separately in accordance with the provisions of the Settlement Agreement (as discussed below) and the PJM Tariff.

#### **2. Procedures for Possible Automatic Adjustment to the Cost of New Entry for the Fifth and Subsequent Delivery Years**

The record of the Technical Conference also reflects substantial support for a mechanism that replaces a CONE value based on an administrative cost estimate (such as

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<sup>44</sup> That is, the Delivery Years commencing June 1, 2007, June 1, 2008, June 1, 2009, and June 1, 2010. Id.

that proposed in the August 31<sup>st</sup> Filing) with a value that reflects empirical data on actual capacity market activity. The Settlement Agreement (at section II.L.2) establishes such an adjustment mechanism. As discussed below, and as more fully described in the accompanying affidavit of Mr. Paul R. Williams, the Settlement Agreement's carefully balanced "Empirical CONE" methodology (at section II at P 26) permits gradual changes (both up and down) in CONE to reflect auction-clearing prices in a given area. Professor Hobbs also reviews this aspect of the settlement and observes that this proposal will "move over time in the direction of the Empirical CONE if bidding behavior indicates a persistent shift in peaking technology costs," while "yield[ing] much less year-to-year variation than the situation where the demand curve's CONE was set equal to the Empirical Cone."<sup>45</sup>

As set forth in section 5.10(a)(iv)(B) of Attachment DD, the Cost of New Entry shall be subject to adjustment after the Transition Period when there is a Net Demand for New Resources in the auctions for a CONE Area over three consecutive Delivery Years. A Net Demand for New Resources means that, over the three-year period, the factors that increase demand for new entry, i.e., load growth and generation retirements, exceed the initial surplus of capacity in the first year of the three-year period, if any.<sup>46</sup> For this purpose, a surplus is defined as capacity in excess of the Installed Reserve Margin plus 1% (or the LDA equivalent of that regional IRM benchmark).

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<sup>45</sup> Hobbs Supplemental Affidavit at 9.

<sup>46</sup> The net demand also can be increased or decreased to the extent the Capacity Emergency Transfer Limit for the area decreases or increases, respectively, over the three-year period.



When an area exhibits a Net Demand for New Resources over three years, its CONE may be adjusted depending on the level of capacity cleared in the Base Residual Auction for the third year.<sup>47</sup> If the amount of capacity cleared falls within a defined “Equilibrium Zone,” no change to CONE is required. Generally speaking, the Equilibrium Zone is the area between capacity sufficient to meet the IRM and capacity sufficient to meet the IRM plus two percent (or the LDA equivalents of those measures). If capacity cleared is below the Equilibrium Zone, then CONE generally will be increased.<sup>48</sup> Conversely, if capacity cleared is above the Equilibrium Zone, CONE will be decreased, unless the quantity of capacity above the Equilibrium Zone stays constant or decreases over the three-year period.

When these provisions require an increase or decrease to the CONE in a CONE Area, the amount of the increase or decrease will be half the difference between the current CONE value and “Empirical CONE,” but in either case the change can be no more than ten percent of the current CONE value. For this purpose, Empirical CONE is defined as the average of the clearing prices in the auctions for the CONE Area for the three years, plus the average of the Net Energy and Ancillary Services Revenue Offsets for that area over the three-year period.

This adjustment mechanism begins with the three large subregions of the PJM Region (known as “CONE Areas”) for which separate administrative estimates of CONE

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<sup>47</sup> In some circumstances, the trend in the quantity of capacity cleared over the three years is considered.

<sup>48</sup> The exception is that if CONE was increased in the same area the previous year, it will be increased again only if there is a greater shortage below the Equilibrium Zone in the third year of the most recent three-year period than there was in the first year of that period.

were proposed in the August 31<sup>st</sup> Filing. When such CONE Areas encompass areas that are cleared with differing VRR Curves, the evaluation described above will be performed for each of those areas, and the results weight-averaged by the capacity obligation in each such area. Moreover, if an LDA has a separate VRR Curve for three consecutive years, then it will be evaluated on a stand-alone basis, and if the evaluation indicates a change in CONE of at least ten percent, then that area will become a "CONE Area," and its CONE will be adjusted by ten percent.

Notably, these limitations on automatic adjustments to CONE do not preclude PJM from exercising its FPA section 205 rights to file a change to the CONE value for any CONE Area.<sup>49</sup>

#### **H. Net Energy and Ancillary Services Revenue Offset to the Cost of New Entry Used to Establish the VRR Curve**

The Settlement Agreement (at section II.M) adopts a formulaic approach to determine the Net Energy and Ancillary Services Revenue Offset, largely as proposed in the August 31<sup>st</sup> Filing and previously supported in this proceeding,<sup>50</sup> with two notable changes. First, while the offset will be based (as proposed in the August 31<sup>st</sup> Filing) on the six most recent calendar years preceding the Base Residual Auctions for the first, second, and third Delivery Years,<sup>51</sup> only three years of history will be used for the

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<sup>49</sup> As previously noted, PJM must hold at least one stakeholder meeting (with at least 15 days prior notice of such meeting) before filing at the Commission to change CONE.

<sup>50</sup> See, e.g., Mr. Bowring's Affidavit in the August 31<sup>st</sup> Filing (at Tab G. pp. 1-9) and Mr. Ott's Technical Conference Affidavit, at pp.6-7.

<sup>51</sup> Thus, the offset for the auctions conducted in 2007 for the Delivery Years beginning on June 1, 2007, June 1, 2008, and June 1, 2009 all will be based on LMPs and fuel costs over the period 2001 through 2006.

auctions for the subsequent Delivery Years.<sup>52</sup> Second, the offset shall be calculated on the assumption that the Reference Resource is dispatched on a “Peak-Hour” basis, rather than a “Perfect Dispatch” basis. As explained by Mr. Bowring and Mr. Ott in their prior affidavits in this proceeding,<sup>53</sup> perfect dispatch assumes the combustion turbine Reference Resource can respond perfectly to changes in LMPs, whereas peak-hour dispatch takes into account the operating limitations on starting, stopping, and re-starting such resources. Substantial evidence therefore supports use of the peak-hour dispatch approach in the Settlement Agreement (section II.M, page 28).

In addition to these changes, the Settlement Agreement (*id.* at page 27) also: (i) provides that the Reference Resource, and its heat rate, will be fixed in the PJM Tariff, changeable only through an FPA section 205 filing; (ii) further specifies the fuel cost assumptions in the calculation; and (iii) sets rules to calculate the offset in areas that have been integrated into the PJM Region for less than the otherwise applicable three or six calendar years.

### **I. Auction Clearing**

The Settlement Agreement (at section II.G.2) clarifies Section 5.12 of Original Attachment Y to ensure that PJM minimizes total PJM Region capacity costs, regardless of whether the quantity clearing the Base Residual Auction is above or below the applicable target quantity, by providing that the optimization algorithm will select from

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<sup>52</sup> Thus, the offset for the auction in May 2008 for the Delivery Year beginning June 1, 2011 will be based on LMPs and fuel costs for calendar years 2005, 2006, and 2007.

<sup>53</sup> See note 50 above.

among multiple possible alternative clearing results that satisfy applicable constraints and requirements.

The Settlement Agreement lists (at section II.G.2), as examples of such alternatives, scenarios in which the auction clears by: (i) accepting a lower-priced Sell Offer that intersects the VRR Curve and that specifies a minimum capacity block; (ii) accepting a higher-priced Sell Offer that intersects the VRR Curve and that contains no minimum-block limitations; (iii) or rejecting both of the above alternatives and clearing the auction at the higher-priced point on the VRR Curve that corresponds to the Unforced Capacity provided by all Sell Offers located entirely below the VRR Curve.<sup>54</sup> Attachment G to this Explanatory Statement provides graphs that illustrate these scenarios.

The Settlement Agreement (at section II.G.2) also fills a gap in RPM's auction-clearing rules by specifying how multiple Sell Offers that result in the same total cost will be cleared. This change, and the other changes noted above, provide greater clarity to the auction-clearing rules and greater certainty to market participants, than was provided by the August 31<sup>st</sup> Filing.

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<sup>54</sup> The Settlement Agreement (at section II.G.2) also amends section 5.12 to add the basic principle that, when the supply curve falls short of the VRR Curve, the auction will clear at the point on the VRR Curve directly above the end of the supply curve. While Mr. Ott described this aspect of the clearing mechanism in his initial affidavit in this proceeding, see August 31<sup>st</sup> Filing, Tab E, at page 10, the rule was never explicitly stated in the tariff.

## **J. New Entry Price Adjustment**

The April 20 Order posed the question whether a revenue commitment of more than one year was needed to induce new entry.<sup>55</sup> In its Paper Hearing Brief (at pages 36-37), PJM proposed a mechanism that would provide greater price certainty for up to five years for new units under certain circumstances. The Settlement Agreement (at section II.K) adopts a variant of that proposal as a “New Entry Price Adjustment” in the PJM Tariff, as described below and as more fully explained by Mr. Stoddard in his accompanying affidavit.

Under new section 5.14(c) of Attachment DD, a seller that offers a new entry unit that clears the Base Residual Auction for a Delivery Year may, by providing written notice with its offer in the first-year auction, elect to submit offers with a New Entry Price Adjustment in the Base Residual Auctions for the two immediately succeeding Delivery Years if: (i) acceptance of its offer in the first year moved the committed capacity in that LDA from a position below the LDA Reliability Requirement to a position well in excess of that requirement;<sup>56</sup> and (ii) the seller’s offers in the two subsequent years are for a price equal to the lesser of its first-year offer price or 90 percent of the then-applicable Net CONE.

If these conditions are met, the seller’s offer sets the clearing price (also received by all other sellers) in the first year and, if its offer clears in a subsequent year, it receives the higher of its first-year offer price or the clearing price for that subsequent year. Any

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<sup>55</sup> April 20 Order at 74.

<sup>56</sup> Specifically, any point on the downward-sloping curve where the price is at or below 40 percent of Net CONE.

payment to the seller above the clearing price will not increase the clearing price received by other sellers; rather, any such payment will be collected from all loads as a resource make-whole payment.

The Settlement Agreement (at section II.H.2) adds that so long as these conditions are satisfied, PJM shall continue to use a separate VRR Curve for the affected LDA, even if the LDA does not pass the 105% CETL-CETO test discussed above. Mr. Stoddard explains the reasons for this requirement in his Supplemental Affidavit (at page 5).

The Settlement Agreement further provides that the PJM Market Monitoring Unit's existing authority, review, and reporting responsibilities will include the New Entry Price Adjustment (at section II.K.2).

**K. Minimum Offer Price Rule for New Entry in Constrained LDAs**

The Settlement Agreement (at section II.J) adds a new Section 5.14(h) to Attachment DD of the PJM Tariff, establishing a Minimum Offer Price Rule for new entry sell offers in constrained LDAs. Mr. Stoddard discusses this rule in detail in his accompanying affidavit (at pages 6-11).

The new provision requires the PJM Market Monitoring Unit to develop locational asset-class estimates of competitive, cost-based, real levelized (year one) Cost of New Entry, net of energy and ancillary service revenues, consistent in most respects (except for the levelization) with the method used to determine the Cost of New Entry for initial use in RPM. The new section requires that these estimates of the Net Asset Class Cost of New Entry shall be zero for: (i) base load resources that require a period for development greater than three years; (ii) hydroelectric power production facilities; (iii) any upgrade or addition to an existing generation unit; or (iv) any new entry unit being developed in response to a state regulatory or legislative mandate to resolve a projected

capacity shortfall in the Delivery Year affecting that state, as determined pursuant to a state evidentiary proceeding that includes due notice, PJM participation, and an opportunity to be heard.

The PJM Market Monitoring Unit will evaluate any offer based on a new entry unit submitted in a Base Residual Auction for the first Delivery Year in which the unit qualifies as new entry, in any constrained LDA, and determine whether (i) the offer affects the Clearing Price; (ii) the offer is less than 80 % of the applicable Net Asset Class Cost of New Entry;<sup>57</sup> and (iii) the seller and any affiliates have a “net short position” (as defined in section 5.14(h)(ii)(3)) in the Base Residual Auction for the LDA that equates to 5 or 10 percent (depending on LDA size) of the LDA Reliability Requirement.

If the PJM Market Monitoring Unit determines that these conditions are met, it will notify the seller and give it an opportunity to provide information to support its offer. If the seller doesn't provide the information, or the information doesn't support its offer, then an alternative Sell Offer, equal to 90% of the applicable Net Asset Class Cost of New Entry,<sup>58</sup> will be employed in place of the actual Sell Offer.

The Market Monitoring Unit then shall request that PJM perform a sensitivity analysis that re-calculates the clearing price for the Base Residual Auction employing the alternative sell offer, as described above, in place of the actual offer. If the new clearing

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<sup>57</sup> If there is no applicable Net Asset Class Cost of New Entry, the test will be whether the offer is less than 70 percent of the Net Asset Class Cost of New Entry for the Reference Resource effective in such LDA.

<sup>58</sup> If there is no applicable Net Asset Class Cost of New Entry, then the offer shall be set equal to 80 percent of the Net Asset Class Cost of New Entry for the Reference Resource.

price and the initial clearing price differ by more than 25 dollars per megawatt-day (or if greater, by more than certain percentage amounts that vary based on the size of the LDA), then PJM shall redetermine the auction results by first calculating the replacement clearing price and the total capacity needed for the LDA, based on the alternative sell offer described above; and then accepting sell offers to fill that needed capacity, based on the actual offer prices and the following priority: (i) first, all Sell Offers in their entirety designated as self-supply; (ii) then, all Sell Offers of zero, prorating to the extent necessary, and (iii) then all remaining Sell Offers in order of the lowest price.

The Settlement Agreement (at section II.J.6) also states that this provision will terminate when there exists a positive Net Demand for New Resources (that is, when accumulated load growth and generation retirements overtake an initial capacity surplus), calculated cumulatively over all preceding RPM Delivery Years beginning with the first Delivery Year, for the portion of the PJM Region that was unconstrained during that first RPM Delivery Year. Even if this condition is met however, the Minimum Offer Price Rule will be reinstated for any constrained LDA that has a gross Cost of New Entry equal to or greater than 150 percent of the greatest prevailing gross Cost of New Entry in any adjacent LDA.

The Settlement Agreement (section II.J, pages 21-22) also emphasizes that this provision is not intended to reflect any position of the Settling Parties regarding the appropriate level of offer price for new capacity resources in a residual auction.

#### **L. Transfer of Obligation to Pay Locational Reliability Charges**

The Settlement Agreement (at section II.H.5) leaves in place provisions of the August 31<sup>st</sup> Filing that PJM will support self-supply and bilateral contracts through various means, including capacity pricing hubs and electronic forums for bilateral



transactions. The Settlement Agreement adds to those options a new mechanism for Load-Serving Entities to transfer to one another or to other market participants (for purposes of PJM settlements and billing) their obligations to pay Locational Reliability Charges. The Settlement Agreement provides that PJM shall facilitate a process, similar to its current bilateral energy trading tool, eSchedules, whereby before or after any Base Residual Auction, an LSE or other Market Participant can provide PJM with a schedule that specifies the transferor, transferee, volume of capacity to be transferred, location where capacity prices are calculated, and start and end date of that transfer. The Settlement Agreement clarifies that such transfers shall not alter the physical supply and demand balance in the BRA, nor establish any obligations that are incompatible with any RPM auction.

#### **M. Market Power Mitigation**

The Settlement Agreement (at section II.I) provides that all market power mitigation rules shall be as proposed in the August 31<sup>st</sup> Filing and in PJM's May 19, 2006 Brief on Paper Hearing Issues (at pages 25 to 38),<sup>59</sup> with certain exceptions, as discussed below.

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<sup>59</sup> Certain of the redlined changes to section 6 of Attachment DD implement PJM's commitment in the Paper Hearing Brief that the outcome of the Commission's consideration of the "three pivotal supplier" test in the energy market would be applied to the RPM market power mitigation rules. *See, e.g.*, sections 6.3(b)(ii) and 6.3(c).

### **1. Market Power Mitigation Rules for Planned Generation Capacity Resources**

The August 31<sup>st</sup> Filing provided that offer caps would not be applied to sell offers relying on Planned Generation Capacity Resources,<sup>60</sup> and that such resources remained “planned” until their commercial operation date, allowing them to offer into as many as four Base Residual Auctions without offer capping. The Settlement Agreement (at section II.I.1) amends Section 6.5(a)(ii) of Attachment DD to provide that offers based on Planned Generation Capacity Resources are not subject to offer capping in the auctions for the first Delivery Year that the resource qualifies as a planned resource, but may be rejected if found by the PJM Market Monitoring Unit not to be competitive in accordance with certain specified criteria and procedures.

The Settlement Agreement (Id. at page 12) elaborates that new entry offers for a planned resource’s first year generally will not be rejected if: (1) collectively all new entry offers provide capacity of at least twice the incremental quantity of new entry needed to meet the LDA Reliability Requirement (i.e., the LDA’s equivalent of IRM + 1); and (2) at least two unaffiliated suppliers have submitted new entry offers in the LDA. Even if those conditions are met, however, a seller, together with its Affiliates, whose new entry offers in that LDA are pivotal, is subject to mitigation.

Where the first two conditions are not met, or the seller and its Affiliates’ new entry offers are pivotal, the Market Monitoring Unit will conduct further analysis to determine whether to reject the new entry offer as not consistent with competitive conditions. The MMU will compare such offers against other new entry offers and with

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<sup>60</sup> See August 31<sup>st</sup> Filing, Tab C (Attachment Y), Section 6.5(a)(ii).

various measures of the Net Cost of New Entry, both in that LDA and other LDAs (with due recognition for locational differences). The MMU also will evaluate potential barriers to new entry on the basis of interviews with potential suppliers and other market participants. If the Market Monitoring Unit determines based on these analyses to reject the offer as non-competitive, it will notify the seller after the auction, but before the final determination of clearing prices and offer it an opportunity to submit a revised offer. If the revised offer is found competitive by the MMU in accordance with the above criteria, PJM will clear the auction with the revised offer in place. If the revised Sell Offer is not deemed competitive, it will be rejected.

After it clears for one year, a new unit is treated as existing (and potentially subject to offer capping) in the auctions for subsequent years. However, as described above in section II.J, such resources may receive certain price assurances for the two Delivery Years that follow their first Delivery Year of service, under the New Entry Price Adjustment.

## **2. Modifications and Clarifications to Avoidable Cost Formula**

The Settlement Agreement (at section II.I.2) also modifies the Avoidable Cost Rate (i.e., the offer-capping rate) and associated rules contained in Section 6.8 of Original Attachment Y in several respects.

First, the Settlement Agreement amends the definition of "Project Investment" in section 6.8(a), and the related rule in section 6.8(d) defining avoidable cost, to clarify that expenditures reasonably required to improve a unit's availability during Peak-Hour Periods can be recovered under the avoidable cost cap.

Second, the Settlement Agreement modifies the Capital Recovery Factor tables in section 6.8(a) by adding two new categories that allow more rapid recovery of Project

Investment under certain conditions. The first new category, known as “Mandatory Capital Expenditures,” with an assumed recovery period of four years, is available to certain types of units that must make a Project Investment to comply with a governmental requirement that otherwise would materially impact operating levels in the Delivery Year. Coal, oil, or gas-fired units that are at least 15 years old can elect this recovery option under certain specified conditions; and coal-fired units that are at least 50 years old can elect this option under certain other conditions. No offer electing this option can exceed a level of 90% of the then applicable Net Cost of New Entry.

The second new category, known as the “40-Year Plus Alternative” allows recovery of all Project Investment in only one year. This alternative is available to gas or oil-fired resources that are at least 40 years old, unless the resource is receiving generation deactivation credits under PJM’s Tariff. No offer electing this option can exceed the then applicable Net Cost of New Entry, and if a seller elects this highly accelerated one-year recovery option, its unit will be treated as “at-risk” in PJM’s transmission planning sensitivity analyses.

Third, the Settlement Agreement (id., at page 13) establishes certain additional general rules and procedures on recovery of capital expenditures. Sellers may elect the highest Capital Recovery Factor for which they are eligible, or the next highest CRF. If a seller elects the “16-Plus” CRF (based on recovery of costs over five years) for the Base Residual Auctions for the 2007-2008 or 2008-2009 Delivery Years, its offer cannot exceed the then-current Net Cost of New Entry. In addition, a seller relying on any CRF must provide the PJM Market Monitoring Unit with detailed information in support of its proposed capital recovery, including, for informational purposes only, evidence of the actual expenditure of the Project Investment when that information becomes available. If

a seller submits an offer relying on the CRF table, but the project associated with its Project Investment is not in commercial operation during the relevant Delivery Year, it must either (i) make a rebate payment; (ii) hold the rebate payment in escrow if the project will be in operation the next year; or (iii) make a reasonable investment in the amount of the Project Investment in other existing generation units owned or controlled by it or its Affiliates in the same LDA.

### **3. Relaxed Information Requirement Conditions**

The August 31<sup>st</sup> Filing proposed that sellers in areas that failed a preliminary market structure screen would be required to submit extensive cost data and supporting material in advance of the Base Residual Auction so that the PJM Market Monitoring Unit could calculate an offer cap for that seller in case the auction results indicated that offer capping was required. The Settlement Agreement (at section II.I.3) establishes categories of prospective sell offers for which this information will not be required.

In particular, if a sell offer concerns a unit that is in an unconstrained area of the PJM Region (i.e., an area without a separate VRR Curve) and the unit is in a class that is not likely to include the marginal price-setting resources in such auction, then the offer-capping information need not be submitted. Alternatively, even if the above conditions are not met, but the seller commits that its offer will not exceed a price above the level identified for the relevant resource class by the Market Monitoring Unit, then it need not submit the offer-capping information.

The Settlement Agreement (at section II.I.3 at page 17) provides that the PJM Market Monitoring Unit shall determine, in its discretion, following stakeholder consultation, the resource classes and corresponding prices described above, and shall post such resource classes and prices three months before the Base Residual Auction.

The Settlement Agreement clarifies that these rules do not preclude the Market Monitoring Unit from requesting additional information from any potential auction participant as deemed necessary by the Market Monitoring Unit; and that compliance with such a request shall be a condition of participation in any auction. The Settlement Agreement also establishes rules for rejection and resubmission of offers that are inconsistent with any commitment made by a seller to qualify for the relaxed information requirement.

The Settlement Agreement (at section II.I.2, page16) also modifies Section 6.7 of Attachment DD to provide that when a seller submits the offer-capping cost data and supporting material, the Market Monitoring Unit shall notify the seller one month before the auction whether the submittal will be accepted, and if not, provide the seller detailed information as to why the submittal was not accepted.

#### **4. Offer Cap Offset**

When an offer is subject to offer-capping, the cap is reduced by the amount of certain other revenues the unit is projected to receive during the Delivery Year in question. The August 31<sup>st</sup> Filing generally provided that these Projected PJM Market Revenues would be based on the same method used to determine the net revenue offset for the Variable Resource Requirement Curve. The extent of reliance on that method, however, which concerned an estimate for a hypothetical Reference Resource, was not clear as applied to the projected revenues of the specific units that would be subject to offer-capping.

The Settlement Agreement (at section II.I.4) clarifies this matter by providing in a new section 6.8(d) that a generating unit's Projected PJM Market Revenues shall include all actual unit-specific revenues over certain specified time periods from PJM energy

markets, PJM ancillary services, and unit-specific bilateral contracts from such unit, net of marginal costs for providing such energy<sup>61</sup> and ancillary services from such resource.

The historic time periods used for this purpose are the same as those used to compute the offset for the VRR Curve: for the Base Residual Auctions held in 2007 for the first three RPM Delivery Years (2007-08, 2008-09, 2009-10), a unit's Projected PJM Market Revenues will be the simple average of its net revenues (as described above) for calendar years 2001-2006; and for Delivery Year 2010-11 and thereafter, a unit's Projected PJM Market Revenues will be the rolling simple average of such net revenues from the three most recent calendar years before the BRA is held.

The Settlement Agreement also establishes rules to govern this calculation for units that were not in commercial operation, or were in areas not integrated into the PJM Region, for part of the three or six calendar year periods considered.

### **5. Market Power Mitigation During the Transition Period**

The Settlement Agreement (at section II.I.5) amends the Transition Period rules in section 17 of Attachment DD to make clear that the market power mitigation rules in section 6 of that attachment apply to all RPM auctions conducted for the Transition Period. However, the Settlement Agreement also establishes one special rule effective only during RPM's first three Delivery Years. If a signatory to the Settlement Agreement (id. at P. 18), or any Affiliate of such a signatory, that owns or controls less than 10,000 megawatts of capacity in the PJM Region,<sup>62</sup> submits an offer in an auction for any of the

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<sup>61</sup> That is, costs allowed under cost-based offers pursuant to Section 6.4 of Schedule 1 of the PJM Operating Agreement.

<sup>62</sup> This ceiling applies separately to a seller's merchant and regulated fleets.

first three RPM years, its offer is in an unconstrained part of the PJM Region (i.e., the area has no separate VRR Curve), and its offer is subject to offer capping, then the offer cap for up to 3000 megawatts of the seller's offered Unforced Capacity will be increased by up to \$10/MW-day for the 2007-2008 or 2008-2009 Delivery Years and up to \$7.50/MW-day for the 2009-2010 Delivery Year

**N. Peak-Hour Period Availability Charges and Credits**

The Settlement Agreement (at section II.N.2) significantly enhances the capacity construct in the PJM Region by adding a means to assess whether generation resources committed as capacity actually are available at expected levels during peak periods, and by crediting or charging resources to the extent they exceed or fall short of that expected availability. As explained by Mr. Ott in his accompanying affidavit (at pages 3-4), this will provide generation owners a significant added incentive to ensure that their capacity resources are available when they are most needed, and provide loads greater assurance that their payments for capacity will help maintain peak-period reliability. This balanced, negotiated provision also protects sellers, by limiting their maximum exposure to these charges, and by establishing special rules for units that run very few hours during the year and natural-gas-fired units that encounter winter-period supply disruptions.

As described below, the Settlement Agreement (at section II.N.2) adds a new section 10 to the RPM attachment in the PJM Tariff, addressing peak-hour period availability charges and credits. For each seller, its units' actual availability during Peak-Hour Periods<sup>63</sup> will be compared against their expected availability, and the seller will be

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<sup>63</sup> Peak-Hour Periods are defined as the hours between 2:00 p.m. and 7:00 p.m. on non-holiday weekdays in the summer (June through August) and the hours between (continued)



charged, or credited, to the extent its portfolio of units in an LDA has a net availability shortfall, or net availability excess, respectively.<sup>64</sup>

A unit's expected availability will be based on its demand-equivalent forced outage rate ("EFOR<sub>D</sub>") for the entire year, using the rolling average EFOR<sub>D</sub> for the five most recent annual EFOR<sub>D</sub> testing periods.<sup>65</sup> The Settlement Agreement (at section II.N.2) provides that those calculations will exclude outages deemed outside plant management control ("OMC") in accordance with NERC standards and guidelines.

A unit's actual peak-hour period availability for a Delivery Year will be calculated during the Peak-Hour Periods of that Delivery Year, considering only the unit's forced outage hours during those periods when the unit would have been called upon, i.e., the outage hours during which the unit's cost-based energy offer would have been less than the applicable LMP, or when the unit would have been called upon (absent the outage) for operating reserves.<sup>66</sup> The calculation will exclude OMC outages, and will not include any capacity unavailability that resulted in a charge or penalty under other PJM provisions due to delay, cancellation, retirement, de-rating, or rating test failure.

If a unit has fewer than fifty total service hours during Peak-Hour Periods, then its actual peak-hour period availability will be based on the unit's EFOR<sub>D</sub> (calculated in the

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(continued)

7:00 a.m. and 9:00 a.m. and between 6:00 p.m. and 8:00 p.m. on non-holiday weekdays in the winter (December through January).

<sup>64</sup> These charges and credits do not apply to wind or solar resources.

<sup>65</sup> PJM's EFOR<sub>D</sub> calculations are based on 12-month periods ending September 30.

<sup>66</sup> In both cases, PJM will determine whether a unit would have been called on consistent with the PJM Manuals (including, without limitation, respecting such unit's operating constraints).

same manner as for the Unforced Capacity it is allowed to sell, i.e., using the most recent twelve-month EFOR<sub>d</sub> period, rather than the average of five such periods). The Settlement Agreement (at pages 32-33) adds that if a single-fueled, natural gas-fired unit fails to perform during the winter Peak-Hour Period, it will be excused if the owner can demonstrate to PJM that the failure was due to non-availability of gas to supply the unit.

In addition to getting the benefit of portfolio netting, a seller that expects its unit to experience a Peak-Hour Period outage that could result in an availability shortfall (or whose unit is actually experiencing such an outage) may obtain and commit replacement capacity (not previously committed) meeting the same locational requirement, as a way of avoiding or mitigating the shortfall.<sup>67</sup>

The Settlement Agreement (at section II.N.2, page 32) also bounds a seller's exposure by providing that, in most cases, the maximum shortfall for any of its units cannot exceed 50% of the unit's Unforced Capacity. The exception is that if a unit's availability is so poor that it triggers the 50% limit, then its maximum shortfall for the next year is raised to 75% of the unit's Unforced Capacity. If the unit then hits that 75% level, there is no limit on the potential reduction to its Unforced Capacity in the following year. When the percentage exposure is increased for a unit, it remains at that level until the unit's shortfall, if any, falls below 50% of its Unforced Capacity for three consecutive years.

Any seller with a net availability shortfall in an LDA as determined under these rules will be assessed a Peak-Hour Period Availability Charge, equal to such shortfall

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<sup>67</sup> The settlement contemplates that replacement capacity will be committed through PJM's eCapacity system, which allows such commitments to take effect on one day's notice.

times the annual clearing price for that LDA for the Delivery Year in question, i.e., 365 times the clearing price expressed in \$/MW-day. The revenues from such charges shall be distributed first to RPM auction sellers and FRR Entities that have a net excess in peak-hour period availability for their committed capacity in that LDA.<sup>68</sup> Any revenues remaining after that distribution will be distributed to all LSEs in the Zone that were charged the same Locational Reliability Charge for the Delivery Year for which the Peak Hour Period Availability Charge was assessed, and to all FRR Entities in the Zone that are LSEs and whose FRR Capacity Plan resources over-performed in the Delivery Year, on a pro-rata basis in accordance with each LSE's Daily Unforced Capacity Obligation.<sup>69</sup>

As described above, new section 10 provides that a single-fueled, natural gas-fired unit's failure to perform during the winter peak period will be excused if the seller can demonstrate to PJM that such failure was due to non-availability of gas to supply the unit. The Settlement Agreement (at P. 32) adds that, by June 1, 2007, PJM will analyze the historical availability of gas supplies in the PJM Region during winter conditions and its impact on the ability of generators to deliver capacity and to otherwise affect their reliability of performance. PJM shall, to the extent that such analysis indicates is necessary, develop adequate performance metrics within the PJM Manuals, and file to change the above provision of section 10 through an FPA section 205 filing.

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<sup>68</sup> The maximum credit is based on the seller's net availability excess times the applicable clearing price.

<sup>69</sup> The Settlement Agreement (at section II.N.2) also provides that PJM will provide estimated charges and credits under new section 10 for the summer Peak-Hour Periods by three months after the end of that summer period, with final charges and credits billed by three calendar months after the end of the winter period.

### **O. Ability to Cure Rating Test Failure Charge**

The Settlement Agreement (at section II.N.1) mostly leaves in place the various resource performance charges and credits proposed in Sections 7-13 of Original Attachment Y.<sup>70</sup> Generally speaking, sellers that commit a resource that becomes unavailable (or derated) before the Delivery Year have an opportunity to procure replacement capacity through either the first or third incremental auctions (conducted 23 months and 4 months before the Delivery Year, respectively) and thereby avoid or mitigate performance or deficiency charges they might otherwise incur.

The Settlement Agreement (at section II.N.1) provides a similar ability to avoid or mitigate charges resulting from a rating test failure that occurs during the Delivery Year. Consistent with the practice under PJM's current capacity construct, a generation resource will be tested under Attachment DD, section 7 in both the summer and winter to verify its rated installed capacity. If it fails the test (multiple testing is allowed), then the resource can be assessed a performance charge retroactively to the start of the relevant season. The Settlement Agreement (id.) modifies that section to provide that a seller that fails (or is expected to fail) a rating test may obtain and commit capacity from a replacement unit meeting the same locational requirements (including uncommitted or uncleared capacity from units that were otherwise committed).<sup>71</sup>

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<sup>70</sup> The Operational Reliability Performance Charge formerly provided in section 10, however, has been replaced by the Peak-Hour Period Availability provision discussed above.

<sup>71</sup> As with the designation of replacement capacity under the peak-period availability provision discussed above, commitments of replacement capacity will be effective upon no less than one day's notice to PJM.

**P. Reliability Backstop**

The Settlement Agreement (at section II.F) retains Section 16 of Original Attachment Y, but modifies section 16.3(a)(i) to provide that, rather than being triggered after four consecutive years, the Reliability Backstop will be triggered “if the total Unforced Capacity of all Capacity Resources committed through Self-Supply or the Base Residual Auctions for three consecutive Delivery Years.” (emphasis added).

**Q. Fixed Resource Requirement**

PJM included in its August 31<sup>st</sup> Filing the outlines of an alternative means of addressing capacity obligations, outside the RPM capacity auctions, through a long-term commitment of resources.<sup>72</sup> In the April 20 Order, the Commission endorsed such an alternative and found that LSEs choosing this option must do so for an extended period of time, and must not be allowed to move in and out of the forward procurement auction from year to year.<sup>73</sup>

The Settlement Agreement (at section II.O.2) adopts a long-term Fixed Resource Requirement Alternative (“FRR Alternative”) based on that outlined by PJM in the August 31<sup>st</sup> Filing, with various changes. The Settlement Agreement clarifies that the FRR Alternative applies only to the ability of an FRR Entity to meet its capacity obligations and does not affect the ability of an FRR Entity to participate in any other PJM markets. Id.

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<sup>72</sup> August 31<sup>st</sup> Filing at Tab [A].

<sup>73</sup> April 20 Order at PP 110-111.

## 1. Eligibility

An investor-owned utility (“IOU”), Electric Cooperative, or Public Power Entity, as defined in the RAA, shall be eligible to select the FRR Alternative if it demonstrates the capability to satisfy the entire Unforced Capacity obligation for all load, including load growth, in the applicable FRR Service Area for the term of such entity’s participation in the FRR Alternative. (Settlement Agreement at section II.O.1).

Eligible entities that select the FRR Alternative must designate all load, including load growth, in the PJM Region. However, an FRR Entity may split its loads between RPM and the FRR Alternative if: (1) the Party elects the FRR Alternative for all load (including expected load growth) in one or more FRR Service Areas; (2) the Party complies with the rules and procedures of the Office of the Interconnection and all relevant Electric Distributors related to the metering and reporting of load data and settlement of accounts for separate FRR Service Areas; and (3) the Party separately allocates its Capacity Resources to and among FRR Service Areas in accordance with rules specified in the PJM Manuals.<sup>74</sup>

In addition, an LSE that serves only its affiliates (“Single-Customer LSE”) may select the FRR Alternative, provided that: (a) the Single-Customer LSE is a signatory to this Settlement Agreement (or is an entity that (i) is a named member of an association or coalition that is a signatory to the Settlement Agreement, and (ii) does not file or join in any comments opposing this Settlement Agreement); (b) the Single-Customer LSE selects the FRR Alternative on or before April 1, 2008; (c) the Single-Customer LSE

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<sup>74</sup> The Settlement Agreement (at section II.O.1, pages 33-34) provides that PJM will use sub-accounts for parties meeting these conditions, to facilitate implementation of these provisions.

meets the requirements of Section B.3. of Schedule 8.1 to the PJM RAA; and (d) the aggregate total of such selections does not exceed 1000 MW of Obligation Peak Load in the PJM Region. Settlement Agreement at Section II.O.1, page 34.

## **2. Election, and Termination of Election, of the FRR Alternative**

An entity eligible for the FRR Alternative must make its initial selection of the FRR Alternative option no less than two months before the conduct of the BRA for the first Delivery Year for which such election is to be effective (Settlement Agreement at Section II.O.2). Such notice must be provided in writing to the Office of the Interconnection and the minimum duration of the FRR Alternative selection is five consecutive Delivery Years.

An FRR Entity may terminate its election of the FRR Alternative effective with the commencement of any Delivery Year following the minimum five Delivery Year commitment by providing written notice of such termination to PJM no later than two months prior to the BRA for such Delivery Year. An FRR Entity that has terminated its election of the FRR Alternative shall not be eligible to re-elect the FRR Alternative for a period of five consecutive Delivery Years following the effective date of such termination.

However, in the event of a State Regulatory Structural Change, as defined in Section 1.68 of the RAA, the affected FRR Entity may either elect the FRR Alternative or terminate its election of the FRR Alternative effective as to any Delivery Year by providing written notice of such election or termination to PJM as soon as possible but in any event no later than two months prior to the BRA for such Delivery Year. Id. at page 35.

No later than one month prior to the deadline for entities to select the FRR Alternative, PJM shall post on its website the percentage of Capacity Resources required to be located in each LDA. Id.

### **3. FRR Capacity Plan and FRR Commitment Insufficiency Charge**

No later than one month before the initial BRA after FRR selection, each FRR Entity shall submit its FRR Capacity Plan to PJM demonstrating its commitment of Capacity Resources for the term of such election sufficient to meet the FRR Entity's Daily Unforced Capacity Obligation for the load identified in the FRR Capacity Plan. Each FRR Entity shall extend and update such plan by no later than one month prior to the BRA for each succeeding Delivery Year. Id. at page 35.

Each FRR Capacity Plan shall indicate the nature and current status of each resource, including the status of each planned Generation or Demand Response resource, the planned deactivation or retirement of any such resource, and the status of commitments for each sale or purchase of capacity included in the FRR Capacity Plan. Id.

The FRR Capacity Plan of any FRR Entity that commits, for any Delivery Year, not to sell surplus Capacity Resources as a Capacity Market Seller in the RPM auctions, either directly or indirectly, shall designate Capacity Resources in an amount no less than the Forecast Pool Requirement for each applicable Delivery Year times the FRR Entity's allocated share of the Preliminary Zonal Peak Load Forecast for such Delivery Year. Id. at page 36. Those FRR Entities that do not commit, for any Delivery Year, to not sell surplus Capacity Resources as a Capacity Market Seller in the RPM auctions, either directly or indirectly, shall designate Capacity Resources at least equal to the Threshold



Quantity, as defined in Section 1.68A and Schedule 8.1 to the PJM RAA. The Threshold Quantity cannot be sold into the RPM auctions, but can be used to meet the FRR Entity's load growth or be sold to an entity outside of PJM or to another FRR Entity. Id.

All Capacity Resources committed in an FRR Capacity Plan shall meet the applicable Capacity Resource requirements pursuant to the RAA and the PJM Operating Agreement and must be on a unit-specific basis. Capacity Resources that are subject to bilateral contract(s) for less than a full Delivery Year may be committed in an FRR Capacity Plan if the resources included in such plan in the aggregate satisfy all obligations for all Delivery Years. Id.

All load management programs on which an FRR Entity intends to rely for a Delivery Year must be included in the FRR Capacity Plan and satisfy all requirements applicable to Demand Resources. However, previously uncommitted Unforced Capacity from such load management programs may be used to satisfy an increased capacity obligation of an FRR Entity. Id.

For each LDA for which PJM establishes a separate VRR Curve for any Delivery Year addressed by a Capacity Resource Plan, the plan must include a minimum percentage of Capacity Resources for such Delivery Year located within such LDA ("Percentage Internal Resources Required"). Such Percentage Internal Resources Required shall be calculated as provided in Section D.5. of Schedule 8.1 to the PJM RAA. An FRR Entity may reduce its Percentage Internal Resources Required for an LDA by committing to a Qualified Transmission Upgrade, as set forth in Attachment Y to the PJM Tariff, that increases the CETL for such LDA. Id. at page 37.

PJM shall assess the adequacy of all FRR Capacity Plans. If PJM determines that an FRR Capacity Plan submitted by an entity seeking to elect the FRR Alternative does

not satisfy the Party's capacity obligations, the entity shall not be permitted to elect the FRR Alternative. Id.

If a previously approved FRR Entity submits an FRR Capacity Plan that is not sufficient, the Office of the Interconnection shall notify the FRR Entity, in writing, of the insufficiency within five (5) business days of the submittal of the FRR Capacity Plan. If the FRR Entity does not cure such insufficiency within five (5) business days after receiving such notice of insufficiency, then the FRR Entity shall be assessed an FRR Commitment Insufficiency Charge. The amount of this charge shall be equal to two times the CONE for the relevant location, times the shortfall of Capacity Resources below the FRR Entity's capacity obligation, including any Threshold Quantity requirement, for the remaining term of the plan. Id.

#### **4. Conditions on Purchases and Sales of Capacity Resources by FRR Entities**

An FRR Entity may not include in its FRR Capacity Plan for any Delivery Year any Capacity Resource that has cleared in any RPM auction for such Delivery Year. An FRR Entity may include in its FRR Capacity Plan Capacity Resources obtained from another FRR Entity, provided, however, that each FRR Entity is responsible for meeting its own capacity obligations and that the same megawatts of Unforced Capacity shall not be committed to more than one FRR Capacity Plan for any given Delivery Year. Id. at section II.O.4, page 38.

An FRR Entity that designates Capacity Resources in its FRR Capacity Plan for a Delivery Year based upon a Threshold Quantity may offer to sell Capacity Resources in excess of that needed for the Threshold Quantity in an RPM auction, provided, however, that such sales must not exceed an amount equal to the lesser of (a) 25% times the

Unforced Capacity equivalent of the IRM for such Delivery Year times the Preliminary Forecast Peak Load for which the FRR Entity is responsible under its plan for such Delivery Year, or (b) 1300 MW. Id.

An FRR Entity that designates Capacity Resources in its FRR Capacity Plan for a Delivery Year based upon a Threshold Quantity may not offer to sell such resources in any RPM auction, but may use such resources to meet any increased capacity obligation due to unanticipated load growth, or may sell such resources outside the PJM region or to another FRR Entity. Id.

An entity that selects the FRR Alternative for only part of its load in the PJM Region that designates Capacity Resources as Self-Supply in an RPM auction to meet its expected Daily Unforced Capacity Obligation shall not be required, solely due to such designation, to identify Capacity Resources in its FRR Capacity Plan based on the Threshold Quantity. However, such entity may not designate Capacity Resources in excess of the lesser of (a) 25% times the entity's total Unforced Capacity Obligation or (b) 200 MW. An entity can avoid this limitation by identifying Capacity Resources in its FRR Capacity Plan based on the Threshold Quantity. Id. at pages 38-39.

#### **5. FRR Daily Unforced Capacity Obligations and Deficiency Charges**

The Settlement Agreement (at section II.O.5) provides that an FRR Entity's Daily Unforced Capacity Obligation will be determined each month on a daily basis for each Zone, in accordance with rules in Section F of Schedule 8.1 to the RAA. The FRR Entity will be assessed an FRR Capacity Deficiency Charge if it fails to satisfy its Daily Unforced Capacity Obligation in a Zone. The charge will be equal to the deficiency

below the FRR Entity's Daily Unforced Capacity Obligation times twice the applicable Cost of New Entry.

If an FRR Entity acquires load that is not included in the Preliminary Zonal Peak Load Forecast, such acquired load shall be treated in the same manner as provided for municipal annexations, as discussed below. Id.

## **6. Capacity Resource Performance**

The Settlement Agreement (at section II.O.6) provides that capacity resources committed by an FRR Entity in its Capacity Plan shall be subject to many of the same performance and penalty charges as resources committed to serve load through the RPM auctions. However, the deficiency rates for FRR resources will be tied to Net CONE, rather than to the RPM auction clearing price. The Settlement Agreement (at P. 40) also provides that an FRR Entity will have the same opportunities to cure resource deficiencies during the Delivery Year and avoid or reduce associated charges as an RPM resource owner under Sections 7 and 10 of Attachment DD to the PJM Tariff. An FRR Entity also may cure deficiencies and avoid and or reduce associated charges prior to the Delivery Year by procuring replacement capacity outside of any RPM auction and committing such capacity in its FRR Capacity Plan. Id.

## **7. Annexation**

The Settlement Agreement (at section II.O.7) also provides rules that address how to handle load that moves between RPM LSEs and FRR entities (in either direction ) as a result of municipal annexation.

## **8. Savings Clause for State-Wide FRR Program**

The Settlement Agreement (at section II.O.8) also adds the following savings clause to the FRR eligibility provisions of the RAA:

Nothing herein shall obligate or preclude a state, acting either by law or through a regulatory body acting within its authority, from designating the Load Serving Entity or Load Serving Entities that shall be responsible for the capacity obligation for all load in one or more FRR Service Areas within such state according to the terms and conditions of this Settlement Agreement and the PJM Tariff and Reliability Assurance Agreement. Each LSE subject to such state action shall become a Party to the PJM Reliability Assurance Agreement and shall be deemed to have elected the FRR Alternative.

#### **9. FRR Interaction with RTEP**

The Settlement Agreement (at section II.O.9) recognizes several principles concerning interaction of the FRR Alternative with the RTEP process: including that: (i) when the FRR Alternative has been elected as to all load in an LDA, the RTEP market efficiency analysis will not consider payments for each capacity within that LDA; (ii) an FRR Entity may include in its FRR Capacity Plan a transmission upgrade that increases the CETL into the LDA served by the FRR Entity and reduces the LDA's reliance on Capacity Resources located within the LDA; and (iii) any Party's election of the FRR Alternative will not change PJM's planning analysis for reliability-based transmission upgrades or enhancements.

#### **R. Other Issues**

The Settlement Agreement (at section II.P) also addresses certain other issues, as follows:

- The agreement provides that a forum will be established for discussion dedicated to increase coordination among PJM, state siting authorities, regulatory commissions, and PJM stakeholders to identify, evaluate, and hopefully rectify, any barriers to entry of investment in generation, transmission, and demand response.
- The agreement requires that as part of the annual State of the Market Report, the PJM Market Monitoring Unit will analyze and identify barriers, if any, to infrastructure development in each LDA

- The agreement commits the Settling Parties to establish additional process within the PJM region for pursuing and supporting demand response and incorporating energy efficiency applications
- The agreement amends Section 5.14 of Attachment DD to clarify that the Locational Reliability Charge is assessed for each Zone (rather than an LDA), including Zones composed of multiple LDAs
- The agreement expressly acknowledges that it fulfills the obligations of Paragraph 10 of the Settlement Agreement filed and approved in PJM Interconnection, LLC, Docket No. EL03-236
- The agreement commits PJM to file separately to address appropriate charges and credits as necessary to reflect locational price differences in capacity exported from the PJM region
- The agreement expressly states that nothing in the agreement shall preclude the development of a long-term market design that does not rely upon an administrative capacity construct at a later time

The Settlement Agreement (at section II.P) also amends Attachment DD to clarify and correct errors, omissions, and inconsistencies in the August 31<sup>st</sup> Filing, including (but not limited to):

- determinations of the LDAs and increases in import capability associated with a Qualifying Transmission Upgrade (e.g., Section 5.6.1(g) and 5.14(d));
- clarification to Interruptible Load for Reliability payment provisions (e.g., Section 11(b));
- rules to ensure that incremental Capacity Transfer Rights (“CTRs”) do not exceed the total CTRs available to loads in any LDA (e.g., Section 5.15 and 5.16 of Attachment DD); and
- rules governing the allocation of CTR credits in nested LDAs (e.g., section 5.15 of Attachment DD).

## **8. Filing Rights**

The Settlement Agreement provides at Section III that nothing in the agreement shall be construed as affecting in any way PJM’s right unilaterally to make application to the Commission for a change in rates, terms and conditions under section 205 of the

Federal Power Act and the Commission's regulations thereunder; or as restricting any rights of the other parties under the Federal Power Act, including rights under section 206. The Settlement Agreement further provides that, before PJM's exercise of its 205 rights with respect to changing the Reference Resource or the CONE Areas, PJM shall (i) hold at least one stakeholder meeting to discuss the proposed changes, and (ii) provide stakeholders at least 15 calendar days' notice of any such stakeholder meeting.

**T. Approval and Effective Date of Settlement Agreement**

The Settlement Agreement provides at Section IV that the parties shall seek and cooperate in securing Commission approval of the agreement, and that the agreement shall become effective as of the date on which the Commission approves or accepts it in its entirety, including the appended revised tariff sheets, without condition or modification.

The Settlement Agreement further provides that if the Commission does not approve the agreement by December 22, 2006, the agreement shall terminate unless the Settling Parties agree to an extension. If the Commission should condition its approval of the Settlement Agreement or seek to require modification of any of the terms of this Settlement Agreement, the Settling Parties shall confer and either accept the condition or negotiate in good faith, if necessary, to restore the balance of risks and benefits reflected in the agreement as executed. If no agreement can be reached within fifteen (15) days of the date of issuance of the Commission's order, and unless all of the Settling Parties agree to extend the time period for such negotiations, the Settlement Agreement shall terminate.

#### **U. Miscellaneous Provisions**

The Settlement Agreement also includes, at Section V, standard settlement provisions and miscellaneous agreement provisions concerning such matters as the amendments to the PJM Tariff and agreements; use of the just and reasonable standard and not the public interest standard; disclaimer of any admission or precedent; integration of the agreement; confidentiality of settlement discussions; commitment as to further assurances; effect on successors and assigns; authorization to execute; and execution in counterparts.

### **III. REQUIRED INFORMATION**

In accordance with the Chief Administrative Law Judge's October 15, 2003 Notice To The Public, the Settling Parties provide the following information:

#### **A. Issues Underlying the Settlement and Major Implications**

The issues underlying the Settlement Agreement are: (1) the justness and reasonableness of PJM's existing capacity construct; and (2) the content of a just and reasonable replacement for PJM's existing capacity construct. The Settling Parties agree that the Settlement Agreement resolves all issues in this proceeding.

#### **B. Policy Implications**

The issues settled in this proceeding do not require the Commission to examine or change any existing policy or procedure.

#### **C. Other Pending Cases**

The Settlement Agreement does not affect any other pending proceeding, however, as noted above, the Settlement Agreement fulfills the obligations of Paragraph 10 of the Settlement Agreement filed and approved in *PJM Interconnection, L.L.C.*, Docket No. EL03-236.



**D. Issues of First Impression or Reversals on Issues**

The Settlement Agreement does not involve issues of first impression, nor are there any previous reversals on the issues involved.

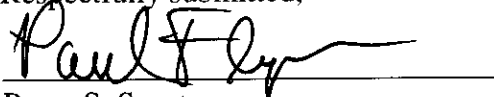
**E. Applicable Standard of Review**

The standard of review of the Settlement Agreement is the just and reasonable standard.

**IV. CONCLUSION**

For the foregoing reasons, the Settlement Agreement is just and reasonable, and the Settling Parties respectfully request that the Commission approve the Settlement Agreement without amendment, modification, or condition.

Respectfully submitted,



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Settling Parties**

**PJM Interconnection, L.L.C.**  
**Docket Nos. EL05-148 and**  
**ER05-1410**  
**September 29, 2006**

**Attachment A**  
**Supplemental Affidavit of**  
**Andrew L. Ott**

**UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION**

**PJM INTERCONNECTION, L.L.C.** ) **Docket Nos. ER05-1410-000  
and EL05-148-000**

**SUPPLEMENTAL AFFIDAVIT OF ANDREW L. OTT  
ON BEHALF OF PJM INTERCONNECTION, L.L.C.  
ON SETTLEMENT AGREEMENT**

I, Andrew L. Ott, being duly sworn, depose and state as follows:

My name is Andrew L. Ott, and I am the Vice President of Market Services for PJM Interconnection, L.L.C. ("PJM"). I previously submitted affidavits in this proceeding in support of PJM's August 31, 2005 initial filing ("August 31 Affidavit") on its proposed Reliability Pricing Model ("RPM"); in support of PJM's May 19, 2006 brief on the RPM issues set for consideration in a paper hearing; and on May 30, 2006, for consideration in the Commission's June 7-8, 2006 Technical Conference in this proceeding. I am submitting this supplemental affidavit in support of the September 29, 2006 "Settlement Agreement and Offer of Settlement" in this case ("Settlement"), to which PJM is a signatory, and to address two of the changes effected by the Settlement to PJM's previously filed position in this case. Specifically, in this affidavit, I will:

- explain that the revised Variable Resource Requirement ("VRR") Curve established by the Settlement meets the reliability objectives I described in my August 31 Affidavit; and
- Explain the impact of the reduction of the forward commitment period from four years to three, and
- describe the benefits of the Peak-Hour Period Availability Charge/Credit that has been added to RPM by the Settlement.

**I. Variable Resource Requirement Curve**

As I explained in my August 31 Affidavit, a VRR curve has significant advantages over the single-value installed capacity approach used in PJM's current capacity market, under which prices are very high if there is a shortage of only a few megawatts below the installed reserve margin, but drop to zero if there is a surplus of only a few megawatts of excess capacity above the IRM level. Moreover, because a more gradually downward-sloping VRR curve recognizes that additional capacity over and above a target reserve margin has value, such a curve should help reduce the capacity price volatility that has been observed in the current PJM daily capacity market.

As I explained, the goal of capacity market reform should be to provide greater assurance of a stable and sustainable supply adequacy. The sloped VRR curve coupled with forward capacity procurement helps satisfy this goal.

I participated actively on behalf of PJM in the settlement negotiations in this case, and I am satisfied that the VRR Curve adopted in the Settlement Agreement (“Settlement Curve”) is likely to meet these objectives.

Although the Settlement Curve establishes a lower value for capacity at most capacity levels, it retains an important element, in that it ties the Net Cost of New Entry to a cleared capacity level equal to the Installed Reserve Margin plus one percent. PJM’s analyses throughout this proceeding have found the shift of one percent to the right above IRM for the Cost of New Entry reference point to be a key parameter in the performance of a VRR Curve, and the Settlement Curve properly retains this important feature.

While the Settlement Curve is likely to result in lower initial capacity costs (as compared to the VRR Curve proposed in PJM’s initial filing in this case), the Settlement Curve performs well on the key measures of long-term reliability and long-term total cost to consumers (which includes both capacity and scarcity costs), as shown by Professor Benjamin F. Hobbs in his supplemental affidavit. The expected reliability level shown in his simulations, i.e., that the Settlement Curve is likely to lead to reserve levels meeting or exceeding the Installed Reserve Margin 95% of the time, provides in my view reasonable assurance that the PJM Region will continue to meet reliability objectives. Moreover, the long-term consumer costs shown in his model, while slightly higher than those for the originally proposed curve, are not excessively increased.

My support for the Settlement Curve, and my willingness to recommend it to the PJM Board, is influenced by the settlement provisions that, I am advised, preserve PJM’s right to file unilaterally at FERC for a change in the VRR Curve or other RPM terms and conditions. If the VRR Curve does not perform as expected, and if reliability concerns arise, I will not hesitate to recommend to the PJM Board that they exercise that authority, and change the VRR Curve or its parameters (such as the Cost of New Entry) if warranted by the circumstances.

## **II. Forward Commitment Period**

As I explained in my August 31 Affidavit, the short-term nature of the current PJM capacity market and current capacity obligation rules are fundamentally inconsistent with the need to preserve system reliability over the long term. By contrast, a forward commitment and forward capacity pricing regime that provides a direct opportunity for planned generation, planned transmission upgrades, and planned demand resources to compete with existing resources will provide more certainty to PJM, to regulators and to market participants concerning long-term reliability of the grid. As I stated previously in this proceeding, the key consideration in the determination of the length of the forward commitment period is to provide the ability for planned resources to directly compete with existing resources in the Base Residual Auction. As explained by Mr. Raymond L.

Pasteris in his August 31, 2005 affidavit, the development time for a typical combustion turbine plant is slightly less than 3 years. Therefore I am satisfied that the reduction in the forward commitment period from four years to three years will not preclude competition from planned resources in the Base Residual Auction.

Another aspect of the forward commitment period is to provide stable forward price signals to encourage long term forward contracting which will provide the market with greater forward certainty concerning both capacity price and capacity adequacy. While a three year forward commitment is somewhat shorter than the originally proposed four year commitment period, the three year forward commitment is a significant improvement over the current PJM capacity construct which requires only a day-to-day capacity commitment. As I stated at the previous FERC technical conference on RPM, there is no practical way to determine the optimal forward commitment period. I stated my belief that a forward commitment period of three to five years should be workable within the RPM construct. I also note that PJM originally chose the four year forward as a balanced approach to satisfying stakeholder interests.<sup>1</sup>

For the reasons stated above, I am satisfied that the reduction from a four year forward commitment to a three year forward commitment will not significantly reduce the performance of RPM in providing stable, long-term price signals and in incenting infrastructure investment.

### **III. Peak-Hour Period Availability Charge/Credit**

The Settlement Agreement properly adds a Peak-Hour Period Availability Charge/Credit to RPM. This provision establishes a means to assess whether generation resources committed as capacity actually are available at expected levels during peak periods, and credits or charges resources to the extent they exceed or fall short of that expected availability. This will provide generation owners a significant added incentive to ensure that their capacity resources are available when they are most needed, and provide loads greater assurance that their payments for capacity will help maintain peak-period reliability. The negotiated provision also includes protections for sellers, primarily by limiting their maximum exposure to these charges.

Such a provision is a natural addition to the RPM construct. RPM is designed to ensure that sufficient generation capacity is available to satisfy reliability requirements at peak system demand conditions. Although RPM's objective is in part to ensure sufficient capacity is available to satisfy peak energy demand, the original RPM design did not have any provisions to directly measure performance in the energy market. The RPM model has been enhanced by the addition of these availability metrics. The addition of the

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<sup>1</sup> At the technical conference and in previous testimony in this proceeding, some stakeholders favored at most a single-year forward commitment while others advocated up to a ten-year forward commitment requirement.

peak hour period availability metric through the Settlement Agreement will allow PJM to directly measure generation availability performance during peak load periods. These peak hour periods are defined based on the winter and summer operating periods when high demand conditions are likely to occur and therefore when generation performance is most critical to maintaining system reliability. The addition of the peak hour period availability metric is beneficial because it will augment the ability of PJM to preserve and maintain the reliability of the PJM Region by providing direct performance incentives to generation in these periods.

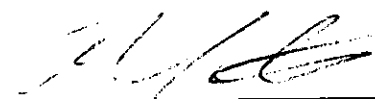
The RPM construct also is designed to ensure that capacity market prices are consistent with system reliability metrics. All network customers must satisfy their capacity obligation either through the RPM or through the Fixed Resource Requirement alternative. Since generation receives capacity payments, or in the case of the FRR is committed to directly satisfy load obligation requirements, there is an expectation that the generator will provide reliability services when required. The peak hour period availability metrics are imposed on generation that receives capacity payments through the RPM market or are specified in a long term fixed resource plan. The metrics provide consumers, who have paid for a high level of reliability through their capacity market payments, with reasonable assurance that generation will perform at adequate levels during peak period hours.

This concludes my affidavit.

SS:            )    Commonwealth of Pennsylvania  
                   )    )  
                   )    County of Montgomery

**AFFIDAVIT OF ANDREW L. OTT**

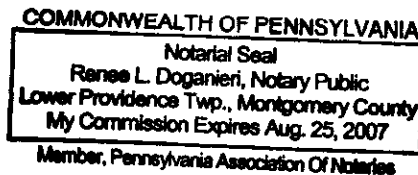
Andrew L. Ott, being first duly sworn, deposes and says that he has read the foregoing "Supplemental Affidavit of Andrew L. Ott," that he is familiar with the contents thereof, and that the matters and things set forth therein are true and correct to the best of his knowledge, information and belief.

/s/   
 Andrew L. Ott

Subscribed and sworn to before me this 29<sup>th</sup> day of September, 2006.

/s/   
 Notary Public

My Commission expires: August 25, 2007



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