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September 29, 2006

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

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OFFICE OF THE  
SECRETARY  
2006 SEP 29 P 3:45  
FEDERAL ENERGY  
REGULATORY COMMISSION

**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.

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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

<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.

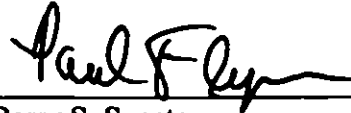
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this filing, PJM will post this filing today to the FERC filings section of its internet site, <http://www.pjm.com/documents/ferc.html>, and send an e-mail to all PJM members and all state utility regulatory commissions in the PJM Region<sup>3</sup> 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

<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.

- viii) The Net Energy and Ancillary Services Revenue Offset values for the PJM Region for use in the Variable Resource Requirement Curves for the PJM Region and each Locational Deliverability Area for which a separate Variable Resource Requirement Curve has been established for such Base Residual Auction; and
- ix) The results of the Preliminary Market Structure Screen in accordance with section 6.2(a).

b) The information listed in (a), with the exception of the Preliminary PJM Region Peak Load Forecast and the Variable Resource Requirement Curves, will continue to be posted and applicable for the First, Second, and Third Incremental Auctions for such Delivery Year. The Variable Resource Requirement Curves shall remain posted during the auction process for a Delivery Year, but shall be used only in the Base Residual Auction for such Delivery Year.

c) In accordance with the schedule provided in the PJM Manuals, PJM will post the Final PJM Region Peak Load Forecast and the allocation to each zone of the incremental obligation resulting from such final forecast, prior to conducting the Second Incremental Auction for such Delivery Year;

d) In accordance with the schedule provided in the PJM Manuals, PJM will advise owners of Generation Capacity Resources of the updated EPORd values for such Generation Capacity Resources prior to the conduct of the Third Incremental Auction for such Delivery Year.

#### **5.12 Conduct of RPM Auctions**

The Office of the Interconnection shall employ an optimization algorithm for each Base Residual Auction and each Incremental Auction to evaluate the Sell Offers and other inputs to such auction to determine the Sell Offers that clear such auction.

##### **a) Base Residual Auction**

For each Base Residual Auction, the optimization algorithm shall consider:

- all Sell Offers submitted in such auction;
- the Variable Resource Requirement Curves for the PJM Region and each LDA;
- any constraints resulting from the Locational Deliverability Requirement;
- the PJM Region Reliability Requirement, minus the Forecast RTO ILR Obligation.



The optimization algorithm shall be applied to calculate the overall clearing result to minimize the cost of satisfying the reliability requirements across the PJM Region, regardless of whether the quantity clearing the Base Residual Auction is above or below the applicable target quantity, while respecting all applicable requirements and constraints. Where the supply curve formed by the Sell Offers submitted in an auction falls entirely below the Variable Resource Requirement Curve, the auction shall clear at the price-capacity point on the Variable Resource Requirement Curve corresponding to the total Unforced Capacity provided by all such Sell Offers. Where the supply curve consists only of Sell Offers located entirely below the Variable Resource Requirement Curve and Sell Offers located entirely above the Variable Resource Requirement Curve, the auction shall clear at the price-capacity point on the Variable Resource Requirement Curve corresponding to the total Unforced Capacity provided by all Sell Offers located entirely below the Variable Resource Requirement Curve. In determining the lowest-cost overall clearing result that satisfies all applicable constraints and requirements, the optimization may select from among multiple possible alternative clearing results that satisfy such requirements, including, for example (without limitation by such example), accepting a lower-priced Sell Offer that intersects the Variable Resource Requirement Curve and that specifies a minimum capacity block, accepting a higher-priced Sell Offer that intersects the Variable Resource Requirement Curve and that contains no minimum-block limitations, or rejecting both of the above alternatives and clearing the auction at the higher-priced point on the Variable Resource Requirement Curve that corresponds to the Unforced Capacity provided by all Sell Offers located entirely below the Variable Resource Requirement Curve.

The Sell Offer price of a Qualifying Transmission Upgrade shall be treated as a capacity price differential between the LDAs specified in such Sell Offer between which CETL is increased, and the Import Capability provided by such upgrade shall clear to the extent the difference in clearing prices between such LDAs is greater than the price specified in such Sell Offer. The Capacity Resource clearing results and Capacity Resource Clearing Prices so determined shall be applicable for such Delivery Year.

b) First Incremental Auction

For each First Incremental Auction, the optimization algorithm shall consider:

- the same locational constraints that were modeled in the Base Residual Auction ; and
- the Sell Offers and Buy Bids submitted in such auction.

The optimization algorithm shall calculate the overall clearing result to minimize the cost of committing replacement Capacity Resources in response to the Buy Bids submitted, while satisfying or honoring such reliability requirements and constraints.

c) Second Incremental Auction

For each Second Incremental Auction, the optimization algorithm shall consider:

- The PJM Region Reliability Requirement, less the Forecast RTO ILR Obligation;

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- For each LDA, such LDA's share of the Final RTO Peak Load Forecast less the Forecast RTO ILR Obligation;
- The Sell Offers submitted in such auction;
- The Unforced Capacity previously committed for such Delivery Year; and
- the same Locational Deliverability Requirements that were modeled in the Base Residual Auction.

The optimization algorithm shall calculate the overall clearing result to minimize the cost to satisfy the Unforced Capacity Obligation of the PJM Region to account for the Final PJM Peak Load Forecast, while satisfying or honoring such reliability requirements and constraints, in the same manner as set forth in subsection (a) above.

**d) Third Incremental Auction**

For each Third Incremental Auction, the optimization algorithm shall consider:

- the same Locational constraints that were modeled in the Base Residual Auction ; and
- the Sell Offers and Buy Bids submitted in such auction.

The optimization algorithm shall calculate the overall clearing result to minimize the cost of committing replacement Capacity Resources in response to the Buy Bids submitted, while satisfying or honoring such reliability requirements and constraints.

**(e) Equal-priced Sell Offers**

If two or more Sell Offers submitted in any auction satisfying all applicable constraints include the same offer price, and some, but not all, of the Unforced Capacity of such Sell Offers is required to clear the auction, then the auction shall be cleared in a manner that minimizes total costs, including total make-whole payments if any such offer includes a minimum block and, to the extent consistent with the foregoing, in accordance with the following additional principles:

- 1) as necessary, the optimization shall clear such offers that have a flexible megawatt quantity, and the flexible portions of such offers that include a minimum block that already has cleared, where some but not all of such equal-priced flexible quantities are required to clear the auction, pro rata based on their flexible megawatt quantities; and
- 2) when equal-priced minimum-block offers would result in equal overall costs, including make-whole payments, and only one such offer is required to clear the auction, then the offer that was submitted earliest to the Office of the Interconnection, based on its assigned timestamp, will clear.

### **5.13 Certification of ILR**

No later than three months prior to the start of the Delivery Year, ILR Providers may submit resources for review and certification by the Office of the Interconnection, in accordance with the Reliability Assurance Agreement and the PJM Manuals, as ILR Resources for the Delivery Year. In accordance with Schedule 6 of the Reliability Assurance Agreement, ILR Providers must provide the Nominated ILR Value for the ILR resources certified.

### **5.14 Clearing Prices and Charges**

#### **a) Capacity Resource Clearing Prices**

For each Base Residual Auction and Incremental Auction, the Office of the Interconnection shall calculate a clearing price to be paid for each megawatt-day of Unforced Capacity that clears in such auction. The Capacity Resource Clearing Price for each LDA will be the sum of the following: (1) the marginal value of system capacity for the PJM Region, without considering locational constraints, and (2) the Locational Price Adder, if any in such LDA, all as determined by the Office of the Interconnection based on the optimization algorithm. If a Capacity Resource is located in more than one Locational Deliverability Area, it shall be paid the highest Locational Price Adder in any applicable LDA in which the Sell Offer for such Capacity Resource cleared.

#### **b) Resource Make-Whole Payments**

If a Sell Offer specifies a minimum block, and only a portion of such block is needed to clear the market in a Base Residual or Incremental Auction, the MW portion of such Sell Offer needed to clear the market shall clear, and such Sell Offer shall set the marginal value of system capacity. In addition, the Capacity Market Seller shall receive a Resource Make-Whole Payment equal to the Capacity Resource Clearing Price in such auction times the difference between the Sell Offer's minimum block MW quantity and the Sell Offer's cleared MW quantity. The cost for any such Resource Make-Whole Payments required in a Base Residual Auction or Second Incremental Auction shall be collected pro rata from all LSEs in the LDA in which such payments were made, based on their Daily Unforced Capacity Obligations. The cost for any such Resource Make-Whole Payments required in a First or Third Incremental Auction shall be collected from all Capacity Market Buyers in the LDA in which such payments were made, on a pro-rata basis based on the MWs purchased in such auction.

**c) New Entry Price Adjustment**

A Capacity Market Seller that submits a Sell Offer based on a Planned Generation Capacity Resource that clears in the BRA for a Delivery Year may, at its election, submit Sell Offers with a New Entry Price Adjustment in the BRAs for the two immediately succeeding Delivery Years if:

- a. Such Capacity Market Seller provides notice of such election at the time it submits its Sell Offer for such resource in the BRA for the first Delivery Year for which such resource is eligible to be considered a Planned Generation Capacity Resource;
- b. Acceptance of such Sell Offer in such BRA increases the total Unforced Capacity in the LDA in which such Resource will be located from a megawatt quantity below the LDA Reliability Requirement to a megawatt quantity corresponding to a point on the VRR Curve where price is no greater than 0.40 times the applicable Net CONE divided by (one minus the pool-wide average EFORD); and
- c. Such Capacity Market Seller submits Sell Offers in the BRA for the two immediately succeeding Delivery Years for the entire Unforced Capacity of such Generation Capacity Resource equal to the lesser of: 1) the price in such seller's Sell Offer for the BRA in which such resource qualified as a Planned Generation Capacity Resource; or 2) 0.90 times the then-current Net CONE, on an Unforced Capacity basis, for such LDA.

If the Sell Offer is submitted consistent with the foregoing conditions, then:

- i. in the first Delivery Year, the Resource sets the Capacity Resource Clearing Price for the LDA and all resources in the LDA receive the Capacity Resource Clearing Price.
- ii. in the subsequent two BRAs, if the Resource clears, it shall receive the higher of the foregoing Sell Offer price and the Capacity Resource Clearing Price for such LDA. If the Sell Offer price exceeds the Capacity Resource Clearing Price, the difference will be paid as a Resource Make-Whole Payment in accordance with Section 5.14(b). Other capacity resources that clear the BRA in such LDA receive the Capacity Resource Clearing Price as determined in Section 5.14(a).

iii. The failure to submit a Sell Offer consistent with Section 5.14(c)(i)-(iii) in the BRA for Delivery Year 3 shall not retroactively revoke the New Entry Price Adjustment for Delivery Year 2.

For each Delivery Year that the foregoing conditions are satisfied, the Office of the Interconnection shall maintain and employ in the auction clearing for such LDA a separate VRR Curve, notwithstanding the outcome of the test referenced in Section 5.10(a)(ii) of this Attachment.

d). Qualifying Transmission Upgrade Payments

A Capacity Market Seller that submitted a Sell Offer based on a Qualifying Transmission Upgrade that clears in the Base Residual Auction shall receive a payment equal to the Capacity Resource Clearing Price, including any Locational Price Adder, of the LDA into which the Qualifying Transmission Upgrade is to increase Capacity Emergency Transfer Limit, less the Capacity Resource Clearing Price, including any Locational Price Adder, of the LDA from which the upgrade was to provide such increased CETL, multiplied by the megawatt quantity of increased CETL cleared from such Sell Offer. Such payments shall be reflected in the Locational Price Adder determined as part of the Final Zonal Capacity Price for the Zone associated with such LDAs.

e). Locational Reliability Charge

In accordance with the Reliability Assurance Agreement, each LSE shall incur a Locational Reliability Charge (subject to certain offsets as described in sections 5.13 and 5.15) equal to such LSE's Daily Unforced Capacity Obligation in a Zone during such Delivery Year multiplied by the applicable Final Zonal Capacity Price in such Zone.

f) The Office of the Interconnection shall determine Zonal Capacity Prices in accordance with the following, based on the optimization algorithm:

i) The Office of the Interconnection shall calculate and post the Preliminary Zonal Capacity Prices for each Delivery Year following the Base Residual Auction for such Delivery Year. The Preliminary Zonal Capacity Price for each Zone shall be the sum of: 1) the marginal value of system capacity for the PJM Region, without considering locational constraints; 2) the Locational Price Adder, if any, for the LDA in which such Zone is located; provided however, that if the Zone contains multiple LDAs with different Capacity Resource Clearing Prices, the Zonal Capacity Price shall be a weighted average of the Capacity Resource Clearing Prices for such LDAs, weighted by the Unforced Capacity of Capacity Resources cleared in each such LDA; and 3)

an adjustment, if required, to account for Resource Make-Whole Payments, all as determined in accordance with the optimization algorithm.

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ii) The Office of the Interconnection shall calculate and post the Adjusted Zonal Capacity Price following each Second Incremental Auction. The Adjusted Zonal Capacity Price for each Zone shall equal (1) the Preliminary Zonal Capacity Price, plus (2) the Zonal Capacity Price for such Zone in the Second Incremental Auction minus the Preliminary Zonal Capacity Price for such Zone, multiplied by the ratio of (y) the total megawatts of Unforced Capacity cleared in the Second Incremental Auction divided by (z) the sum of the megawatts of Unforced Capacity cleared in the Base Residual Auction and the megawatts of Unforced Capacity cleared in the Second Incremental Auction, plus the Forecast RTO ILR Obligation.

iii) The Office of the Interconnection shall calculate and post the Final Zonal Capacity Price after all ILR resources are certified for the Delivery Year. The Final Zonal Capacity Price for each Zone shall equal the Adjusted Zonal Capacity Price, as further adjusted to reflect the certified ILR compared to the ILR Forecast previously used for such Delivery Year, and any decreases in the Nominated Demand Resource Value of any existing Demand Resource cleared in the Base Residual Auction and Second Incremental Auction.

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Vice President, Federal Government Policy**  
**Issued On: September 29, 2006**

**Effective: June 1, 2007**

g) Resource Substitution Charge

Each Capacity Market Buyer in the First Incremental Auction or Third Incremental Auction shall pay a Resource Substitution Charge equal to the Capacity Resource Clearing Price resulting from such auction multiplied by the megawatt quantity of Unforced Capacity purchased by such Market Buyer in such auction.

h) Minimum Offer Price Rule for Certain Planned Generation Capacity Resources

(1) Prior to each Base Residual Auction, the Market Monitoring Unit shall develop locational asset-class estimates of competitive, cost-based, real levelized (year one) Cost of New Entry, net of energy and ancillary service revenues ("Net Asset Class Cost of New Entry"). Other than the levelization approach, determination of the Cost of New Entry component of the Net Asset Class Cost of New Entry shall be consistent with the methodology used to determine the Cost of New Entry set forth in Section 5.10(a)(iv)(A) of this Attachment. Notwithstanding the foregoing, the Net Asset Class Cost of New Entry shall be zero for: (i) base load resources, such as nuclear, coal and Integrated Gasification Combined Cycle, that require a period for development greater than three years; (ii) any facility associated with the production of hydroelectric power; (iii) any upgrade or addition to an existing Generation Capacity Resource; or (iv) any Planned Generation Capacity Resource 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.

(2) The Market Monitoring Unit shall evaluate any Sell Offer that is based on a Planned Generation Capacity Resource submitted in a Base Residual Auction for the first Delivery Year in which such resource qualifies as such a resource, in any LDA for which a separate VRR Curve has been established, and shall determine whether such Sell Offer meets each of the following criteria:

- i. Sell Offer affects the Clearing Price;
- ii. Sell Offer is less than 80 percent of the applicable Net Asset Class Cost of New Entry or, if there is no applicable Net Asset Class Cost of New Entry, less than 70 percent of the Net Asset Class Cost of New Entry for the Reference Resource effective in such LDA; and

iii. The Capacity Market Seller and any Affiliates has or have a "net short position" in such Base Residual Auction for such LDA that equals or exceeds (a) ten percent of the LDA Reliability Requirement, if less than 10,000 megawatts, or (b) five percent of the total LDA Reliability Requirement, if equal to or greater than 10,000 megawatts. A "net short position" shall be calculated as the actual retail load obligation minus the portfolio of supply. An "actual retail load obligation" shall mean the LSE's combined load served in the LDA at or around the time of the Base Residual Auction adjusted to account for load growth up to the Delivery Year, using the Forecast Pool Requirement. A "portfolio of supply" shall mean the Generation Capacity Resources (on an unforced capacity basis) owned by the Capacity Market Seller and any Affiliates at the time of the Base Residual Auction plus or minus any generation that is, at the time of the BRA, under contract for the Delivery Year.

(3) If the Market Monitoring Unit determines that all of the criteria of Section 5.14(h)(2) are met, it shall notify the Capacity Market Seller of this determination. Within five business days, or such other period to which the Market Monitoring Unit consents, such Capacity Market Seller may supply the Market Monitoring Unit with specific information about the costs and operational parameters relating to its Sell Offer. If the Capacity Market Seller fails to supply any such information within the specified time, or if the Market Monitoring Unit determines that the information provided, combined with revenues that would be earned in PJM-administered markets as determined by PJM, does not support the offer, the applicable cost-based net Cost of New Entry determined in Section 5.14(h)(1) shall be used to establish an alternative Sell Offer. The alternative Sell Offer employed in place of the actual Sell Offer shall be equal to 90 percent of the applicable Net Asset Class Cost of New Entry or, if there is no applicable Net Asset Class Cost of New Entry equal to 80 percent of the Net Asset Class Cost of New Entry for the Reference Resource. Upon timely receipt of such information, the Market Monitoring Unit shall determine whether such Sell Offer is consistent with the real levelized (year one) competitive, cost-based, fixed, net cost of new entry were the resource to rely solely on revenues from PJM-administered markets (i.e., were all output from the unit sold in PJM-administered spot markets). The Market Monitoring Unit shall adjust the alternative Sell Offer if appropriate on the basis of the relevant and reliable supporting information available and the application of an objective analysis.



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(4) The Market Monitoring Unit shall request that the Office of the Interconnection perform a sensitivity analysis on any Base Residual Auction that included Sell Offers meeting the criteria of Section 5.14(h)(2), for which an acceptable alternative Sell Offer was not provided consistent with Section 5.14(h)(3). Such analysis shall re-calculate the clearing price for the Base Residual Auction employing in place of each actual Sell Offer meeting the criteria a substitute Sell Offer equal to 90 percent of the applicable estimated cost determined in accordance with Section 5.14(h)(1) above, or, if there is no applicable estimated cost, equal to 80 percent of the then-applicable Net CONE. If the resulting difference in price between the new clearing price and the initial clearing price differs by an amount greater than the greater of 20 percent or 25 dollars per megawatt-day for a total LDA Reliability Requirement greater than 15,000 megawatts; or the greater of 25 percent or 25 dollars per megawatt-day for a total LDA Reliability Requirement greater than 5,000 and less than 15,000 megawatts; or the greater of 30 percent or 25 dollars per megawatt-day for a total LDA Reliability Requirement of less than 5,000 megawatts; then the Market Monitoring Unit shall discard the results of the Base Residual Auction and determine a replacement clearing price and the identity of the accepted Capacity Resources using the procedure set forth in section 5.14(h)(5) below.

(5) Including all of the Sell Offers in a single Base Residual Auction that meet the criteria of 5.14(h)(4) above, PJM shall first calculate the replacement clearing price and the total quantity of Capacity Resources needed for the LDA. PJM shall then accept Sell Offers to provide Capacity Resources in accordance with the following priority and criteria for allocation: (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, subject to the optimization principles set forth in Section 5.14.

(6) Notwithstanding the foregoing, this provision shall terminate when there exists a positive net demand for new resources, as defined in Section 5.10(a)(iv)(B) of this Attachment, calculated over a period of consecutive Delivery Years beginning with the first Delivery Year for which this Attachment is effective and concluding with the last Delivery Year preceding such calculation, in an area comprised of the Unconstrained LDA Group in existence during such first Delivery Year. Notwithstanding the foregoing, the Market Monitoring Unit shall reinstate the provisions of this section, solely under conditions in which a

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constrained LDA 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.

### **5.15 Capacity Transfer Rights**

(a) To recognize the value of Import Capability and provide a partial offset to potential Locational Price Adders that may be determined for an LDA (as to any Zone that encompasses two or more LDAs, the term "LDA" as used herein shall refer to such Zone, rather than to the LDAs it encompasses), the Office of the Interconnection shall allocate Capacity Transfer Rights to each LSE serving load in such LDA pro rata based on such LSE's Daily Unforced Capacity Obligation in such LDA. The total megawatts of Capacity Transfer Rights available for allocation shall equal the megawatts of Unforced Capacity imported into such LDA as determined in the Base Residual Auction ("Capacity Imported"), less any Incremental Capacity Transfer Rights into such LDA allocated pursuant to section 5.16 (but not less than zero), and shall be subject to change in subsequent Delivery Years as a result of changes in the quantity of such Capacity Imported into such LDA. Each change in an LSE's Daily Unforced Capacity Obligation during a Delivery Year shall result in a corresponding change in the Capacity Transfer Rights allocated to such LSE.

(b) For purposes of any Base Residual Auction in an LDA that results in a positive Locational Price Adder, the holder of the Capacity Transfer Rights shall receive a payment during the Delivery Year equal to (i) the Locational Price Adder determined as a result of such auction for such LDA minus the Locational Price Adder for the LDA from which Unforced Capacity is imported to determine the Capacity Transfer Right, multiplied by (ii) the megawatt quantity of the Capacity Transfer Right allocated to such LSE. (c) For purposes of any Second Incremental Auction in such LDA that results in a positive Locational Price Adder, the holder of a Capacity Transfer Right shall receive a payment during the Delivery Year equal to (i) the difference between the Locational Price Adder determined as a result of such auction for such LDA and the Locational Price Adder for the LDA from which Unforced Capacity is imported to determine the Capacity Transfer Right, multiplied by (ii) the megawatt quantity of the Capacity Transfer Right allocated to such LSE, multiplied by (iii) the ratio of the increase in the quantity of Capacity Imported into such LDA from the Base Residual Auction to the Second Incremental Auction, divided by the quantity of Unforced Capacity imported into such LDA in the Base Residual Auction.

(d) Where an LDA is entirely contained within another LDA: (i) a portion of the Capacity Imported into the larger LDA will be allocated to the smaller LDA, based on the smaller LDA's proportion of the larger zone's unforced capacity obligation; (ii) the CTRs available for allocation to LSEs in the smaller LDA will include the product of the assigned portion of the larger LDA's Capacity Imported times the difference between the Locational Price Adder in the smaller LDA and the Locational Price Adder in the area from which capacity was imported into the larger LDA; and (iii) the total amount of Imported Capacity into the smaller LDA remaining for determination of further credits will be reduced by the allocation of credits attributable to Capacity Imported into the larger LDA.

(e) Capacity Transfer Rights shall be transferable. A purchaser of Capacity Transfer Rights from the original party allocated such rights shall receive any payments due under this section or section 5.16, provided the seller and purchaser of such rights timely notify the Office of the Interconnection of such purchase, in accordance with procedures specified in the PJM manuals.

### **5.16 Incremental Capacity Transfer Rights**

(a) The Office of the Interconnection shall allocate Incremental Capacity Transfer Rights to a Generation Interconnection Customer or Transmission Interconnection Customer obligated to fund a transmission facility or upgrade through a rate or charge specific to such facility or upgrade, to the extent such upgrade or facility increases the Import Capability into a Locational Deliverability Area, with respect to any such transmission facility or upgrade interconnected to the Transmission System pursuant to Part IV of this Tariff, including transmission facilities or upgrades interconnected to the Transmission System pursuant to Part IV prior to the effective date of this Attachment. Incremental Capacity Transfer Rights shall be available for a facility or upgrade for a Delivery Year only if the Office of the Interconnection certifies the quantity of Import Capability provided by such facility or upgrade at least 45 days prior to the Base Residual Auction for such Delivery Year. The megawatt quantity of Incremental Capacity Transfer Rights allocated to such an Interconnection Customer shall equal the megawatt quantity of the increase in Import Capability across a locational constraint resulting from such upgrade or facility, provided that the total Incremental Capacity Transfer Rights awarded as to an LDA may not exceed the total Capacity Transfer Rights determined as to such LDA. A Capacity Market Seller that offers and clears a Qualifying Transmission Upgrade in the Base Residual Auction for a Delivery Year shall not receive Incremental Capacity Transfer Rights with respect to such upgrade for such Delivery Year.

(b) For any Base Residual or Incremental Auction that results in a positive Locational Price Adder for such LDA, the holder of an Incremental Capacity Transfer Right shall receive a payment equal to such Locational Price Adder multiplied by the megawatt quantity of the Incremental Capacity Transfer Right allocated to such Interconnection Customer.

## **6. MARKET POWER MITIGATION**

### **6.1 Applicability**

The provisions of the Market Monitoring Plan in Attachment M to this Tariff apply to the Reliability Pricing Model Auctions. In addition, PJM shall apply market power mitigation measures, as set forth in this section 6, to any Base Residual Auction or Incremental Auction for any Locational Deliverability Area having a Locational Price Adder greater than zero as determined by the optimization algorithm pursuant to section 5.12, but only in the event the Sell Offers that were accepted by such algorithm to resolve any locational constraint giving rise to the Locational Price Adder (and that would not have been accepted absent such constraint), and all Sell Offers that would resolve such constraint remaining available but unaccepted by such algorithm, collectively fail the Market Structure Screen set forth in this section 6. PJM shall also apply market power mitigation measures, as set forth in this section 6, to any Base Residual Auction or Incremental Auction for the entire PJM Region. This section also specifies an offer requirement applicable to all Capacity Resources, regardless of Locational Deliverability Area.

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## 6.2 Process

(a) By no later than three months (or such other time period as established for purposes of the Transition Period) prior to the conduct of the Base Residual Auction and each Incremental Auction for such Delivery Year, the Office of the Interconnection shall post the results of the Market Monitoring Unit's application of the Preliminary Market Structure Screen set forth below to each such LDA and to the entire PJM Region.

(b) In accordance with the schedule specified in the PJM Manuals, following PJM's conduct of a Base Residual Auction or Incremental Auction pursuant to section 5.12, but prior to PJM's final determination of clearing prices and charges pursuant to section 5.14, PJM shall: (i) apply the Market Structure Test to any LDA having a Locational Price Adder greater than zero and to the entire PJM region; (ii) apply Offer Caps, if required under this section 6; and (iii) recompute the optimization algorithm to clear the auction with the Offer Caps in place.

## 6.3 Market Structure Tests

### (a) Preliminary Market Structure Screen.

(i) In sufficient time to permit the posting required by section 6.2(a), the Market Monitoring Unit shall apply the Preliminary Market Structure Screen to identify the LDAs in which Capacity Market Sellers must provide the data specified in section 6.7(b) for any auction conducted with respect to such Delivery Year and whether Capacity Market Sellers must provide this data for the entire PJM Region. For each LDA and for the PJM Region, the Preliminary Market Structure Screen will be based on: (1) the Unforced Capacity available for such Delivery Year from Generation Capacity Resources located in such area; and (2) the Locational Deliverability Area Reliability Requirement and the PJM Reliability Requirement. For purposes of this screen, any LDA for which a separate Variable Resource Requirement Curve has not been established under section 5.10 of this Attachment shall be combined with all other such LDAs that form an electrically contiguous area ("Unconstrained LDA Group"), and the screen shall be applied to such area in the aggregate, rather than to each such LDA individually. Any such Unconstrained LDA Groups shall be identified in the posting required by section 6.2(a).

(ii) An LDA, Unconstrained LDA Group, or the entire PJM Region shall fail the Preliminary Market Structure Screen, and Capacity Market Sellers owning or controlling any Generation Capacity Resource located in such LDA, Unconstrained LDA Group, or region shall be required to provide the information specified in section 6.7, if any one of the following three conditions is met: (1) the market share of any Capacity Market Seller exceeds twenty percent; (2) the HHI for all such sellers is 1800 or higher; or (3) there are not more than three jointly pivotal suppliers.

(b) **Market Structure Test.**

(i) In accordance with the schedule set under section 6.2, the Market Monitoring Unit shall apply the Market Structure Test to an LDA or the PJM Region if the conditions specified in section 6.5 are met as to such LDA.

(ii) An LDA, Unconstrained LDA Group, or the PJM Region shall fail the Market Structure Test, and mitigation shall be applied to all jointly pivotal suppliers (including all Affiliates of such suppliers, and all third-party supply in the relevant LDA or Unconstrained LDA Group controlled by such suppliers by contract), if, as to the Sell Offers described in section 6.1, there are not more than three jointly pivotal suppliers.

(c) **Determination of Incremental Supply**

In applying the market structure screen and market structure test, the Market Monitoring Unit shall consider all incremental supply up to and including all such supply available at an effective cost less than or equal to 150% of the cost-based clearing price calculated using the incremental megawatts of supply available to solve the constraint and the need for megawatts to solve the constraint giving rise to a Locational Price Adder.

**6.4 Market Seller Offer Caps**

The Market Seller Offer Cap, stated in dollars per MW-year, applicable to price-quantity offers within the Base Offer Segment for an existing Generation Capacity Resource shall be the Avoidable Cost Rate for such resource, less the Projected PJM Market Revenues for such resource. During the first three Delivery Years of the Transition Period, the Market Seller Offer Cap shall be increased for Sell Offers submitted by eligible Capacity Market Sellers in any Unconstrained LDA Group by the Transition Adder set forth in section 17.5 of this Attachment. The Market Seller Offer Cap applicable to price-quantity offers within the EFORD Offer Segment for an existing Generation Capacity Resource shall be the net Cost of New Entry for the Delivery Year. Notwithstanding the foregoing, the Market Seller Offer Cap for an existing Generation Capacity Resource shall be the Opportunity Cost for such resource, if applicable in accordance with section 6.7. Nothing herein shall preclude any Capacity Market Seller and the Market Monitoring Unit from agreeing to, nor require either such entity to agree to, an alternative market seller offer cap determined on a mutually agreeable basis. Any such alternative offer cap shall be filed with the FERC for its approval.

**6.5 Mitigation**

The Office of the Interconnection shall apply market power mitigation measures to any Base Residual Auction or Incremental Auction for any LDA, Unconstrained LDA Group, or the PJM Region that, without mitigation, would have a Locational Price Adder greater than zero, but only in the event the cost-based Sell Offers that would be accepted by the optimization algorithm

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to resolve any locational constraint giving rise to the Locational Price Adder (and that would not have been accepted absent such constraint), and all cost-based Sell Offers made at a price less than or equal to 150 percent of the clearing price determined by the optimization algorithm that would help resolve such constraint remaining available but unaccepted by such algorithm, collectively fail the Market Structure Test.

(a) Mitigation for Generation Capacity Resources.

i) Existing Generation Resource.

Mitigation will be applied on a unit-specific basis and only if the Sell Offer of Unforced Capacity from a Generation Capacity Resource: (1) is greater than the Market Seller Offer Cap applicable to such resource; and (2) would, absent mitigation, increase the Capacity Resource Clearing Price in the relevant auction. If such conditions are met, such Sell Offer shall be set equal to the Market Seller Offer Cap.

ii) Planned Generation Capacity Resources

(A) Sell Offers based on Planned Generation Capacity Resources shall be presumed to be competitive and shall not be subject to market power mitigation in the Base Residual Auction or Second Incremental Auction for the first Delivery Year for which such resource qualifies as a Planned Generation Capacity Resource, but may be rejected if found by the PJM Market Monitoring Unit not to be competitive in accordance with the criteria and procedures set forth below. Such resources shall be treated as Existing Generation Capacity Resources in the auctions for any subsequent Delivery Year; provided, however, that such resources may receive certain price assurances for the two Delivery Years immediately following the first Delivery Year of service under certain conditions as set forth in section 5.14 of this Attachment.

(B) Sell Offers based on Planned Generation Capacity Resources submitted for the first year in which such resources qualify as Planned Generation Capacity Resources shall be deemed competitive and not be subject to mitigation if: (1) collectively all such Sell Offers provide Unforced Capacity in an amount equal to or greater than two times the incremental quantity of new entry required to meet the LDA Reliability Requirement; and (2) at least two unaffiliated suppliers have submitted Sell Offers for Planned Generation Capacity Resources in such LDA. Notwithstanding the foregoing, any Capacity Market Seller, together with Affiliates, whose Sell Offers based on Planned Generation Capacity Resources in that LDA are pivotal, shall be subject to mitigation.

(C) Where the two conditions stated in Paragraph (B) are not met, or the Sell Offer is pivotal, the Market Monitoring Unit shall (1) compare each such Sell Offer to Sell Offers submitted in other LDAs (with due recognition for locational differences) and to the Cost of New Entry for the LDA in which the offer otherwise would clear and other LDAs (with due recognition for locational differences); (2) evaluate potential barriers to new entry on the basis of interviews with potential suppliers and other market participants; and (3) determine, based on that analysis, whether to reject such Sell Offer as non-competitive. Following the conduct of the applicable auction and before the final determination of clearing prices, in accordance with Section 6.2(b) above, the Market Monitoring Unit shall notify a Capacity Market Seller whose Sell Offer is deemed non-competitive and allows such Capacity Market Seller an opportunity to submit a revised Sell Offer. The Office of the Interconnection then shall clear the auction with such revised Sell Offer in place if the Market Monitoring Unit determines that such revised offer is competitive in accordance with the above criteria. If the revised Sell Offer is not deemed competitive, it will be rejected.

(b) Mitigation for Demand Resources

The Market Seller Offer Cap shall not be applied to Sell Offers of Planned Demand Resources. When the Market Structure Test is failed, any Sell Offers of existing Demand Resources shall not be considered in determining the Capacity Resource Clearing Price in any auction for the market for which such test was failed.

**6.6 Offer Requirement for Capacity Resources**

(a) To avoid application of subsection (d), all Unforced Capacity of all existing Generation Capacity Resources located in the PJM Region shall be offered (which may include submission as Self-Supply) in the Base Residual Auction for each Delivery Year, where Unforced Capacity is determined using an EFORD less than or equal to the EFORD for the 12 months ending on the September 30 that last precedes the submission of such offers.

(b) Notwithstanding the foregoing, to address the risk of a change in EFORD between the auction and the Delivery Year, a Capacity Market Seller may include an EFORD Offer Segment in its Sell Offer(s) pursuant to section 6.7.

(c) Existing generation resources in the PJM Region capable of qualifying as a Generation Capacity Resource may not avoid the rule in subsection (a) by failing to qualify as a Generation Capacity Resource, or by attempting to remove a unit previously qualified as a Generation Capacity Resource from classification as a Capacity Resource, excepting only generation resources that, as shown by appropriate documentation: (i) are reasonably expected to be physically unable to participate in the relevant Delivery Year; (ii) have a financially and physically firm commitment to an external sale of its capacity, or (iii) were interconnected to the Transmission System as Energy Resources and not subsequently converted to a Capacity Resource.

(d) Any existing generation resource located in the PJM Region that is not offered into the Base Residual Auction for a Delivery Year, and that does not meet any of the

exceptions stated in the prior subsection: (i) may not participate in any subsequent auctions conducted for such Delivery Year; (ii) shall not receive any payments under section 5.14 for such Delivery Year; and (iii) shall not be permitted to satisfy any LSE's Unforced Capacity Obligation, or any entity's obligation to obtain the commitment of Capacity Resources, for such Delivery Year.

(e) To avoid application of subsection (f), any existing Generation Capacity Resource located in the PJM Region that is offered into the Base Residual Auction for a Delivery Year, but that does not clear in such auction, shall be offered in the First, Second, and Third Incremental Auctions for such Delivery Year, unless such Generation Capacity Resource, as shown by appropriate documentation, (i) is reasonably expected to be physically unable to participate in the relevant auction; (ii) has a financially and physically firm commitment to an external sale of its capacity; or (iii) was interconnected to the Transmission System as an Energy Resource and not subsequently converted to a Capacity Resource.

(f) Any existing Generation Capacity Resource located in the PJM Region that is offered into the Base Residual Auction for a particular Delivery Year, does not clear in such auction, is not offered into the First, Second, or Third Incremental Auctions for such Delivery Year, and does not meet any of the exceptions stated in subsection (c): (i) may not participate in any subsequent auctions conducted for such Delivery Year; (ii) shall not receive any payments under section 5.14 for such Delivery Year; and (iii) shall not be permitted to satisfy any LSE's Unforced Capacity Obligation, or any entity's obligation to obtain the commitment of Capacity Resources, for such Delivery Year.

(g) In addition to the remedies set forth in subsections (c), (d), (e), and (f), if the Market Monitoring Unit determines that one or more Capacity Market Sellers' failure to offer part or all of one or more existing generation resources into an auction would result in an increase of greater than five percent in any Zonal Capacity Price determined through such auction, the Office of the Interconnection shall apply to FERC for an order, on an expedited basis, directing such Capacity Market Seller to participate in the auction, or for other appropriate relief, and PJM will postpone clearing the auction pending FERC's decision on the matter.

## **6.7 Data Submission**

(a) Potential participants in any PJM Reliability Pricing Model Auction shall submit the following data, (all submitted data is subject to verification by the MMU) together with supporting documentation for each item, to the Market Monitoring Unit no later than four months prior to the posted date for the conduct of such auction, a list of owned or controlled generation resources by PJM transmission zone for the specified Delivery Year, including the amount of gross capacity, the EFORd and the net (unforced) capacity.



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(b) Except as provided in subsection (c) below, potential participants in any PJM Reliability Pricing Model Auction in any LDA or Unconstrained LDA Group that fails the Preliminary Market Structure Screen (or, if such region fails the screen, potential auction participants in the entire PJM Region) shall, in addition, submit the following data, (all submitted data is subject to verification by the MMU) together with supporting documentation for each item, to the Market Monitoring Unit no later than two months prior to the conduct of such auction:

i. If the Capacity Market Seller intends to submit a non-zero price in its Sell Offer in any such auction, the Capacity Market Seller shall submit a calculation of the Avoidable Cost Rate, EFORD Offer Segment, and Projected PJM Market Revenues, as defined in subsection (d) below, together with detailed supporting documentation.

ii. If the Capacity Market Seller intends to submit a Sell Offer based on opportunity cost, the Capacity Market Seller shall also submit a calculation of Opportunity Cost, as defined in subsection (d), with detailed supporting documentation.

(c) Potential auction participants identified in subsection (b) above need not submit the data specified in that subsection for any Generation Capacity Resource:

i. that is in an Unconstrained LDA Group or, if this is the relevant market, the entire PJM Region, and is in a resource class determined by the Market Monitoring Unit as not likely to include the marginal price-setting resources in such auction; or

ii. for which the potential participant commits that any Sell Offer it submits as to such resource shall not include any price above the level identified for the relevant resource class by the Market Monitoring Unit.

The Market Monitoring Unit shall determine, in its discretion, following stakeholder consultation, the resource classes and corresponding prices described in this subsection and shall identify such resource classes and prices in the posting required by section 6.2(a). Nothing herein precludes the Market Monitoring Unit from requesting additional information from any potential auction participant as deemed necessary by the Market Monitoring Unit, including, without limitation, additional cost data on resources in a class that is not otherwise expected to include the marginal price setting resource; and compliance with such request shall be a condition of participation in any auction. Any Sell Offer submitted in any auction that is inconsistent with any commitment made pursuant to this subsection shall be rejected, and the Capacity Market Seller shall be required promptly to resubmit a Sell Offer that complies with such commitments. If the Capacity Market Seller does not timely resubmit its Sell Offer, it shall be deemed to have submitted a Sell Offer that complies with the commitments made under this subsection, with a default price equal to the maximum price for the class of resource identified in the Sell Offer, as previously specified by the Market Monitoring Unit in the posting required by section 6.2(a). Notwithstanding the foregoing, if the Capacity Market Seller demonstrates to the satisfaction of the Market Monitoring Unit that a significant change in circumstances warrants submission of a Sell Offer that is inconsistent with a prior commitment under this subsection, then the Market Monitoring Unit shall allow such Sell Offer provided that the Capacity Market Seller promptly notifies the Market Monitoring Unit upon becoming aware of the change in circumstances and provides all information deemed necessary by the Market Monitoring Unit to

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support such Sell Offer and that the offer is otherwise consistent with the requirements of this section 6. The obligation imposed under section 6.6(a) shall not be satisfied unless and until the Capacity Market Seller submits (or is deemed to have submitted) a Sell Offer that conforms to its commitments made pursuant to this subsection.

(d) In order for costs to qualify for inclusion in the Market Seller Offer Cap, the Capacity Market Seller must provide to PJM relevant cost data concerning each data item specified. Based on the data and calculations submitted by the Capacity Market Sellers for each existing generation resource and the formulas specified below, the MMU shall calculate the Market Seller Offer Cap for each such resource, and notify the Capacity Market Seller one month prior to the auction whether such submittal will be accepted, and if not, provide to such seller detailed information as to why such submittal was not accepted. If a Capacity Market Seller fails to submit costs consistent with the above, it shall be required to submit any Sell Offer in such auction as Self-Supply. (All submitted data is subject to verification by the MMU.)

i. **Avoidable Cost Rate:** The Avoidable Cost Rate for an existing generation resource shall be determined using the formula below and applied to the unit's Base Offer Segment.

ii. **Opportunity Cost:** Opportunity Cost shall be the documented price available to an existing generation resource in a market external to PJM. In the event that the total MW of existing generation resources submitting opportunity cost offers in any auction for a Delivery Year exceeds the firm export capability of the PJM system for such Delivery Year, or the capability of external markets to import capacity in such year, PJM will accept such offers on a competitive basis. PJM will construct a supply curve of opportunity cost offers, ordered by opportunity cost, and accept such offers to export starting with the highest opportunity cost, until the maximum level of such exports is reached. The maximum level of such exports is the lesser of PJM's ability to permit firm exports or the ability of the importing area(s) to accept firm imports or imports of capacity, taking account of relevant export limitations by location. If, as a result, an opportunity cost offer is not accepted from an existing generation resource, the Market Seller Offer Cap applicable to Sell Offers relying on such generation resource shall be the Avoidable Cost Rate.

iii. **EFORd Offer Segment:** To address the risk of a change in EFORd for an existing generation resource between the auction and the Delivery Year, a Capacity Market Seller may submit a Sell Offer that includes a quantity of megawatts priced at up to the Net Cost of New Entry. Such quantity of megawatts shall be no greater than such resource's demonstrated summer net capability of installed capacity, as determined in accordance with the PJM Manuals, multiplied by, at the Capacity Market Seller's election, either: (A) the positive difference between such resource's five-year average EFORd for the five consecutive years ending three months prior to the submission of such Sell Offer and such resource's twelve-month average EFORd for the twelve months ending three months prior to the submission of such Sell Offer, or (B) the positive difference between the EFORd reasonably anticipated, based on known and measurable changes and supported by appropriate documentation, for the twelve months ending on the September 30 last preceding the commencement of the Delivery Year, and the twelve-month average EFORd for the twelve months ending three months prior to the submission of such Sell Offer.

iv. **Projected PJM Market Revenues,** as defined by section 6.8(d), for any Generation Capacity Resource to which the Avoidable Cost Rate is applied.

#### **6.8 Avoidable Cost Definition**

(a) **Avoidable Cost Rate:** The Avoidable Cost Rate for a Generation Capacity Resource that is the subject of a Sell Offer shall be determined using the following formula, expressed in dollars per MW-year:

$$\text{Avoidable Cost Rate} = [1.10 * (\text{AOML} + \text{AAE} + \text{AME} + \text{AVE} + \text{ATFI} + \text{ACC} + \text{ACLE}) + \text{APIR}]$$

Where:

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

- **AAE (Avoidable Administrative Expenses)** consists of the avoidable administrative expenses related directly to employees at the generating unit for twelve months preceding the month in which the data must be provided. The categories of expenses included in AAE are those incurred for: (a) employee expenses (except employee expenses included in AOML); (b) environmental fees; (c) safety and operator training; (d) office supplies; (e) communications; and (f) annual plant test, inspection and analysis.
- **AME (Avoidable Maintenance Expenses)** consists of avoidable maintenance expenses (other than expenses included in AOML) related directly to the generating unit for the twelve months preceding the month in which the data must be provided. The categories of expenses included in AME are those incurred for: (a) chemical and materials consumed during maintenance of the generating unit; and (b) rented maintenance equipment used to maintain the generating unit.
- **AVE (Avoidable Variable Expenses)** consists of avoidable variable expenses related directly to the generating unit incurred in the twelve months preceding the month in which the data must be provided. The categories of expenses included in AVE are those incurred for: (a) water treatment chemicals and lubricants; (b) water, gas, and electric service (not for power generation); and (c) waste water treatment.
- **ATFI (Avoidable Taxes, Fees and Insurance)** consists of avoidable expenses related directly to the generating unit incurred in the twelve months preceding the month in which the data must be provided. The categories of expenses included in ATFI are those incurred for: (a) insurance, (b) permits and licensing fees, (c) site security and utilities for maintaining security at the site; and (d) property taxes.
- **ACC (Avoidable Carrying Charges)** consists of avoidable short-term carrying charges related directly to the generating unit in the twelve months preceding the month in which the data must be provided. Avoidable short-term carrying charges shall include short term carrying charges for maintaining reasonable levels of inventories of fuel and spare parts that result from short-term operational unit decisions as measured by industry best practice standards. For the purpose of determining ACC, short term is the time period in which a reasonable replacement of inventory for normal, expected operations can occur.

- **ACLE (Avoidable Corporate Level Expenses)** consists of avoidable corporate level expenses directly related to the generating unit incurred in the twelve months preceding the month in which the data must be provided. Avoidable corporate level expenses shall include only such expenses that are directly linked to providing tangible services required for the operation of the generating unit proposed for Deactivation. The categories of avoidable expenses included in ACLE are those incurred for: (a) legal services, (b) environmental reporting; and (c) procurement expenses.

- **APIR (Avoidable Project Investment Recovery Rate) =  $PI \times CRF$**

Where:

- **PI** is the amount of project investment reasonably required to enable a Generation Capacity Resource that is the subject of a Sell Offer to continue operating or improve availability during Peak-Hour Periods during the Delivery Year.
- **CRF** is the annual capital recovery factor from the following table, applied in accordance with the terms specified below.

Age of Existing Unit (Years)	Remaining Life of Plant (Years)	Levelized CRF
1 to 5	20	0.125
6 to 10	15	0.146
11 to 15	10	0.198
16 Plus	5	0.363
Mandatory Capital Expenditures ("CapEx")	4	0.450
40 Plus Alternative	1	1.100

Unless otherwise stated, Age of Existing Unit shall be equal to the number of years since the Unit commenced commercial operation, up to and through the relevant Delivery Year.

Remaining Life of Plant defines the amortization schedule (*i.e.*, the maximum number of years over which the Project Investment may be included in the Avoidable Cost Rate.)

#### **Capital Expenditures and Project Investment**

For any given Project Investment, a Capacity Market Seller may make a one-time election to recover such investment using: (i) the highest CRF and associated recovery schedule to which it is entitled; or (ii) the next highest CRF and associated recovery schedule. For these purposes, the CRF and recovery schedule for the "16 Plus" category is the next highest CRF and recovery schedule for both the "Mandatory CapEx" and the "40 Plus Alternative" categories. The Capacity Market Seller using the above table must provide the PJM Market Monitoring Unit with information, identifying and supporting such election, including but not limited to the age of the unit, the amount of the Project Investment, the purpose of the investment, evidence of corporate commitment (e.g., an SEC filing, a press release, or a letter from a duly authorized

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corporate officer indicating intent to make such investment), and detailed information concerning the governmental requirement (if applicable). Absent other written notification, such election shall be deemed based on the CRF such Seller employs for the first Sell Offer reflecting recovery of any portion of such Project Investment. A Sell Offer submitted in the BRA for either or both of the 2007-2008 and 2008-2009 Delivery Years for which the "16 Plus" CRF and recovery schedule is selected may not exceed an offer price equal to the then-current Net CONE (on an unforced-equivalent basis).

For any resource using the CRF and associated recovery schedule from the CRF table that set the Capacity Resource Clearing Price in any Delivery Year, such Capacity Market Seller must also provide to the PJM Market Monitoring Unit, for informational purposes only, evidence of the actual expenditure of the Project Investment, when such information becomes available.

If the project associated with a Project Investment that was included in a Sell Offer using a CRF and associated recovery schedule from the above table has not entered into commercial operation prior to the end of the relevant Delivery Year, and the resource's Sell Offer sets the clearing price for the relevant LDA, the Capacity Market Seller shall be required to elect to either (i) pay a charge that is equal to the difference between the Capacity Resource Clearing Price for such LDA for the relevant Delivery Year and what the clearing price would have been absent the APIR component of the Avoidable Cost Rate, this difference to be multiplied by the cleared MW volume from such Resource ("rebate payment"); (ii) hold such rebate payment in escrow, to be released to the Capacity Market Seller in the event that the project enters into commercial operation during the subsequent Delivery Year or rebated to LSEs in the relevant LDA if the project has not entered into commercial operation during the subsequent Delivery Year; or (iii) make a reasonable investment in the amount of the PI in other existing Generation Capacity Resources owned or controlled by the Capacity Market Seller or its Affiliates in the relevant LDA. The revenue from such rebate payments shall be allocated pro rata to LSEs in the relevant LDA(s) that were charged a Locational Reliability Charge for such Delivery Year, based on their Daily Unforced Capacity Obligation in the relevant LDA(s). If the Sell Offer from the Generation Capacity Resource did not set the Capacity Resource Clearing Price in the relevant LDA, no alternative investment or rebate payment is required. If the difference between the Capacity Resource Clearing Price for such LDA for the relevant Delivery Year and what the clearing price would have been absent the APIR amount does not exceed the greater of \$10 per MW-day or a 10% increase in the clearing price, no alternative investment or rebate payment is required.

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### **Mandatory CapEx Option**

The Mandatory CapEx CRF and recovery schedule is an option available, beginning in the third BRA (Delivery Year 2009-10), to a resource that must make a Project Investment to comply with a governmental requirement that would otherwise materially impact operating levels during the Delivery Year, where: (i) such resource is a coal, oil or gas-fired resource that began commercial operation no fewer than fifteen years prior to the start of the first Delivery Year for which such recovery is sought, and such Project Investment is equal to or exceeds \$200/kW of capitalized project cost; or (ii) such resource is a coal-fired resource located in an LDA for which a separate VRR Curve has been established for the relevant Delivery Years, began commercial operation at least 50 years prior to the effective date of that certain September 29, 2006 Settlement Agreement in FERC Docket Nos. ER05-1410 and EL05-148, and the Capacity Market Seller submitting the sell offer for such resource was a signatory or an Affiliate of a signatory to such Settlement Agreement.

A Capacity Market Seller that wishes to elect the Mandatory CapEx option for a Project Investment must do so beginning with the Base Residual Auction for the Delivery Year in which such project is expected to enter commercial operation. A Sell Offer submitted in any Base Residual Auction for which the "Mandatory CapEx" option is selected may not exceed an offer price equivalent to 0.90 times the then-current Net CONE (on an unforced-equivalent basis).

### **40 Year Plus Alternative Option**

The 40 Plus Alternative CRF and recovery schedule is an option available, beginning in the third BRA (Delivery Year 2009-10), for a resource that is a gas- or oil-fired resource that began commercial operation no less than 40 years prior to the conduct of the relevant BRA (excluding, however, any resource in any Delivery Year for which the resource is receiving a payment under Part V of the PJM Tariff Generation Capacity Resources electing this 40 Plus Alternative CRF shall be treated as At Risk Generation for purposes of the sensitivity runs in the RTEP process). Resources electing the 40 Year Plus Option will be modeled in the RTEP process as "at-risk" at the end of the one-year amortization period.

A Capacity Market Seller that wishes to elect the 40 Plus Alternative option for a Project Investment must provide written notice of such election to the Office of the Interconnection no later than six months prior to the Base Residual Auction for which such election is sought; provided however that shorter notice may be provided if unforeseen circumstances give rise to the need to make such election and such seller gives notice as soon as practicable.

The Office of the Interconnection shall give market participants reasonable notice of such election, subject to satisfaction of requirements under the PJM Operating Agreement for protection of confidential and commercially sensitive information. A Sell Offer submitted in any Base Residual Auction for which the "40 Plus Alternative" option is selected may not exceed an offer price equivalent to the then-current Net CONE (on an unforced-equivalent basis).

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(b) For the purpose of determining an Avoidable Cost Rate, avoidable expenses are incremental expenses directly required to operate a Generation Capacity Resource that a Generation Owner would not incur if such generating unit did not operate in the Delivery Year or meet Availability criteria during Peak-Hour Periods during the Delivery Year.

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

(d) Projected PJM Market Revenues for any Generation Capacity Resource to which the Avoidable Cost Rate is applied shall include all actual unit-specific revenues from PJM energy markets, ancillary services, and unit-specific bilateral contracts from such Generation Capacity Resource, net of marginal costs for providing such energy (i.e., costs allowed under cost-based offers pursuant to Section 6.4 of Schedule 1 of the Operating Agreement) and ancillary services from such resource.

- (i) For the first three BRAs (for Delivery Years 2007-08, 2008-09, 2009-10), the calculation of Projected PJM Market Revenues shall be equal to the simple average of such net revenues as described above for calendar years 2001-2006; and
- (ii) For the fourth BRA (delivery year 2010-11) and thereafter, the calculation of Projected PJM Market Revenues shall be equal to the rolling simple average of such net revenues as described above from the three most recent whole calendar years prior to the year in which the BRA is conducted.



If a Generation Capacity Resource did not receive PJM market revenues during the entire relevant time period because the Generation Capacity Resource was not integrated into PJM during the full period, then the Projected PJM Market Revenues shall be calculated using only those whole calendar years within the full period in which such Resource received PJM market revenues.

If a Generation Capacity Resource did not receive PJM market revenues during the entire relevant time period because it was not in commercial operation during the entire period, then the Projected PJM Market Revenues shall be calculated based upon net revenues received over the entire period by comparable units, to be developed by the MMU and the Capacity Market Seller.

## **7. GENERATION RESOURCE RATING TEST FAILURE CHARGE**

### **7.1 Generation Resource Rating Test Failure Charges**

A Generation Resource Rating Test Failure Charge shall be assessed on any Market Seller that commits a Generation Capacity Resource for a Delivery Year if such resource fails a generation resource capacity test, as provided herein.

#### **a) Generation Resource Fails Capacity Test in Delivery Year**

Each Generation Capacity Resource committed for a Delivery Year shall be obligated to complete a generation resource capacity test, as described in the PJM Manuals, for both the Summer and Winter Seasons. The Market Seller that committed the resource may perform an unlimited number of tests during each such period. If none of the tests during a testing period certify full delivery of the megawatt amount of installed capacity the Market Seller committed for such Delivery Year, the Market Seller shall be assessed a daily Generation Resource Rating Test Failure Charge for each day from the first day of the Summer or Winter Season in which such resource failed the rating test through the last day of such Delivery Year, provided, however, that a Capacity Market Seller that fails or is expected to fail a rating test may obtain and commit Unforced Capacity from a replacement Generation Capacity Resource meeting the same locational requirements. Such Unforced Capacity may include uncommitted or uncleared Sell Offer blocks from Generation Capacity Resources that were otherwise committed. In such case, the charge prescribed below shall be assessed from the first day of the season for which the test was failed through the last day before the effective date of the commitment of such replacement Generation Capacity Resource in an amount equal to the full shortage of Unforced Capacity determined in subsection (b) below. Any such commitment of replacement capacity shall be effective upon no less than one day's notice to the Office of the Interconnection. Thereafter, any charges assessed on the Capacity Market Seller that fails such a rating test shall be assessed for the quantity of Unforced Capacity less any amount from such replacement Generation Capacity Resource.

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b) **Generation Resource Rating Test Failure Charge**

The Generation Resource Rating Test Failure Charge shall equal the Daily Deficiency Rate multiplied by the following megawatt quantity, converted to an Unforced Capacity basis using the EFOR<sub>D</sub> associated with such Market Seller's cleared Sell Offer: (i) the installed capacity in such Sell Offer for such resource, minus (ii) the highest installed capacity rating determined for such resource in any test during the relevant testing period. The Daily Deficiency Rate shall equal the greater of: (iii) two times the Capacity Resource Clearing Price, in \$/MW-day, applicable to the Generation Capacity Resource; or (iv) the Net Cost of New Entry. If a single resource is the basis for cleared Sell Offers of multiple Capacity Market Sellers, the installed capacity shortfall determined under (i) and (ii) above shall be assessed upon such Capacity Market Sellers on a pro-rata basis in accordance with the megawatts of capacity from such resource in their cleared Sell Offers.

c) **Allocation of Revenue Collected from Generation Resource Rating Test Failure Charges.**

The revenue collected from Generation Resource Rating Test Failure Charges shall be distributed on a pro-rata basis to LSEs that were charged a Locational Reliability Charge for the Delivery Year for which the Generation Resource Rating Test Failure Charge was assessed. The charges shall be allocated on a pro-rata basis to LSEs based on their Daily Unforced Capacity Obligation.

## **8. CAPACITY RESOURCE DEFICIENCY CHARGE**

**8.1** A Capacity Resource Deficiency Charge shall be assessed on any Capacity Market Seller that commits a Capacity Resource for a Delivery Year that is unable or unavailable to deliver Unforced Capacity for all or any part of such Delivery Year for any of the following reasons, and that does not obtain replacement Unforced Capacity in the megawatt quantity required to satisfy its cleared Sell Offer:

a) **Unit Derating** – Such Capacity Resource is a Generation Capacity Resource and its capacity value is derated prior to or during the Delivery Year;

b) **EFOR<sub>D</sub> Increase** – Such Capacity Resource is a Generation Capacity Resource and the EFOR<sub>D</sub> value determined for such resource two (2) months prior to the Third Incremental Auction is lower than the EFOR<sub>D</sub> value submitted in the Capacity Market Seller's cleared Sell Offer;

c) **Planned Generation Resource** – Such Capacity Resource is a Planned Generation Capacity Resource and Interconnection Service has not commenced as to such resource prior to the start of the Delivery Year;

d) **Planned Demand Resource** – Such Capacity Resource is a Planned Demand Resource and the associated demand response program is not installed prior to the start of the Delivery Year; or

e) **Existing Demand Resource** – Such Capacity Resource is an existing Demand Resource and, subject to section 8.4, is not capable of providing the megawatt quantity of load response specified in the cleared Sell Offer.

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## **8.2. Capacity Resource Deficiency Charge**

The Capacity Resource Deficiency Charge shall equal the Daily Deficiency Rate (as defined in section 7) multiplied by the megawatt quantity of deficiency below the level of capacity committed in such Capacity Market Seller's Sell Offer, for each day such Capacity Market Seller is deficient.

## **8.3. Allocation of Revenue Collected from Capacity Resource Deficiency Charges**

The revenue collected from the assessment of a Capacity Resource Deficiency Charge shall be distributed on a pro-rata basis to all LSEs that were charged a Locational Reliability Charge for the day for which such Capacity Resource Deficiency Charge was assessed. Such revenues shall be distributed on a pro-rata basis to such LSEs based on their Daily Unforced Capacity Obligations.

## **8.4 Relief from Charges**

A Capacity Market Seller that is otherwise subject to the Capacity Resource Deficiency Charge solely as a result of section 8.1(e) may receive relief from such Charge if it demonstrates that the inability to provide the level of demand response specified in its Sell Offer is due to the permanent departure (due to plant closure, efficiency gains, or similar reasons) from the Transmission System of load that was relied upon for load response in such Sell Offer; provided, however, that the Capacity Market Seller must provide the Office of the Interconnection with all information deemed necessary by the Office of the Interconnection to assess the merits of the request for relief.

# **9. PEAK SEASON MAINTENANCE COMPLIANCE PENALTY CHARGE.**

### **a) Purpose**

To preserve and maintain the reliability of the PJM Region and to recognize the impact of planned outages and maintenance outages of Generation Capacity Resources during the Peak Season, each Capacity Market Seller that commits a Generation Capacity Resource for a Delivery Year must ensure that such Generation Capacity Resource has available sufficient Unforced Capacity during the Peak Season to satisfy the megawatt amount specified in the cleared Sell Offer for such resource.

### **b) Peak Season Requirement**

To the extent the Generation Capacity Resource will not be available due to a planned or maintenance outage that occurs during the Peak Season without the approval of the Office of the Interconnection, the Capacity Market Seller must obtain replacement Unforced Capacity from a Capacity Resource that is not already committed for such Delivery Year and that meets all characteristics specified in the Sell Offer, including the megawatt quantity of Unforced Capacity committed for such Delivery Year, or otherwise pay a Peak Season Maintenance Compliance Penalty Charge. The Capacity Market Seller shall commit such replacement Capacity Resource in accordance with the procedure set forth in the PJM Manuals.

c) **Peak Season Planned and Maintenance Outages**

The Office of the Interconnection shall adopt and maintain rules and procedures for determining the allowable Peak Season planned and maintenance outages.

d) **Peak Season Maintenance Compliance Penalty Charge**

The Peak Season Maintenance Compliance Penalty Charge shall equal the Daily Deficiency Rate (as defined in section 7) multiplied by the megawatt quantity of capacity committed from such Generation Capacity Resource in the cleared Sell Offer, for each day during the Peak Season that such resource is out-of-service on a maintenance outage that is not authorized by the Office of the Interconnection.

e) **Allocation of Revenue Collected from Peak Season Maintenance Compliance Penalty Charges**

The revenue collected from assessment of a Peak Season Maintenance Compliance Penalty Charge shall be distributed on a pro-rata basis to all LSEs that were charged a Locational Reliability Charge for the day for which the Capacity Resource Deficiency Charge was assessed. Such revenues shall be distributed on a pro-rata basis to all such LSEs based on their Daily Unforced Capacity Obligation.

## **10. PEAK-HOUR-PERIOD AVAILABILITY CHARGES AND CREDITS**

(a) To preserve and maintain the reliability of the PJM Region and to encourage Capacity Market Sellers to maintain the availability of Generation Capacity Resources during critical peak hours of the Delivery Year, each Capacity Market Seller that commits a Generation Capacity Resource for a Delivery Year shall be credited or charged to the extent the critical peak-period availability of its committed Generation Capacity Resources exceeds or falls short, respectively, of the expected availability of such resources. Charges and credits hereunder shall not apply to wind or solar resources.

(b) Critical peak periods for purposes of this assessment ("Peak-Hour Periods") shall be the hour ending 1500 EPT through the hour ending 1900 EPT on any day during the calendar months of June through August that is not a Saturday, Sunday, or federal holiday, and the hour ending 800 EPT through the hour ending 900 EPT and the hour ending 1900 EPT through the hour ending 2000 EPT on any day during the calendar months of January and February that is not a Saturday, Sunday or federal holiday.

c) Peak-Period Equivalent Forced Outage Rate and Peak-Period Capacity Calculations

The Peak-Period Equivalent Forced Outage Rate shall be calculated for Peak-Hour Periods based on the following formula:

$$EFOR_p(\%) = (FOH + EFPOH) / (SH + FOH)$$

where

FOH = full forced outage hours when the unit was called upon, excluding those outages deemed as OMC (as defined below);

EFPOH = equivalent forced partial outage hours when the unit was called upon, excluding those outages deemed as OMC (as defined below); and

SH = service hours as defined pursuant to NERC GADS standards.

The Peak-Period Capacity of a Generation Capacity Resource shall be calculated as follows:

$$PCAP = ICAP * (1.0 - EFOR_p)$$

where

ICAP = the installed capacity rating of such Generation Capacity Resource

d) Determination of Expected EFOR<sub>p</sub> and PCAP for Generation Capacity Resources

For each Delivery Year, the expected EFOR<sub>p</sub> and PCAP of each Generation Capacity Resource committed to serve load in such Delivery Year shall be the EFOR<sub>D</sub> and UCAP, respectively, calculated on a rolling-average basis using such resource's service history during the five consecutive annual periods of twelve consecutive months ending September 30 last preceding such Delivery Year. Such EFOR<sub>D</sub> and UCAP shall be determined in accordance with Schedule 5 of the Reliability Assurance Agreement, which excludes (for purposes of Capacity Resource UCAP calculations) outages deemed outside management control in accordance with the standards and guidelines of NERC, as defined in the Generating Availability Data System, Data Reporting Instructions in Attachment K or its successor ("Outside Plant Management Control" or "OMC").

(e) For each Delivery Year, the actual EFOR<sub>p</sub> and PCAP of each Generation Capacity Resource shall be calculated during the Peak-Hour Periods of such Delivery Year, provided however, that such calculation shall not include any day such a resource was unavailable if such unavailability resulted in a charge or penalty due to delay, cancellation, retirement, de-rating, or rating test failure. The full or partial forced outage hours when called upon shall be those outage hours during which the cost-based offer for energy from the resource would have been less than the applicable Locational Marginal Price for such resource, or when the Office of the Interconnection would have called upon the resource (absent the outage) for

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operating reserves, in both cases as determined by the Office of the Interconnection in accordance with the procedures specified in the PJM Manuals (including, without limitation, respecting such unit's current operating constraints). In addition, for single-fueled, natural gas-fired units, a failure to perform during the winter Peak-Hour Period shall be excused for purposes of this section if the Capacity Market Seller can demonstrate to the Office of the Interconnection that such failure was due to non-availability of gas to supply the unit.

(f) If the calculation under subsection (c) for any Generation Capacity Resource for a Delivery Year results in fewer than fifty total Service Hours during Peak Hours, then the actual EFOR<sub>D</sub> for purposes of such calculation shall be the resource's EFOR<sub>D</sub> and the actual PCAP for purposes of such calculation shall be the resource's UCAP, in both cases considering all hours in the Delivery Year (to the extent required by the EFOR<sub>D</sub> and UCAP calculations).

(g) For each Delivery Year, the excess or shortfall in Peak-Hour Period availability for each Generation Capacity Resource shall be determined by comparing such resource's expected and actual PCAP, subject to the limitation under subsection (i) below. The net Peak-Hour Period availability shortfall or excess for each Capacity Market Seller and FRR Entity in each Locational Deliverability Area shall be the net of the shortfalls and excesses of all Generation Capacity Resources in such Locational Deliverability Area committed by such Capacity Market Seller for such Delivery Year.

(h) As to any Generation Capacity Resource experiencing or expected to experience a full or partial outage during any Peak-Hour Period that would or could result in a shortfall under subsection (g) above, a Capacity Market Seller may obtain and commit Unforced Capacity from a replacement Generation Capacity Resource (not previously committed) meeting the same locational requirements as such resource. Such Unforced Capacity shall be recognized for purposes of this section prospectively from the effective date of commitment of such replacement resource, and to the extent such replacement Unforced Capacity thereafter is available during Peak-Hour Periods, any shortfall that otherwise would have been calculated shall be reduced to that extent. Any such commitment of replacement capacity shall be effective upon no less than one day's notice to the Office of the Interconnection.

(i) The shortfall determined for any Generation Capacity Resource shall not exceed an amount equal to 0.50 times the Unforced Capacity of such resource; provided, however, that if such limitation is triggered as to any Generation Capacity Resource for a Delivery Year, then the decimal multiplier for this calculation as to such resource in the immediately succeeding Delivery Year shall be increased to 0.75, and if such limitation again is triggered in such succeeding Delivery Year, then the multiplier shall be increased to 1.00. The multiplier shall remain at either such elevated level for each succeeding Delivery Year until the shortfall

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experienced by such resource is less than 0.50 times the Unforced Capacity of such resource for three consecutive Delivery Years.

(j) A Peak-Hour Period Availability Charge shall be assessed on each Capacity Market Seller with a net shortfall in PCAP in an LDA, where such charge is equal to such shortfall times the Capacity Resource Clearing Price determined for such Locational Deliverability Area for such Delivery Year.

(k) The revenues from such charges shall be distributed to the Capacity Market Sellers, and FRR Entities that committed Generation Capacity Resources, in such Locational Deliverability Area that have net excess PCAP for such Delivery Year, provided however that any such seller shall be paid no more than the product of such seller's net excess PCAP times the Capacity Clearing Price determined for such Locational Deliverability Area for such Delivery Year. Any excess revenues remaining after such distribution shall be distributed on a pro-rata basis to all LSEs in the Zone that were charged the same Locational Reliability Charge for the Delivery Year for which the Peak Hour 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.

(l) The Office of the Interconnection shall provide estimated charges and credits based on the summer Peak-Hour Periods within three calendar months after the end of the summer period. Final charges and credits for the Delivery Year shall be billed within three calendar months following the end of the winter period.

## 11. DEMAND RESOURCE AND ILR COMPLIANCE PENALTY CHARGE

(a) The Office of the Interconnection shall separately evaluate compliance of each Demand Resource offered and cleared in a Reliability Pricing Model Auction and each nominated ILR resource certified for a Delivery Year, in accordance with procedures set forth in the PJM Manuals. The compliance is evaluated separately in each LDA (or Zone, where such Zone encompasses two or more LDAs). Capacity Market Sellers that committed Demand Resources and ILR Providers that nominated ILR for a Delivery Year that cannot demonstrate the hourly performance of such resource in real-time based on the capacity commitment reflected in the applicable Sell Offer or ILR certification shall be assessed a Demand Resource and ILR Compliance Penalty charge; provided, however, that such under compliance shall be determined on an aggregate basis for all Demand Resources and ILR offered by the same Capacity Marker Seller or by the same ILR Provider in a single Zone.

b) The Demand Resource and ILR Compliance Penalty Charge shall equal 0.20 times the Annual Revenue Rate multiplied by the following megawatt quantity, converted to an Unforced Capacity basis using the applicable DR Factor and Forecast Pool Requirement: (i) the megawatts of load reduction capability committed in the applicable Sell Offer or ILR certification minus (ii) the under-compliance megawatts of load reduction actually provided during a reduction event called by the Office of the Interconnection. The Annual Revenue Rate for a Demand Resource shall be the Resource Clearing Price that the resource received in the auction in which it cleared. The Annual Revenue Rate for an ILR resource shall be the

Adjusted Zonal Capacity Price for the Zone in which such ILR was certified, but no to exceed the Locational Reliability Charges assessed on loads in such LDA, net of any Capacity Transfer Right credits allocated to such loads. The total charge per megawatt that may be assessed on a Demand Resource or ILR resource in a Delivery Year shall be capped at the Annual Revenue Rate the resource would receive in the Delivery Year.

c) Revenues from assessment of a Demand Resource and ILR Compliance Penalty Charge shall be distributed by the third billing month following the event that gave rise to such charge on a pro-rata basis to Demand Resource Providers and ILR Providers that provided load reductions in excess of the amount such resources were committed or certified to provide. Such revenue distribution, however, shall not exceed for any resource the quantity of excess megawatts provided by such resource during a single event times 0.20 times the Annual Revenue Rate received by such resource. To the extent any such revenues remain after such distribution, the remaining revenues shall be distributed to LSEs based on each LSE's average Daily Unforced Capacity Obligation for the month in which the non-compliance event occurred.

## **12. QUALIFYING TRANSMISSION UPGRADE COMPLIANCE PENALTY CHARGE**

If a Qualifying Transmission Upgrade forming the basis of a Sell Offer that cleared in the Base Residual Auction for a Delivery Year is not in service at the commencement of such Delivery Year, and the Capacity Market Seller does not obtain replacement Capacity Resources in the LDA for which such upgrade was to increase CETL, such seller shall pay a compliance penalty charge for each day such upgrade is delayed during such Delivery Year equal to the megawatt quantity of Import Capability cleared in the Base Residual Auction based on such upgrade, multiplied by the greater of: (i) two times the Locational Price Adder of the LDA into which the Qualifying Transmission Upgrade is cleared, in \$/MW-day; or (ii) the Net Cost of New Entry less the clearing price in the LDA from which CETL was increased. The revenue collected from the assessment of Qualifying Transmission Upgrade Compliance Penalty Charges shall be distributed on a pro-rata basis to all LSEs that were charged a Locational Reliability Charge for the day for which such charge was assessed. Such revenues shall be distributed on a pro-rata basis to such LSEs based on their Daily Unforced Capacity Obligations.

## **13. EMERGENCY PROCEDURE CHARGE**

### **13.1 Application of the Emergency Procedure Charge**

Following an Emergency, the compliance during the period of such Emergency with the instructions of the Office of the Interconnection of: (a) each Capacity Market Seller that committed Capacity Resources during such period; and (b) each ILR Provider responsible for ILR certified for such period, shall be evaluated as recommended by the Reliability Committee and directed by the PJM Board. If, based on such evaluation, it is determined that a Capacity Market Seller or ILR Provider refused to comply with, or otherwise failed to employ its best efforts to comply with, the instructions of the Office of the Interconnection to implement PJM emergency procedures, then such Market Seller or ILR Provider shall pay an Emergency Procedure Charge.



### **13.2 Emergency Procedure Charge**

The Emergency Procedure Charge shall equal 365 multiplied by the Daily Deficiency Rate for such Delivery Year times each megawatt of a Demand Resource or ILR that was not implemented as directed, and each megawatt of a Generation Capacity Resource that was not made available as directed despite being capable of producing energy at the time, and that is deliverable to the PJM Region in the case of a Generation Capacity Resource located outside the PJM Region.

### **13.3 Allocation of Revenue from Emergency Procedure Charges**

The revenue collected from assessment of an Emergency Procedure Charge shall be distributed on a pro-rata basis to all LSEs that were charged a Locational Reliability Charge for the day for which the Emergency Procedure Charge was assessed. The charges shall be allocated on a pro-rata basis to all such LSEs based on their Daily Unforced Capacity Obligation.

## **14. CONVERSION OF CAPACITY CREDITS FROM PRIOR CAPACITY ADEQUACY REGIME**

### **14.1 Purpose**

Capacity Credits shall not be accepted as satisfaction of the Daily Unforced Capacity Obligation of any LSE. Parties to Capacity Credit transactions may agree bilaterally to convert such transactions on a basis that permits them to clear in a Reliability Pricing Model Auction, or may settle such transactions financially as described in section 14.2.

### **14.2 Settlement**

For the 2007/2008 Delivery Year, only Capacity Credits confirmed by the Office of the Interconnection to have been entered into prior to April 1, 2006 will be settled based on the marginal value of system capacity (\$/MW-day) as determined under section 5.14(a) in the Base Residual Auction for such Delivery Year, plus any Locational Price Adder determined in such auction for the Locational Deliverability Area that corresponds to the Mid-Atlantic Region plus the Allegheny Power System Zone. The party that purchased such Capacity Credit shall receive this value multiplied by the megawatt quantity of the Capacity Credit, for the duration of such transaction. The party that sold such Capacity Credit shall be assessed this value, multiplied by the megawatt quantity of the Capacity Credit, for the duration of such transaction. For the 2008/2009 Delivery Year, and thereafter, Capacity Credits will be settled based on the marginal value of system capacity (\$/MW-day) as determined under section 5.14(a) in the Base Residual Auction for such Delivery Year. The party that purchased such Capacity Credit shall receive this value multiplied by the megawatt quantity of the Capacity Credit, for the duration of the transaction. The party that sold such Capacity Credit will be assessed this value multiplied by the megawatt quantity of the Capacity Credit, for the duration of the transaction.

## **15. COORDINATION WITH ECONOMIC PLANNING PROCESS**

Following each Base Residual Auction, the Office of the Interconnection shall review each LDA that has a Locational Price Adder to determine if Planned Generation Capacity Resources, Planned Demand Resources, or Qualifying Transmission Upgrades submitted Sell Offers that cleared in such auction. If a Locational Price Adder results from the clearing of an LDA for two consecutive Base Residual Auctions, and no such planned resources or upgrades clear in such auctions for such LDA, then the Office of the Interconnection shall evaluate in the RTEP process the costs and benefits of a transmission upgrade that would reduce to zero the Locational Price Adder for such LDA. Such evaluation will compare the cost of the upgrade over ten years against the value of elimination of the Locational Price Adder over such period. If such upgrade is found to be feasible and beneficial, it shall be included in the RTEP as soon as practicable. The annual costs of such upgrade shall be allocated to all LSEs serving load in such LDA, pro rata based on such loads.

## **16 RELIABILITY BACKSTOP**

### **16.1. Purpose**

The Reliability Backstop provides a mechanism to resolve reliability criteria violations caused by: (a) lack of sufficient capacity committed through the Reliability Pricing Model Auctions; or (b) near-term transmission deliverability violations identified after the Base Residual Auction is conducted. These backstop mechanisms are intended to guarantee that sufficient generation, transmission and demand response solutions will be available to preserve system reliability. The backstop mechanisms are based on specific triggers that signal a need for a targeted solution to a reliability problem that was not resolved by the long-term commitment of Capacity Resources through Self-Supply or the Reliability Pricing Model Auctions.

### **16.2 Investigation of Capacity Shortfall**

If the total Unforced Capacity of Capacity Resources committed for a Delivery Year following the Base Residual Auction equates to an installed reserve margin that is more than one percentage point lower than the approved PJM Region Installed Reserve Margin, the Office of the Interconnection shall investigate the cause for the shortage, and recommend corrective action, including, without limitation, adjusting the Cost of New Entry to the extent determined necessary by such investigation, or addressing other barriers to entry identified by such investigation. No Reliability Backstop Auction will be conducted to address such a shortfall unless it occurs in the Base Residual Auctions for three consecutive Delivery Years.

### **16.3 Triggering Conditions**

a) Either of the following two conditions will trigger reliability backstop measures provided in this section, as described below:

i) If the total Unforced Capacity of all Capacity Resources committed through Self-Supply or the Base Residual Auctions for three consecutive Delivery Years, equates to an installed reserve margin that is more than one percentage point lower than the approved PJM Region Installed Reserve Margin, the Office of the Interconnection will declare a capacity shortage and make a filing with FERC for approval to conduct a Reliability Backstop Auction. Upon receipt of such approval, the Office of the Interconnection will conduct a Reliability Backstop Auction in accordance with Section 16.4.

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ii) If the total Unforced Capacity of all Base Load Generation Resources committed in a Base Residual Auction for a Delivery Year is less than the forecasted minimum hourly load calculated by the Office of the Interconnection for such Delivery Year, the Office of the Interconnection will investigate the cause of shortfall. If such a shortfall occurs in the Base Residual Auctions for three consecutive Delivery Years, the Office of the Interconnection shall declare a capacity shortage and make a filing with FERC for approval to conduct a Reliability Backstop Auction. Upon receipt of such approval, the Office of the Interconnection will conduct a Reliability Backstop Auction in accordance with Section 16.4.

b) In addition to the foregoing events that trigger reliability backstop measures, if a near-term, i.e., later in time than the conduct of the Base Residual Auction for a Delivery Year, transmission criteria violation caused by an announced generation resource deactivation is identified by the regional transmission reliability planning analysis performed by the Office of the Interconnection in accordance with Part V of this Tariff, the Office of the Interconnection will identify the necessary transmission upgrade. In accordance with such rules, such generation resource may remain in service until the transmission upgrade is installed. No Reliability Backstop Auction will be conducted.

#### **16.4. Reliability Backstop Auction**

##### **a) Scope of Auction**

The Office of the Interconnection shall conduct each Reliability Backstop Auction to commit additional Generation Capacity Resources, or in the case of an auction triggered by section 16.3(a)(ii), additional Base Load Generation Resources to the PJM Region to resolve the system-wide reliability criteria violation that triggered the need for such auction. Capacity Resources committed in a Reliability Backstop Auction for a Delivery Year shall not include any Planned Generation Capacity Resources previously committed in the Base Residual Auction for such Delivery Year. The Reliability Backstop Auction shall obtain commitments of additional Generation Capacity Resources (or, as applicable, additional Base Load Generation Resources) for a term of up to fifteen (15) Delivery Years. If a Reliability Backstop Auction is required, the offer period for such auction shall commence, subject to FERC approval as specified above, no later than four months after the Base Residual Auction in which the third consecutive Capacity Resource shortfall occurs. Upon verification and notification by the PJM Board of Managers that a Reliability Backstop Auction is required, the Office of the Interconnection shall post notification that a Reliability Backstop Auction is to be held. Upon such notification, the offer period shall commence, and shall remain open for six (6) months.

##### **b) Sell Offers**

Each Sell Offer shall specify the following information, as further specified in the PJM Manuals:

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- the minimum price in \$/MW-day required by the Capacity Market Seller to provide additional Unforced Capacity from a Generation Capacity Resource (or from a Base Load Generation Resource, in the case of an auction triggered by section 16.3(a)(ii));
- the megawatts of Unforced Capacity to be provided by such resource;
- the specific location of the proposed plant;
- all information required from a Generation Interconnection Customer by Part IV of this Tariff and the PJM Manuals;
- general plant technical specifications, as specified in the PJM Manuals;
- the term of cost recovery ("Backstop Period") requested, not to exceed 15 years; and
- the first full Delivery Year for which such resource shall be available, which shall also be the first year of the Backstop Period.

Each Generation Capacity Resource (or Base Load Generation Resource) accepted in a Reliability Backstop Auction shall comply with the procedures for new generation interconnection in Part IV of this Tariff, and each such resource shall be responsible for satisfying all capability and deliverability requirements for Capacity Resources, pursuant to the Reliability Assurance Agreement.

c) Submission of Sell Offers

The Sell Offer period shall begin at 00:01 Eastern Prevailing Time on the date specified by the Office of the Interconnection in the notification posting and shall end at 23:59 Eastern Prevailing Time six calendar months after such date. Sell offers shall be submitted during such period in writing to the Office of the Interconnection, and shall conform to the submission procedures as specified in the PJM Manuals. The Office of the Interconnection shall confirm in writing the receipt of each Sell Offer, within two weeks after receipt of each such offer.

d) Posting of Information by the Office of the Interconnection

Upon notification by the PJM Board of Managers that a Reliability Backstop Auction will be conducted, the Office of the Interconnection shall post the following information:

- System condition that necessitates a Reliability Backstop Auction;
- Megawatt quantity of Unforced Capacity required from additional Generation Capacity Resources, or from additional Base Load Generation Resources;
- Date by which the resources must be capable of delivering Unforced Capacity;
- Any other required specifications for the additional Unforced Capacity sought through such auction.

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c) Conduct of the Reliability Backstop Auction

i) Auction Clearing Procedure

The Reliability Backstop Auction shall select the Sell Offer or combination of Sell Offers that that satisfies the requirements posted by the Office of the Interconnection at the lowest offer price(s). If more than one Sell Offer must be selected to satisfy the specified requirements, the Sell Offers shall be selected in rank order from lowest offer price to highest offer price until the requirement is satisfied. In the event two or more Sell Offers specify the same offer price, and fewer than all of such offers are needed to satisfy the specified requirements, the Office of the Interconnection shall select the Sell Offer(s) proposing Generation Capacity Resource(s), or, as applicable, Base Load Generation Resource(s) that will best satisfy overall reliability requirements for the PJM Region, as determined by the Office of the Interconnection using transmission reliability analysis.

ii) Market Settlement

Pursuant to the agreement specified below, each Capacity Market Seller submitting a Sell Offer that is accepted in a Reliability Backstop Auction shall be paid the offer price in such Sell Offer for each MW-day in the Backstop Period, less any payments the Capacity Market Seller is entitled to receive pursuant to section 5 of this Attachment as a result of Sell Offers submitted with respect to such Generation Capacity Resource in any Base Residual Auction or Incremental Auction, including, without limitation, payments of Capacity Resource Clearing Prices (including for Self-Supply) and Resource Make-Whole Payments; and less any payments the Capacity Market Seller is entitled to receive for energy or ancillary services pursuant to Schedule 1 of the Operating Agreement with respect to services provided by such resource, net of the Variable Operations and Maintenance costs of such resource, as determined in accordance with the PJM Manuals.

PJM shall recover the costs of any such payments to Capacity Market Sellers for such resources through a charge, in addition to the Locational Reliability Charge, assessed on all LSEs in the PJM Region, pro rata based on each such LSE's Daily Unforced Capacity Obligations in all LDAs in which such LSE serves load.

iii) Standard Contract Provisions

The Office of the Interconnection, on behalf of all LSEs in the PJM Region, will enter into an agreement with each Capacity Market Seller that submitted an accepted Sell Offer in any Reliability Backstop Auction providing for the payments specified above. Such agreement shall include the provisions and address the standards set forth in Section 16.4(b), and shall include such other terms and conditions as are customary in the industry, as specified in the PJM Manuals.

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d) FERC Approval

Any such agreement shall provide that it shall be filed with FERC as a rate schedule pursuant to section 205 of the Federal Power Act, and that the effectiveness of such agreement shall be conditioned on receipt of FERC acceptance or approval of such agreement.

**16.5 Must Offer into Base Residual Auction**

All Capacity Market Sellers submitting a Sell Offer that is selected in a Reliability Backstop Auction must offer all Unforced Capacity of the Generation Capacity Resource underlying such Sell Offer into the Base Residual Auctions conducted subsequent to the Reliability Backstop Auction for all Delivery Years in the Backstop Period. The Market Seller shall offer the Unforced Capacity of such resources into each such auction at zero price, and shall receive the Capacity Resource Clearing Price as determined in each such auction.

**16.6 Reliability Backstop Resource Deficiency Charges**

(a) Any Capacity Market Seller that submits a Sell Offer that was selected in a Reliability Backstop Auction and that is not able to deliver in a Delivery Year all megawatts of Unforced Capacity specified in the selected Sell Offer, shall not receive any payments that such Capacity Market Seller otherwise would have been eligible to receive for such Delivery Year pursuant to the Reliability Backstop Auction.

(b) Any Capacity Market Seller that submits a Sell Offer that was selected in a Reliability Backstop Auction and that fails to deliver all megawatts of Unforced Capacity specified in the selected Sell Offer at any time during the Backstop Period specified in such Sell Offer must refund all payments received by such Market Seller pursuant to section 16.4(b).

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## 17. TRANSITION

### 17.1 Phase-in of the Reliability Pricing Model

The Reliability Pricing Model shall be phased in during the Transition Period as described below.

### 17.2 Reliability Pricing Model Auctions Conducted During Transition Period

(a) The Office of the Interconnection shall conduct Base Residual Auctions for each Delivery Year in the Transition Period in accordance with the following schedule:

Delivery Year	Base Residual Auction Held
June 1, 2007 – May 31, 2008	April 2007
June 1, 2008 – May 31, 2009	July 2007
June 1, 2009 – May 31, 2010	October, 2007
June 1, 2010 – May 31, 2011	January, 2008
June 1, 2011 – May 31, 2012	May 2008

b) The Office of the Interconnection shall conduct Incremental Auctions for each Delivery Year in the Transition Period in accordance with the following schedule:

Delivery Year	First Incremental Auction Held	Second Incremental Auction Held If Necessary	Third Incremental Auction Held
June 1, 2007 – May 31, 2008	None Held	None Held	None Held
June 1, 2008 – May 31, 2009	None Held	None Held	January, 2008
June 1, 2009 – May 31, 2010	None Held	April, 2008	January, 2009
June 1, 2010 – May 31, 2011	None Held	April, 2009	January, 2010
June 1, 2011 – May 31, 2012	June 2009	April 2010	January 2011

### 17.3 Transition Period Locational Deliverability Areas

The Office of the Interconnection shall establish Locational Deliverability Areas during the Transition Period in accordance with the following:

#### 2007/2008, 2008/2009, and 2009/2010 Delivery Years

- MAAC Region and APS (the zones listed below for Eastern MAAC, Southwestern MAAC and Western MAAC, plus APS)
- ComEd, AEP, Dayton, Dominion and Duquesne
- Eastern MAAC (PSE&G, JCP&L, PECO, AE, DPL & RECO)
- Southwestern MAAC (PEPCO & BG&E)

#### 2010/2011 and subsequent Delivery Years

- MAAC Region
- ComEd, AEP, Dayton, APS, and Duquesne
- Dominion
- Eastern MAAC
- Southwestern MAAC
- Western MAAC (Penelec, MetEd, PPL)
- Penelec
- ComEd
- AEP
- Dayton
- Duquesne
- APS

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- AE
- BG&E
- DPL
- PECO
- PEPCO
- PSE&G
- JCP&L
- MetEd
- PPL
- PSEG northern region (north of Linden substation); and
- DPL southern region (south of Chesapeake and Delaware Canal).

#### **17.4 Transition Period Variable Resource Requirement Curves**

During the Transition Period, the Office of the Interconnection shall post on the PJM internet site the Variable Resource Requirement Curves that will apply for each Delivery Year no later than one month prior to the conduct of the Base Residual Auction for such Delivery Year.

#### **17.5 Market Mitigation**

The provisions of Section 6 of this Attachment shall apply to all Reliability Pricing Model Auctions conducted during the Transition Period; provided, however, that during the Transition Period, as to a Capacity Market Seller that was a signatory to that certain Settlement Agreement dated September 29, 2006 in FERC Docket No. ER05-1410 and ER05-148, or any Affiliate of such a signatory, and that owns or controls no more than 10,000 megawatts of Unforced Capacity in the PJM Region, the otherwise applicable Market Seller Offer Cap provided in Section 6 shall be increased by up to the following amounts in the following years for any Sell Offer submitted by such a seller in any Unconstrained LDA Group, with respect to no more than 3,000 megawatts of such Unforced Capacity:

- (a) \$10/MW-day for the 2007-2008 Delivery Year;
- (b) \$10/MW-day for the 2008-2009 Delivery Year; and
- (c) \$7.50/MW-day for the 2009-2010 Delivery Year;

For purposes of this provision, the 10,000 megawatt maximum shall apply separately to a Capacity Market Seller's resources subject to state rate-based regulation and resources that are not subject to state rate-based regulation.

#### **17.6 Performance Assessment**

Within six months after the end of the fourth Delivery Year, the Office of the Interconnection shall prepare, provide to Members, and file with FERC an assessment of the performance of the Reliability Pricing Model.

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

**Attachment D**  
**PJM Tariff Revisions**  
**(Redline Version)**

## **Tariff Revisions**

## **Redline Version**

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Sixth Revised Volume No. 1

Fifth Revised Sheet No. 33  
Superseding Second Revised Second Revised Sheet No. 33

**I. COMMON SERVICE PROVISIONS**

**1 Definitions**

- 1.0A Affected System:** An electric system other than the Transmission Provider's Transmission System that may be affected by a proposed interconnection.
- 1.0B Affected System Operator:** An entity that operates an Affected System or, if the Affected System is under the operational control of an independent system operator or a regional transmission organization, such independent entity.
- 1.1 Ancillary Services:** Those services that are necessary to support the transmission of capacity and energy from resources to loads while maintaining reliable operation of the Transmission Provider's Transmission System in accordance with Good Utility Practice.
- 1.2 Annual Transmission Costs:** The total annual cost of the Transmission System for purposes of Network Integration Transmission Service shall be the amount specified in Attachment H for each Zone until amended by the applicable Transmission Owner or modified by the Commission.
- 1.2A Applicable Regional Reliability Council:** The reliability council for the region in which a Network Customer, Transmission Customer, Interconnection Customer, or Transmission Owner operates.
- 1.3 Application:** A request by an Eligible Customer for transmission service pursuant to the provisions of the Tariff.
- 1.3A Attachment Facilities:** The facilities necessary to physically connect a Customer Facility to the Transmission System or interconnected distribution facilities.
- 1.3B Behind The Meter Generation:** Behind The Meter Generation refers to a generation unit that delivers energy to load without using the Transmission System or any distribution facilities (unless the entity that owns or leases the distribution facilities has consented to such use of the distribution facilities and such consent has been demonstrated to the satisfaction of the Office of the Interconnection); provided, however, that Behind The Meter Generation does not include (i) at any time, any portion of such generating unit's capacity that is designated as a Generation Capacity Resource; or (ii) in an hour, any portion of the output of such generating unit[s] that is sold to another entity for consumption at another electrical location or into the PJM Interchange Energy Market.

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- 1.3BB Black Start Service:** Black Start Service is the capability of generating units to start without an outside electrical supply or the demonstrated ability of a generating unit with a high operating factor (subject to Transmission Provider concurrence) to automatically remain operating at reduced levels when disconnected from the grid.
- 1.3C Capacity Interconnection Rights:** The rights to input generation as a Generation Capacity Resource into the Transmission System at the Point of Interconnection where the generating facilities connect to the Transmission System.
- 1.3D Capacity Resource:** ~~The net capacity from owned or contracted for generating facilities which are accredited pursuant to the procedures set forth~~ Shall have the meaning provided in the Reliability Assurance Agreement ~~or the Reliability Assurance Agreement South.~~
- 1.3E Capacity Transmission Injection Rights:** The rights to schedule energy and capacity deliveries at a Point of Interconnection (as defined in Section 50.44) of a Merchant Transmission Facility with the Transmission System. Capacity Transmission Injection Rights may be awarded only to a Merchant D.C. Transmission Facility and/or Controllable A.C. Merchant Transmission Facilities that connects the Transmission System to another control area. Deliveries scheduled using Capacity Transmission Injection Rights have rights similar to those under Firm Point-to-Point Transmission Service or, if coupled with a generating unit external to the PJM

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- 36.1.1 Interconnection Services:** Generation Interconnection Customers may request either of two forms of Interconnection Service, i.e., interconnection as a Capacity Resource or as an Energy Resource. Energy Resource status allows the generator to participate in the PJM Interchange Energy Market pursuant to the PJM Operating Agreement. Capacity Resource status allows the generator to participate in the PJM Interchange Energy Market to be utilized by load-serving entities in the PJM Region to meet capacity obligations imposed under the Reliability Assurance Agreement and/or to be designated as a Network Resource under Part III. Capacity Resources also may participate in ~~PJM Capacity Credit Markets~~ Reliability Pricing Model Auctions and in Ancillary Services markets pursuant to the PJM Tariff or the Operating Agreement. Capacity Resource status is based on providing sufficient transmission capability to ensure deliverability of generator output to the aggregate PJM Network Load and to satisfy various contingency criteria established by the Applicable Regional Reliability Council in which the generator is located. Specific tests performed during the Generation Interconnection Feasibility Study and later System Impact Study will identify those upgrades required to satisfy the contingency criteria applicable at the generator's location.
- 36.1.2 No Applicability to Transmission Service:** Nothing in this Part IV shall constitute a request for transmission service, or confer upon a Generation Interconnection Customer any right to receive transmission service, under Part II or Part III.
- 36.1.3 Acknowledgement of Generation Interconnection Request:** The Transmission Provider shall acknowledge receipt of the Generation Interconnection Request (electronically when available to all parties, otherwise written) within five (5) business days after receipt of the request and shall attach a copy of the received Generation Interconnection Request to the acknowledgement.
- 36.1.4 Deficiencies in Interconnection Request:** A Generation Interconnection Request will not be considered a valid request until all information required under Section 36.1 has been received by the Transmission Provider. If a Generation Interconnection Request fails to meet the requirements set forth in Section 36.1, the Transmission Provider shall so notify the Generation Interconnection Customer (electronically when available to all parties, otherwise written) within five (5) business days of receipt of the initial Generation Interconnection Request. Such notice shall explain that the Generation Interconnection Request does not constitute a valid request and the reasons for such failure to meet the applicable requirements. Generation Interconnection Customer shall provide the additional information that Transmission Provider's notice identifies as needed to constitute a valid request within ten (10) business days after receipt of such notice. Upon timely correction of the

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## Subpart D – INTERCONNECTION RIGHTS

### 45 Capacity Interconnection Rights

**45.1 Purpose:** Capacity Interconnection Rights shall entitle the holder to deliver the output of a Capacity Resource at the bus where the Capacity Resource interconnects to the Transmission System. The Transmission Provider shall plan the enhancement and expansion of the Transmission System in accordance with Schedule 6 of the Operating Agreement such that the holder of Capacity Interconnection Rights can integrate its Capacity Resources in a manner comparable to that in which each Transmission Owner integrates its Capacity Resources to serve its Native Load customers.

**45.2 Receipt of Capacity Interconnection Rights:** Generation accredited under the Reliability Assurance Agreement, ~~the Reliability Assurance Agreement West, or the Reliability Assurance Agreement South~~ as a Capacity Resource prior to the original effective date of this Part IV shall have Capacity Interconnection Rights commensurate with the size in megawatts of the accredited generation. When a Generation Interconnection Customer's generation is accredited as a Capacity Resource, the Generation Interconnection Customer also shall receive Capacity Interconnection Rights commensurate with the size in megawatts of the generation accredited as a Capacity Resource. Pursuant to applicable terms of Schedule 10 of the Reliability Assurance Agreement, Reliability Assurance Agreement-South or of the Reliability Assurance Agreement-West, a Transmission Interconnection Customer may combine Incremental Deliverability Rights associated with Merchant Transmission Facilities with generation capacity that is not otherwise accredited as a Capacity Resource for the purposes of obtaining accreditation of such generation as a Capacity Resource and associated Capacity Interconnection Rights.

### 45.3 Loss of Capacity Interconnection Rights:

**45.3.1 Operational Standards:** To retain Capacity Interconnection Rights, the generating resource associated with the rights must operate or be capable of operating at the capacity level associated with the rights. Operational capability shall be established consistent with Schedule 9 of the Reliability Assurance Agreement, the Reliability Assurance Agreement-South or the Reliability Assurance Agreement-West and the PJM Manuals. Generating resources that meet these operational standards shall retain their Capacity Interconnection Rights regardless of whether they are available as a Capacity Resource or are making sales outside the PJM Region.

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Sixth Revised Sheet No. 218  
 Superseding First Revised Third Revised Sheet No. 218

## 110 Permanent Capacity Resource Additions Of 20 MW Or Less

This section describes procedures related to the submission and processing of Generation Interconnection Requests related to new generation resources of 20 MW or less or the increase in capability, by 20 MW or less over any period of 24 consecutive months, of an existing generation resource, for which Capacity Interconnection Rights are to be granted. Such resources may participate in the PJM energy and capacity markets and may, therefore, be used by load serving entities to meet capacity obligations imposed under the PJM Reliability Assurance Agreement or the Reliability Assurance Agreement-South. These procedures apply to generation resources which, when connected to the system, are expected to remain connected to the system for the normal life span of such a generation resource. These procedures do not apply to resources that are specifically being connected to the system temporarily, with the expectation that they will later be removed.

### 110.1 Application

The Interconnection Customer desiring the interconnection of a new Generation Capacity Resource of 20 MW or less or the increase in capacity, by 20 MW or less, of an existing Generation Capacity Resource, must submit a completed Attachment N – Form of Generation Interconnection Feasibility Study Agreement. Attachment N of the PJM Tariff may be found on the PJM web site at [www.pjm.com/geninter/geninter.html](http://www.pjm.com/geninter/geninter.html) and must be submitted to Transmission Provider.

All requirements related to the submission, for a larger resource, of an Attachment N application must be satisfied for a capacity addition of 20 MW or less, except that the non-refundable \$10,000 deposit requirement is waived. In submitting the Attachment N application, the Interconnection Customer may strike out and initial all references to the non-refundable \$10,000 deposit. While the deposit requirement is waived, the Interconnection Customer is responsible for all costs associated with the processing of the request and the performance of the Feasibility Study related to the request and will be billed for such costs following the completion of the Feasibility Study.

Documentation of site control must be submitted, for small resource additions, with the completed Attachment N. Site control may be demonstrated through an exclusive option to purchase the property on which the generation project is to be developed, a property deed, or a range of tax or corporate documents that identify property ownership. Site control must either be in the name of the party submitting the generation interconnection request or documentation must be provided establishing the business relationship between the project developer and the party having site control.

All information required in the completed Attachment N related to the generating project site, point of interconnection, and generating unit size and configuration must be provided.

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Third Revised Sheet No. 218A  
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Once it has been established that the requirements related to the submission of the Attachment N application have been met, the Generation Interconnection Request will be entered into the then current Interconnection Queue for analysis. The generation addition project will be identified in the Interconnection Queue on the PJM web site by the size of the capacity addition and by its proposed Point of Interconnection on the PJM system.

## 110.2 Feasibility Study

Feasibility Study analyses can generally be expedited by examining a limited contingency set that focuses on the impact of the small capacity addition on contingency limits in the vicinity of the Generation Capacity Resource. Linear analysis tools are used to evaluate the impact of a small capacity addition with respect to compliance with Applicable Regional Reliability Council contingency criteria. Generally, small capacity additions will have very limited and isolated impacts on system facilities. If criteria violations are observed, further AC testing is required.

Short circuit calculations are performed for small resource additions to ensure that circuit breaker capabilities are not exceeded.

Once the Feasibility Study is completed, a Feasibility Study report will be prepared and transmitted to the Interconnection Customer along with a System Impact Study Agreement. In order to remain in the Interconnection Queue, the Interconnection Customer must return the executed System Impact Study Agreement within 30 days, along with documents demonstrating that an initial air permit application has been filed, if required. The deposit associated with the System Impact Study Agreement shall be equal to the estimated cost of the System Impact Study, as specified by the Transmission Provider. The Interconnection Customer is responsible for all actual costs associated with the performance of the System Impact Study related to the request and will be billed for such costs following the completion of the System Impact Study, as necessary. Transmission Provider shall retain the deposit until the settlement of the final invoice for the System Impact Study, provided however, in the event that the total actual cost of the System Impact Study does not exceed the total estimated cost of the System Impact Study then the deposit may be applied for payment of invoices for the cost of the study. In some cases, where no network impacts are identified and there are no other projects in the vicinity of the small resource addition, the System Impact Study may not be required and the project will proceed directly to the Facilities Study.

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### 110.3 System Impact Study

As with the Feasibility Study, expedited analysis procedures will be utilized, where appropriate, in the course of the System Impact Study.

Load deliverability will only be evaluated for sub-areas where margins are known to be limited. In most cases, the addition of small Generation Capacity Resources will improve local deliverability margins. However, if sub-area margins are known to be limited, the impact of the new resource will be evaluated based on its impact on the contingencies limiting emergency imports to the sub-area.

Generation deliverability is tested using linear analysis tools. In most cases, small capacity additions will have no impact on generator deliverability in an area. If violations are observed, more detailed testing using AC tools is required.

Stability analysis is generally not performed for small capacity additions. If the capacity of an existing generating resource is increased by 20 MW or less, stability will be evaluated for critical contingencies only if existing stability margins are small. New Generation Capacity Resources of 20 MW or less will only be evaluated if they are connected at a location where stability margins associated with existing resources are small.

Short circuit calculations are performed during the System Impact Study for small resource additions, taking into consideration all elements of the regional plan, to ensure that circuit breaker capabilities are not exceeded.

Once the System Impact Study is completed, a System Impact Study report will be prepared and transmitted to the Interconnection Customer along with a Facilities Study Agreement. In order to remain in the Interconnection Queue, the Interconnection Customer must return the executed Facilities Study Agreement within 30 days, along with a deposit in the amount of the estimated cost of the Facilities Study. The Interconnection Customer is responsible for all actual costs associated with the performance of the Facilities Study related to the request and will be billed for such costs following the completion of the Facilities Study. If no transmission system facilities are required, the Facilities Study may not be required and the project will proceed directly to the execution of an Interconnection Service Agreement.

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#### 110.4 Facilities Study

As with larger generation projects, transmission facilities design for any required Attachment Facilities, Local Upgrades and/or Network Upgrades will be performed through the execution of a Facilities Study Agreement between the Interconnection Customer and Transmission Provider. Transmission Provider may contract with consultants, including the Interconnected Transmission Owners, or contractors acting on their behalf, to perform the bulk of the activities required under the Facilities Study Agreement. In some cases, the Interconnection Customer and Transmission Provider may reach agreement allowing the Interconnection Customer to separately arrange for the design of some of the required transmission facilities. In such cases, facilities design will be reviewed, under the Facilities Study Agreement, by the Interconnected Transmission Owner.

Facilities design for small capacity additions will be expedited to the extent possible. In most cases, few or no Network Upgrades will be required for small capacity additions. Attachment Facilities, for some small capacity additions, may, in part, be elements of a "turn key" installation. In such instances, the design of "turn key" attachments will be reviewed by the Interconnected Transmission Owners or their contractors.

#### 110.5 Interconnection Service Agreement

As with larger generation projects, an Interconnection Service Agreement must be executed and filed with the FERC. The Interconnection Service Agreement identifies the obligations, on the part of the Interconnection Customer, to pay for transmission facilities required to facilitate the interconnection and the Capacity Interconnection Rights which are awarded to the Generation Capacity Resource.

In general, the execution of an Interconnection Service Agreement is no different for capacity additions of 20 MW or less than for larger Generation Capacity Resources. However, in instances where an increase of 20 MW or less to an existing Generation Capacity Resource can be put in service immediately, a modified Interconnection Service Agreement may be executed. If such an increase is expedited through the System Impact Study phase, ahead of larger projects already in the Interconnection Queue, an Interconnection Service Agreement will be executed granting interim Capacity Interconnection Rights. These interim rights will allow the capacity increase to be implemented and the resource to participate in the capacity market until studies have been completed for earlier queued resources and all related obligations have been defined. At such time, the interim rights awarded the smaller capacity addition will become dependent on the construction of any required transmission facilities and the satisfaction of any financial obligations for those facilities. If, once those obligations are defined, the smaller capacity addition desires to retain the interim Capacity Interconnection Rights, a new Interconnection Service Agreement will be executed.

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If a new Generation Capacity Resource of 20 MW or less can be quickly connected to the system, interim Capacity Interconnection Rights can be awarded, as above, through the execution of a modified Interconnection Service Agreement.

#### **110.6 Other Requirements**

Requirements and application procedures related to PJM membership are specified in the PJM Manuals. Additionally, the PJM Manuals detail a range of operational requirements for generation owners related to, among other things, the need for control center facilities and modeling in the PJM Energy Management System and unit commitment tools.

### **111 Permanent Energy Resource Additions Of 20 MW Or Less But Greater Than 2MW**

This section describes procedures related to the submission and processing of requests related to the interconnection of new generation resources of 20 MW or less but greater than 2 MW or the increase in capability of 20 MW or less but greater than 2 MW of an existing generation resource, for which Capacity Interconnection Rights will not be granted. Such resources may participate in the PJM energy markets, but not in the PJM capacity markets. They may, therefore, not be used by load serving entities to meet capacity obligations imposed under the PJM Reliability Assurance Agreement or the Reliability Assurance Agreement-South. These procedures apply to generation resources which, when connected to the system, are expected to remain connected to the system for the normal life span of such a generation resource. These procedures do not apply to resources that are specifically being connected to the system temporarily, with the expectation that they will later be removed.

#### **111.1 Application**

The Interconnection Customer desiring the interconnection of a new Energy Resource of 20 MW or less but greater than 2 MW or the increase in capability, by 20 MW or less but greater than 2 MW of an existing resource, must submit a completed Attachment N -- Form of Generation Interconnection Feasibility Study Agreement. Attachment N of the PJM Tariff may be found on the PJM web site at [www.pjm.com/geninter/geninter.html](http://www.pjm.com/geninter/geninter.html) and must be submitted to Transmission Provider.

All requirements related to the submission, for a larger resource, of an Attachment N application must be satisfied for a capability addition of 20 MW or less but greater than 2 MW, except that the non-refundable deposit requirement is \$1,000, rather than \$10,000. The Interconnection Customer is responsible for all actual costs associated with the processing of the request and the performance of the Feasibility Study related to the request and will be billed for such costs following the completion of the Feasibility Study.

Once the Feasibility Study is completed, a Feasibility Study report will be prepared and transmitted to the Interconnection Customer along with a System Impact Study Agreement. In order to remain in the Interconnection Queue, the Interconnection Customer must return the executed System Impact Study Agreement within 30 days, along with documents demonstrating that an initial air permit application has been filed, if required. The deposit associated with the System Impact Study Agreement shall be equal to the estimated cost of the System Impact Study, as specified by the Transmission Provider. The Interconnection Customer is responsible for all actual costs associated with the performance of the System Impact Study related to the request and will be billed for such costs following the completion of the System Impact Study. Transmission Provider shall retain the deposit until the settlement of the final invoice for the System Impact Study, provided however, in the event that the total actual cost of the System Impact Study does not exceed the total estimated cost of the System Impact Study then the deposit may be applied for payment of invoices for the cost of the study. In some cases, where no network impacts are identified and there are no other projects in the vicinity of the small resource addition, the System Impact Study may not be required and the project will proceed directly to the Facilities Study.

### 111.3 System Impact Study

As with the Feasibility Study, expedited analysis procedures will be utilized, where appropriate, in the course of the System Impact Study.

Load deliverability and generation deliverability tests are not performed for Energy Resources.

Stability analysis is generally not performed for small capacity additions. If the capacity of an existing generating resource is increased by 20 MW or less, stability will be evaluated for critical contingencies only if existing stability margins are small. New Generation Capacity Resources of 20 MW or less will only be evaluated if they are connected at a location where stability margins associated with existing resources are small.

Short circuit calculations are performed during the System Impact Study for small resource additions, taking into consideration all elements of the regional plan, to ensure that circuit breaker capabilities are not exceeded.

Once the System Impact Study is completed, a System Impact Study report will be prepared and transmitted to the Interconnection Customer along with a Facilities Study Agreement. In order to remain in the interconnection queue, the Interconnection Customer must return the executed Facilities Study Agreement within 30 days, along with a deposit in the amount of the estimated cost of the Facilities Study. The Interconnection Customer is responsible for all actual costs associated with the performance of the Facilities Study related to the request and will be billed for such costs following the completion of the Facilities Study. If no transmission system facilities are required, the Facilities Study may not be required and the project will proceed directly to the execution of an Interconnection Service Agreement.

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Total Generation Owner Monthly Revenue Requirement is the sum of the Zonal Generation Owner Monthly Revenue Requirements for all Zones in the PJM Region.

Allocation Factor is the monthly transmission use of each Network Customer or Transmission Customer per Zone or Non-Zone, as applicable, on a megawatt basis divided by the total transmission use in the Zone or in the PJM Region, as applicable, on a megawatt basis.

For Network Customers, monthly transmission use on a megawatt basis is the sum of a Network Customer's daily values of DCPZ or DCPNZ (as those terms are defined in Section 34.1) as applicable, for all days of the month.

For Transmission Customers, monthly transmission use on a megawatt basis is the sum of the Transmission Customer's hourly amounts of Reserved Capacity in the month (not curtailed by PJM) divided by 24.

Adjustment Factor is determined as the sum of the total monthly transmission use in the PJM Region, exclusive of such use by Transmission Customers serving Non-Zone Load, divided by the total monthly transmission use in the PJM Region on a megawatt basis.

In the event that a single customer is serving load in more than one Zone, or serving Non-Zone Load as well as load in one or more Zones, or is both a Network Customer and a Transmission Customer, the Monthly Charge for such a customer shall be the sum of the Monthly Charges determined by applying the appropriate formulae set forth in this Schedule 2 for each category of service.

#### **Payment to Generation Owners**

Each month, the Transmission Provider shall pay each Generation Owner an amount equal to the Generation Owner's monthly revenue requirement as accepted or approved by the Commission. In the event a Generation Owner sells a Generation Capacity Resource(s) which is included in its current effective monthly revenue requirement accepted or approved by the Commission, payments in that Generation Owner's Zone may be allocated as agreed to by the owners of Generation Capacity Resources in that Zone. Such Generation Owners shall inform Transmission Provider of any such agreement. In the absence of agreement among such Generation Owners, the Commission, upon application, shall establish the allocation. Generation Owners shall not be eligible for payment, pursuant to this Schedule 2, of monthly revenue requirement associated with those portions of generating units designated as Behind The Meter Generation.

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## SCHEDULE 9-5

### Capacity Resource and Obligation Management Service

a) Capacity Resource and Obligation Management Service comprises the activities of PJM associated with (i) assuring that customers have arranged for sufficient generating capacity to meet their ~~installed-unforced~~ capacity obligations under the Reliability Assurance Agreement ("RAA"), ~~the Reliability Assurance Agreement South ("RAA-South") and the Reliability Assurance Agreement West ("RAA-West")~~; (ii) processing Network Integration Transmission Service; ~~and~~ (iii) administering the ~~capacity-credit market in~~ Reliability Pricing Model auctions for the PJM Region; and (iv) administering or providing technical support for the ~~RAA-South and RAA-West~~ (as delegated to PJM under the RAA, ~~RAA-South and RAA-West~~), including, but not limited to, long-term load forecasting, studies to establish reserve requirements, and the determination of each Load-Serving Entity's capacity obligations. PJM's eCapacity Internet-based tool enables many of these functions. PJM provides this service to Load-Serving Entities and to owners of Capacity Resources; as such terms are defined in the ~~RAA, RAA-South and RAA-West~~.

b) PJM will charge each Load-Serving Entity in the PJM Region each month a charge equal to the Capacity Resource and Obligation Management Service Rate stated below times the summation for each day of such month of the ~~Accounted-For-Daily Unforced Capacity~~ Obligation of such user, as determined for each such day pursuant to ~~Schedule 7-8 or 8.1 of the RAA, Schedule 7 of the RAA-South or Schedule 7 of the RAA-West~~; ~~provided, however, that in calculating such user's Accounted-For Obligation for purposes of this Schedule 9-5, such user's ALM load credits shall not be deducted from such user's diversity factor-adjusted summer peak, as would otherwise be calculated under the formula set forth in such Schedule 7.~~

c) In addition to any charge under paragraph (b), PJM will charge each ~~month, each entity that included in an FRR Capacity Plan, self-scheduled, or sold and cleared, in a Reliability Pricing Model Auction, owner of a~~ Capacity Resources committed to serve load for such each month, a charge equal to the Capacity Resource and Obligation Management Service Rate stated below times such ~~owner's entity's~~ total share, in MWs, of the Unforced Capacity of all Capacity Resources ~~owned in whole or in part cleared or self-scheduled (including through an FRR Capacity Plan) by such owner entity, for commitment to serve load during such month where such owner's share of the Unforced Capacity of each Capacity Resource partially owned by such owner shall be in proportion to such owner's percentage ownership interest in such Capacity Resource, and where the Unforced Capacity of each Capacity Resource shall be the Unforced Capacity most recently determined in accordance with the RAA, RAA-South or RAA-West for such Capacity Resource, for each day of the month for which the charge under this paragraph (c) is being calculated.~~

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## **B. Transmission Congestion Credits.**

### **1. General.**

Financial Transmission Rights may be acquired by purchase in the Financial Transmission Rights auctions or in the secondary market provided for in Section 7 of the Appendix to this Attachment K. The Office of the Interconnection will post information on the OASIS regarding FTR auction results, FTR transfers, including which FTRs have been transferred, the amount of the transfer (MW), the duration of the transfer and the identity of the buyer and seller.

For a new PJM zone, each Transmission Customer purchasing Firm Point-to-Point Service, each Network Customer, with respect to its reservation of firm transmission service for deliveries from Network Resources to Network Load, and each Transmission Owner with respect to its reservation of firm transmission service for the delivery of energy from Generation Capacity Resources to Native Load Customers (any of the foregoing being referred to as a "Firm Transmission User"), shall receive Financial Transmission Rights ("FTRs") corresponding to points of receipt and delivery designated for their firm uses of the Transmission System. Such FTRs shall remain in effect until the first annual allocation of Auction Revenue Rights to occur after the integration of such new PJM zone into the PJM Interchange Energy Market.

Each holder of an FTR shall receive the total Transmission Congestion Credits determined in accordance with section B(2) of this Attachment.

### **2. Determination of Credit.**

(a) **Overview.** For each hour with respect to which the Transmission Provider receives payments of Transmission Congestion Charges, determined in accordance with section A of this Attachment, Transmission Congestion Credits shall be allocated to the holders of Financial Transmission Rights. As explained in subsection (b), the Financial Transmission Rights are associated with the points on the Transmission System between which the Firm Transmission User to whom the FTR was originally issued has arranged for the firm transmission of electric energy, whether on a network or point-to-point basis. Holders of FTRs receive credits attributable to the difference, if any, between Locational Marginal Prices at the Point or Points of Receipt and the Point or Points of Delivery associated with the Financial Transmission Rights. As explained in subsections (b) and (c), each FTR holder shares in Transmission Congestion Credits to the extent it holds Financial Transmission Rights between the Point or Points of Receipt and the Point or Points of Delivery at which congestion is experienced in a particular hour. Distribution of credits in this manner ensures that each FTR holder will not incur energy costs that are greater than the costs of energy from the generation resources associated with the FTR holder's Financial Transmission Rights. Target allocations of Transmission Congestion Credits to holders of Financial Transmission Rights are calculated in accordance with subsection (c) and Transmission Congestion Credits are distributed in accordance with that allocation, as described in subsection (d).

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### C. Virtual Bid Screening Process

If it is determined that Virtual Bid Screening is required for a market participant, the screening process will be conducted in the PJM eMKT web interface. The process will automatically reject all virtual bids and offers submitted by the PJM market participant if the participant's Credit Available for Virtual Bidding is exceeded by the **Virtual Credit Exposure** that is calculated based on the participant's submitted bids and offers as described below.

A Participant/Member's Virtual Credit Exposure will be calculated on a daily basis for all virtual bids submitted by the market participant for the next operating day using the following equation:

Virtual Credit Exposure = the lesser of:

- (i) ((total MWh bid or offered, whichever is greater, hourly at each node) x Nodal Reference Price x 2 days) summed over all nodes and all hours; or
- (ii) (a) ((the total MWh bid or offered, whichever is greater, hourly at each node) x the Nodal Reference Price x 1 day) summed over all nodes and all hours; plus (b) ((the difference between the total bid MWh cleared and total offered MWh cleared hourly at each node) x Nodal Reference Price) summed over all nodes and all hours for the previous three cleared day-ahead markets.

A Member/Participant's Credit Available for Virtual Bidding will be the Member/Participant's Working Credit Limit less any unpaid billed and unbilled amounts owed to PJM, plus any current month unbilled amounts owed by PJM to the Member/Participant, less any credit required for FTR or other credit requirement determinants as defined in this Policy.

Each PJM Market Participant that is identified as requiring Virtual Bid Screening based on bidding history will be screened in the following manner: If the participant's Virtual Credit Exposure exceeds its Credit Available for Virtual Bidding, the Market Participant will be notified via an eMKT error message, and the submitted bids will be rejected. Upon such notification, the Market Participant may alter its virtual bids and offers so that its Virtual Credit Exposure does not exceed its Credit Available for Virtual Bidding, and may resubmit them. Bids may be submitted in one or more groups during a day. If one or more groups of bids is submitted and accepted, and a subsequent group of submitted bids causes the total submitted bids to exceed the Virtual Credit Exposure, then only that subsequent set of bids will be rejected. Previously accepted bids will not be affected, though the Market Participant may choose to withdraw them voluntarily.

### IV. RELIABILITY PRICING MODEL AUCTION CREDIT REQUIREMENTS

Settlement during any Delivery Year of cleared positions resulting or expected to result from any Reliability Pricing Model Auction shall be included as appropriate in Peak Market Activity, and the provisions of this Attachment Q shall apply to any such activity and obligations arising therefrom. In addition, the provisions of this section shall apply to any entity seeking to participate in any RPM Auction, to address credit risks unique to such auctions.

### A. Applicability

A Market Seller seeking to submit a Sell Offer in any Reliability Pricing Model Auction based on any Capacity Resource for which there is a materially increased risk of non-performance must satisfy the credit requirement specified in section IV.B before submitting such Sell Offer. Credit must be maintained until such risk of non-performance is substantially eliminated, but may be reduced commensurate with the reduction in such risk, as set forth in Section IV.C.

For purposes of this provision, a resource for which there is a materially increased risk of non-performance shall mean: (i) a Planned Generation Capacity Resource; (ii) a Planned Demand Resource; (iii) a Qualifying Transmission Upgrade; or (iv) an existing Generation Capacity Resource located outside the PJM Region that at the time it is submitted in a Sell Offer has not secured firm transmission service to the border of the PJM Region sufficient to satisfy the deliverability requirements of the Reliability Assurance Agreement.

### B. Reliability Pricing Model Auction Credit Requirement

For any resource specified in Section IV.A, the credit requirement shall be the RPM Auction Credit Rate, as provided in Section IV.D, times the megawatts to be offered for sale from such resource in a Reliability Pricing Model Auction. As set forth in Section IV.D, the Auction Credit Requirement shall be determined separately for each Delivery Year. The RPM Auction Credit Requirement for each Market Seller shall be the sum of the credit requirements for all such resources to be offered by such Market Seller in the auction.

### C. Reduction in Credit Requirement

The RPM Auction Credit Requirement for a Market Seller will be reduced for any Delivery Year to the extent less than all of such Market Seller's offers clear in the Base Residual Auction or any Incremental Auction for such Delivery Year. Such reduction shall be proportional to the quantity, in megawatts, that failed to clear in such Delivery Year. As specified in Section IV.D, the RPM Auction Credit Rate also may be reduced under certain circumstances after the auction has closed.

In addition, the RPM Auction Credit Requirement for a Participant for any given Delivery Year shall be reduced periodically, provided the Participant successfully meets progress milestones that reduce the risk of non-performance, as follows:

- a. For Planned Demand Resources, the RPM Auction Credit Requirement will be reduced in direct proportion to the megawatts of such Demand Resource that the Resource Provider qualifies as a Capacity Resource, in accordance with the procedures established under the Reliability Assurance Agreement.

- b. For existing Generation Capacity Resources located outside the PJM Region that have not secured sufficient firm transmission to the border of the PJM Region prior to the auction in which such resource is first offered, the RPM Credit Requirement shall be reduced in direct proportion to the megawatts of firm transmission service secured by the Market Seller that qualify such resource under the deliverability requirements of the Reliability Assurance Agreement.
- c. For Planned Generation Capacity Resources, the RPM Credit Requirement shall be reduced to 50% of the amount calculated under Section IV.B beginning as of the effective date of an Interconnection Service Agreement, and shall be reduced to zero on the date of commencement of Interconnection Service.
- d. For Qualifying Transmission Upgrades, the RPM Credit Requirement shall be reduced to zero on the date the Qualifying Transmission Upgrade is placed in service.

#### D. RPM Auction Credit Rate

Market Sellers offering resources into a Reliability Pricing Model Auction for any Delivery Year will incur a forward financial obligation to PJM if: (i) the offered resource clears in such auction; (ii) the Market Seller subsequently becomes deficient in its ability to provide such resource; (iii) the Market Seller participates in a First or Third Incremental Auction to obtain replacement resources for such Season Delivery Year to meet the obligation for which the Market Seller is deficient; and (iv) the Capacity Resource Clearing Price in such Incremental Auction exceeds the Capacity Resource Clearing Price the resource was to receive as a result of clearing the prior auction.

As set forth in the PJM Manuals, a separate Auction Credit Rate shall be calculated for each Delivery year prior to each Reliability Pricing Model Auction for such Delivery Year, as follows:

- a. For a Base Residual Auction for a Delivery Year, the Auction Credit Rate for each Season shall be the marginal value of system capacity determined in the Base Residual Auction for the prior Delivery Year, times the number of days in such prior Delivery Year, times the Maximum Price Exposure factor described below; provided, however, that for the Delivery Year addressed in the first RPM Base Residual Auction, the marginal value of system capacity used in this formula shall be determined analytically through simulation programming, and shall be posted prior to the auction.

For any Incremental Auction for a Delivery Year, the Auction Credit Rate shall be the marginal value of system capacity determined in the Base Residual Auction for such Delivery Year, times the number of days in such Delivery Year, times the Maximum Price Exposure factor described below.

b. Subsequent to any auction, the Auction Credit Rate used for ongoing credit requirements for supply committed in such auction shall be the lesser of the Auction Credit Rate established prior to offering into the auction, and the actual marginal value of system capacity (times the number of days in such Delivery Year, times the Maximum Price Exposure factor described below) that was posted for that auction for all of a supplier's offers which cleared in that auction.

c. The Maximum Price Exposure factor will be calculated as follows:

1. Prior to the date that three Incremental Auctions for a given Delivery Year(s) have been conducted, the Maximum Price Exposure factor will be the maximum expected two-year percent price increase with a 90% confidence based on PJM's market simulations.
2. After three Incremental Auctions have been conducted for any Delivery Year(s), but before six such auctions have been conducted, the Maximum Price Exposure factor will be calculated initially in the same manner as for the first three Incremental Auctions, but shall be reduced to the extent the greatest percent price increase for a given Delivery Year (as measured between any Incremental Auction and its associated Base Residual Auction) was less than the value initially calculated, and shall be increased to the extent the second greatest percent price increase for a given Delivery Year (as measured between any Incremental Auction and its associated Base Residual Auction) was greater than the value initially calculated.
3. After six Incremental Auctions have been conducted for any Delivery Year(s), the Maximum Price Exposure factor for such Delivery Year will be the second largest percent price increase (as measured between any Incremental Auction and its associated Base Residual Auction) for any Incremental Auctions for such Delivery Year conducted during the then-current calendar year or during any of the three preceding calendar years.

#### E. Forms of Financial Security

In addition to the forms of credit specified elsewhere in this Attachment Q, the following form of unsecured credit shall be available to Market Sellers, but solely for purposes of satisfying RPM Auction Credit Requirements. If a supplier has a history of being a net seller into PJM markets, on average, over the past 12 months, then PJM will count as available unsecured credit twice the average of that participant's total net monthly PJM bills over the past 12 months.

#### **IV. FORMS OF FINANCIAL SECURITY**

Applicants/Participants/Members that provide Financial Security must provide the security in a PJM approved form and amount according to the guidelines below.

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Acceptable forms of Financial Security include cash deposits and letters of credit.

#### **IV.I FINANCIAL TRANSMISSION RIGHT AUCTIONS**

##### **A. SCOPE.**

Credit shall be required for all FTR auction products. The foregoing notwithstanding, bids from Established Monthly FTR Market Participants for single calendar month FTRs covering the month beginning immediately after a monthly FTR auction will not be included in their FTR credit requirement(s).

##### **A. Total FTR Credit Requirement.**

PJM shall calculate a total FTR credit requirement for each Market Participant equal to the sum of its Auction Credit Requirements for all FTR auctions. Market Participants in FTR Auctions shall be required to maintain this minimum amount of credit with PJM in addition to any other credit requirements the Market Participant may have pursuant to the Tariff.

##### **C. Auction Credit Requirement.**

For each FTR auction, PJM shall calculate an Auction Credit Requirement for each Market Participant. If a set of submitted bids would ever cause a Market Participant's Auction Credit Requirement to exceed the Market Participant's auction credit limit, then that set of Submitted bids shall be rejected.

In calculating a Market Participant's Auction Credit Requirement, self-scheduled FTR's shall have a zero credit requirement. Positive FTR bids for which the bidder holds matching ARRs will not be counted in the bid total. In addition, the Auction Credit Requirement will be reduced in accordance with the credit release schedule set forth in section IV.E of this Credit Policy.

##### **A. Total FTR Credit Limit.**

Market Participants shall establish a total FTR credit limit prior to bidding in an FTR auction, provided that this requirement shall not apply if an Established Monthly FTR Market Participant exclusively bids on single calendar month FTRs covering the month beginning immediately after a monthly FTR auction.

A total FTR credit limit can be established by utilizing the unused portion of a Market Participant's currently established Unsecured Credit limit at PJM provided the Market Participant specifically makes such a request in writing to the PJM Treasury Department. FTR credit can also be established or enhanced by the Market Participant providing additional Financial Security or Corporate Guaranty, of a type acceptable under this Credit Policy.

- The letter of credit must clearly state the full names of the "Issuer", "Account Party" and "Beneficiary" (PJM), the dollar amount available for drawings, and shall specify that funds will be disbursed upon presentation of the drawing certificate in accordance with the instructions stated in the letter of credit. The letter of credit should specify any statement that is required to be on the drawing certificate, and any other terms and conditions that apply to such drawings.
- The PJM Credit Application contains an acceptable form of a letter of credit that should be utilized by an Applicant/Participant/Member choosing to meet its Financial Security requirement with a letter of credit. If the letter of credit varies in any way from the PJM format, it must first be reviewed and approved by PJM. All costs associated with obtaining and maintaining a letter of credit and meeting the policy provisions are the responsibility of the Applicant /Participant/Member
- PJM may accept a letter of credit from a Financial Institution that does not meet the credit standards of this Policy provided that the letter of credit has third-party support, in a form acceptable to PJM, from a financial institution that does meet the credit standards of this Policy.

## | VI. EVENTS OF DEFAULT

Failure to comply with this policy (except for the responsibility of an Applicant/Participant/Member to notify PJM of a Material change) shall be considered an event of default. Pursuant to §15.1.3(a) of the **Operating Agreement of PJM Interconnection, L.L.C.** and §1.7.3 of the **PJM Open Access Transmission Tariff**, non-compliance with the PJM Credit Policy is an event of default under those respective Agreements. In event of default under this Credit Policy or one or more of the Agreements, PJM will take such actions as may be required or permitted under the Agreements, including but not limited to the termination of Participant/Member's ongoing Transmission Service and participation in PJM Markets. A Participant/Member will have three (3) Business Days from notification of policy breach to remedy the situation in a manner deemed acceptable by PJM. PJM has the right to liquidate all or a portion of a Participant/Member's Financial Security at its discretion to satisfy Total Net Obligations to PJM in the event of default under this Credit Policy or one or more of the Agreements.

## | VII. DEFINITIONS:

**Affiliate** – Affiliate is defined in the PJM Operating Agreement, §1.2.

**Agreements** – The Operating Agreement of PJM Interconnection, L.L.C., the PJM Open Access Transmission Tariff, the **Reliability Assurance Agreement**, the **Reliability**

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**Individual FTR Credit Requirements** – Shall mean the bid price for the FTR less the Revenue Offset for the FTR. If the Individual FTR Credit Requirement for an FTR results in a value less than zero, that Individual FTR Credit Requirement shall be set to zero.

**Market Participant** – shall have the meaning provided in the Operating Agreement.

**Material** - For these purposes, material is defined in §I.B.3, Material Changes. For the purposes herein, the use of the term "material" is not necessarily synonymous with use of the term by governmental agencies and regulatory bodies.

**Member** – shall have the meaning provided in the Operating Agreement.

**Net Obligation** – The amount owed to PJM for purchases from the PJM Markets, Transmission Service, (under both Part II and Part III of the O.A.T.T.), and other services pursuant to the Agreements, after applying a deduction for amounts owed to a Participant by PJM as it pertains to monthly market activity. ~~In addition, aggregate amounts that will be owed to PJM in the future for Capacity purchases within the PJM Capacity markets will be added to this figure.~~ Should other markets be formed such that Participants may incur future **Obligations** in those markets, then the aggregate amount of those Obligations will also be added to the Net Obligation.

**Nodal Reference Price** – A probabilistic (97%) maximum price differential historically experienced between day-ahead and real-time market prices at a given location as defined in this policy. This number is used in Virtual Bid Screening.

**Obligation** – All amounts owed to PJM for purchases from the PJM Markets, Transmission Service, (under both Part II and Part III of the O.A.T.T.), and other services pursuant to the Agreements. In addition, aggregate amounts that will be owed to PJM in the future for Capacity purchases within the PJM Capacity markets will be added to this

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## **ATTACHMENT ~~Y~~DD**

**[Note: redlining in Attachment DD shows revisions against Attachment Y in PJM's August 31, 2005 Filing in Docket Nos. ER05-1410 and EL05-148]**

### **Reliability Pricing Model**

#### **1. INTRODUCTION**

This Attachment sets forth the terms and conditions governing the Reliability Pricing Model for the PJM Region. As more fully set forth in this Attachment and the PJM Manuals, and in conjunction with the Reliability Assurance Agreement, the Reliability Pricing Model provides:

- (a) support for LSEs in satisfying Daily Unforced Capacity Obligations for future Delivery Years through Self Supply of Capacity Resources;
- (b) a competitive auction mechanism to secure the forward commitment of additional Capacity Resources and Qualifying Transmission Upgrades as necessary to satisfy the portion of LSEs' Unforced Capacity Obligations not satisfied through Self-Supply, in order to ensure the reliability of the PJM Region for future Delivery Years;
- (c) long-term pricing signals for the development of Capacity Resources, including demand resources and planned generation resources, to ensure the reliability of the PJM Region;
- (d) recognition for the locational ~~and operational reliability~~ benefits of Capacity Resources;
- (e) deficiency charges to ensure progress toward, and fulfillment of, forward commitments by demand and generation resources to satisfy capacity ~~and operational reliability~~ requirements;
- (f) measures to identify and mitigate capacity market structure deficiencies; and
- (g) a Reliability Backstop mechanism to ensure that sufficient generation, transmission and demand response solutions will be available to preserve system reliability.

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## 2. DEFINITIONS

Definitions specific to this Attachment are set forth below. In addition, any capitalized terms used in this Attachment not defined herein shall have the meaning given to such terms elsewhere in this Tariff or in the RAA. References to section numbers in this Attachment ~~Y-DD~~ refer to sections of this attachment, unless otherwise specified.

### 2.1 Annual Revenue Rate

"Annual Revenue Rate" shall mean the rate employed to assess a compliance penalty charge on a Demand Resource Provider or ILR Provider under section 11.

### 2.2 Avoidable Cost Rate

"Avoidable Cost Rate" shall mean a component of the Market Seller Offer Cap calculated in accordance with section 6.

### 2.3 Base Load Generation Resource

"Base Load Generation Resource" shall mean a Generation Capacity Resource that operates at least 90 percent of the hours that it is available to operate, as determined by the Office of the Interconnection in accordance with the PJM Manuals.

### 2.4 Base Offer Segment

"Base Offer Segment" shall mean a component of a Sell Offer based on an existing Generation Capacity Resource, equal to the ~~summer net capability of the installed~~ Unforced Capacity of such resource, as determined in accordance with the PJM Manuals, minus the EFORD Offer Segment. If the Sell Offers of multiple Market Sellers are based on a single existing Generation Capacity Resource, the Base Offer Segments of such Market Sellers shall be determined pro rata based on their entitlements to Unforced Capacity from such resource.

### 2.5 Base Residual Auction

"Base Residual Auction" shall mean the auction conducted ~~four~~ three years prior to the start of the Delivery Year to secure commitments from Capacity Resource as necessary to satisfy any portion of the Unforced Capacity Obligation of the PJM Region not satisfied through Self-Supply.

### 2.6 Buy Bid

"Buy Bid" shall mean a bid to buy Capacity Resources in the First Incremental Auction or Third Incremental Auction.

### 2.7 Capacity Credit

"Capacity Credit" shall have the meaning specified in Schedule 11 of the Operating Agreement, including Capacity Credits obtained prior to the termination of such Schedule applicable to periods after the termination of such Schedule.

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## **2.8 Import CapabilityCapacity Emergency Transfer Limit**

~~“Import CapabilityCapacity Emergency Transfer Limit” or “CETL” shall have the meaning, provided in the Reliability Assurance Agreement as to an LDA, the capacity emergency transfer limit for such LDA, as determined by the Office of the Interconnection in accordance with NERC and Applicable Regional Reliability Council guidelines.~~

## **2.9 Capacity Emergency Transfer Objective**

~~“Capacity Emergency Transfer Objective” or “CETO” shall have the meaning provided in the Reliability Assurance Agreement.~~

## **2.10 Capacity Market Buyer**

“Capacity Market Buyer” shall mean a Member that submits bids to buy Capacity Resources in the First Incremental Auction or Third Incremental Auction.

## **2.11 Capacity Market Seller**

“Capacity Market Seller” shall mean a Member that owns, or has the contractual authority to control the output or load reduction capability of, a Capacity Resource, that has not transferred such authority to another entity, and that offers such resource in the Base Residual Auction or an Incremental Auction.

## **2.12 Capacity Resource**

“Capacity Resource” shall have the meaning specified in the Reliability Assurance Agreement.

## **2.13 Capacity Resource Clearing Price**

“Capacity Resource Clearing Price” shall mean the price calculated for a Capacity Resource that offered and cleared in a Base Residual Auction or Incremental Auction, in accordance with Section 5.

## **2.14 Capacity Transfer Right**

“Capacity Transfer Right” shall mean a right, allocated to LSEs serving load in a Locational Deliverability Area, to receive payments, based on the transmission import capability into such Locational Deliverability Area, that offset, in whole or in part, the charges attributable to the Locational Price Adder, if any, included in the Zonal Capacity Price calculated for a Locational Delivery Area.

## **2.15 CONE Area**

~~“CONE Area” shall mean the areas listed in section 5.10(a)(iv)(A) and any LDAs established as CONE Areas pursuant to section 5.10(a)(iv)(B).~~

## **2.16 Cost of New Entry**

“Cost of New Entry” or “CONE” shall mean the ~~real~~nominal levelized cost of a Reference Resource, as ~~quantified and stated~~determined in accordance with in section 5.

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Superseding First Revised Sheet No. 565

#### **2.17 Daily Deficiency Rate**

"Daily Deficiency Rate" shall mean the rate employed to assess certain deficiency charges under sections 7, 8, 9, or 12.

#### **2.18 Daily Unforced Capacity Obligation**

"Daily Unforced Capacity Obligation" shall mean the capacity obligation of a Load Serving Entity during the Delivery Year, determined in accordance with Schedule 8 of the Reliability Assurance Agreement.

#### **2.19 Delivery Year**

Delivery Year shall mean the Planning Period for which a Capacity Resource is committed pursuant to the auction procedures specified in Section 5.

#### **2.20 Demand Resource**

"Demand Resource" shall have the meaning specified in the Reliability Assurance Agreement.

#### **2.21 Demand Resource Factor**

"Demand Resource Factor" shall have the meaning specified in the Reliability Assurance Agreement.

#### **2.22 Demand Resource Provider**

"Demand Resource Provider" shall mean a Member that has the capability to reduce load, or that aggregates customers capable of reducing load. A Curtailment Service Provider, as defined in the Operating Agreement, may be a Demand Resource Provider, provided it qualifies its load reduction capability as a Demand Resource.

#### **2.23 EFORD**

"EFORD" shall have the meaning specified in the PJM Reliability Assurance Agreement.

#### **2.24 EFORD Offer Segment**

"EFORD Offer Segment" shall mean a component of a Sell Offer permitted under section 6 to address the potential for changes in EFORD in the time period between the conduct of an auction and the final determination of EFORD for a Delivery Year. If the Sell Offers of multiple Market Sellers are based on a single existing Generation Capacity Resource, the EFORD Offer Segments of such Market Sellers shall be determined pro rata based on their entitlements to Unforced Capacity from such resource.

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### **2.25 Equilibrium Zone**

"Equilibrium Zone" shall mean: (a) for the VRR Curve for the PJM Region, any quantity of Unforced Capacity between (i) [the PJM Region Reliability Requirement multiplied by (100% plus IRM%) divided by (100% plus IRM%)] minus the Forecast RTO ILR Obligation; and (ii) [the PJM Region Reliability Requirement multiplied by (100% plus IRM% plus 2%) divided by (100% plus IRM%)] minus the Forecast RTO ILR Obligation; and (b) for the VRR Curve for any Locational Deliverability Area, any quantity of Unforced Capacity between (i) [the LDA Reliability Requirement multiplied by (100% plus IRM%) divided by (100% plus IRM%)] minus the Forecast LDA ILR Obligation; and (ii) [the LDA Reliability Requirement multiplied by (100% plus IRM% plus 2%) divided by (100% plus IRM%)] minus the Forecast LDA ILR Obligation (if not previously accounted for in establishing the CETO for such LDA), where "Forecast LDA ILR Obligation" shall mean the sum of the Forecast Zonal ILR Obligations for all Zones in such LDA,

### **2.26 Final RTO Unforced Capacity Obligation**

"Final RTO Unforced Capacity Obligation" shall mean the capacity obligation for the PJM Region, determined in accordance with Schedule 8 of the Reliability Assurance Agreement.

### **2.27 First Incremental Auction**

"First Incremental Auction" shall mean an auction conducted pursuant to Section 5 in which Market Sellers that committed Capacity Resources in the Base Residual Auction for a Delivery Year, which subsequently are determined to be unavailable to deliver the committed Unforced Capacity in such Delivery Year, may submit Buy Bids for replacement Capacity Resources.

### **2.28 Forecast Pool Requirement**

"Forecast Pool Requirement" shall have the meaning specified in the Reliability Assurance Agreement.

### **2.29 Forecast RTO ILR Obligation**

"Forecast RTO ILR Obligation" shall mean, in unforced capacity terms, the ILR Forecast- for the PJM Region times the DR Factor, times the Forecast Pool Requirement.

### **2.30 Forecast Zonal ILR Obligation**

"Forecast Zonal ILR Obligation" shall mean, in unforced capacity terms, the ILR Forecast for the Zone times the DR Factor, times the Forecast Pool Requirement.

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### **2.31 Generation Capacity Resource**

"Generation Capacity Resource" shall have the meaning specified in the Reliability Assurance Agreement.

### **2.32 ILR Forecast**

"ILR Forecast" shall mean, for a Delivery Year, the average annual megawatt quantity of ILR certified for the five Planning Periods preceding the date of the forecast; provided, however, that before such data becomes available for five Delivery Years under the Reliability Pricing Model, comparable data on Active Load Management (as defined in the preexisting reliability assurance agreements) from up to five prior Planning Periods shall be substituted as necessary; and provided further that, for transmission zones that were integrated into the PJM Region ~~in the two~~ less than five years prior to the conduct of the Base Residual Auction for the Delivery Year, data on incremental load subject to mandatory interruption by Electric Distribution Companies within such zones shall be substituted as necessary.

### **2.33 ILR Provider**

"ILR Provider" shall mean a Member that has the capability to reduce load, or that aggregates customers capable of reducing load. A Curtailment Service Provider, as such term is defined in the PJM Operating Agreement, may be an ILR Provider, provided it obtains certification of its load reduction capability as ILR.

### **2.34 Incremental Auction**

"Incremental Auction" shall mean any of the First Incremental Auction, Second Incremental Auction, or Third Incremental Auction.

### **2.35 Incremental Capacity Transfer Right**

"Incremental Capacity Transfer Right" shall mean a Capacity Transfer Right allocated to a Generation Interconnection Customer or Transmission Interconnection Customer obligated to fund a transmission facility or upgrade, to the extent such upgrade or facility increases the transmission import capability into a Locational Deliverability Area.

### **2.36 Interruptible Load for Reliability (ILR)**

"Interruptible Load for Reliability" or "ILR" shall have the meaning specified in the Reliability Assurance Agreement.

### ~~**2.33 Load Following Requirement**~~

~~"Load Following Requirement" shall have the meaning specified in the Reliability Assurance Agreement.~~

### ~~**2.34 Load Following Resource**~~

~~"Load Following Resource" shall have the meaning specified in the Reliability Assurance Agreement.~~

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### **2.37 Load Serving Entity (LSE)**

“Load Serving Entity” or “LSE” shall have the meaning specified in the Reliability Assurance Agreement.

### **2.38 Locational Deliverability Area (LDA)**

“Locational Deliverability Area” or “LDA” shall mean a geographic area within the PJM Region that has limited transmission capability to import capacity to satisfy such area’s reliability requirement, as determined by the Office of the Interconnection in connection with preparation of the Regional Transmission Expansion Plan, and as specified in Schedule 10.1 of the Reliability Assurance Agreement.

### **2.39 Locational Deliverability Area Reliability Requirement**

“Locational Deliverability Area Reliability Requirement” shall mean the projected internal capacity in the Locational Deliverability Area plus the Capacity Emergency Transfer Objective for the Delivery Year, as determined by the Office of the Interconnection in connection with preparation of the Regional Transmission Expansion Plan.

### **~~2.38 Locational Deliverability Requirement~~**

~~“Locational Deliverability Requirement” shall mean the requirement for Unforced Capacity to meet the needs of load located in an LDA, as determined in accordance with Schedule 10.1 of the Reliability Assurance Agreement.~~

### **2.40 Locational Price Adder**

“Locational Price Adder” shall mean an addition to the marginal value of Unforced Capacity within an LDA as necessary to reflect the price of Capacity Resources required to relieve applicable binding locational constraints.

### **2.41 Locational Reliability Charge**

“Locational Reliability Charge” shall have the meaning specified in the Reliability Assurance Agreement.

### **2.42 Net Cost of New Entry**

“Net Cost of New Entry” shall mean the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset, as defined in Section 5.

### **2.43 Nominated Demand Resource Value**

“Nominated Demand Resource Value” shall mean the amount of load reduction that a Demand Resource commits to provide either through direct load control, firm service level or guaranteed load drop programs. For existing Demand Resources, the maximum Nominated Demand Resource Value is limited, in accordance with the PJM Manuals, to the value appropriate for the method by which the load reduction would be accomplished, at the time the Base Residual Auction or Incremental Auction is being conducted.

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#### **2.44 Nominated ILR Value**

"Nominated ILR Value" shall mean the amount of load reduction that an ILR resource commits to provide either through direct load control, firm service level or guaranteed load drop programs. For ILR, the maximum Nominated ILR Capacity Value is limited, in accordance with the PJM Manuals, to the value appropriate for the method by which the load reduction would be accomplished, at the time the ILR is certified.

#### **2.45 Opportunity Cost**

"Opportunity Cost" shall mean a component of the Market Seller Offer Cap calculated in accordance with section 6.

#### **2.46 Peak-Hour Dispatch**

"Peak-Hour Dispatch" shall mean, for purposes of calculating the Energy and Ancillary Services Revenue Offset under section 5 of this Attachment, an assumption, as more fully set forth in the PJM Manuals, that the Reference Resource is dispatched in four distinct blocks of four hours of continuous output for each block from the peak-hour period beginning with the hour ending 0800 EPT through to the hour ending 2300 EPT for any day when the average real-time LMP for the area for which the Net Cost of New Entry is being determined is greater than, or equal to, the cost to generate (including the cost for a complete start and shutdown cycle) for at least two hours during each four-hour block, where such blocks shall be assumed to be dispatched independently; provided that, if there are not at least two economic hours in any given four-hour block, then the Reference Resource shall be assumed not to be dispatched for such block.

#### **2.47 Peak Season**

"Peak Season" shall mean the weeks containing the 24<sup>th</sup> through 36<sup>th</sup> Wednesdays of the calendar year. Each such week shall begin on a Monday and end on the following Sunday, except for the week containing the 36<sup>th</sup> Wednesday, which shall end on the following Friday.

#### **2.48 Percentage Internal Resources Required**

"Percentage Internal Resources Required" shall have the meaning specified in the Reliability Assurance Agreement.

#### **2.49 Planned Demand Resource**

"Planned Demand Resource" shall have the meaning specified in the Reliability Assurance Agreement.

#### **2.50 Planned Generation Capacity Resource**

"Planned Generation Capacity Resource" shall have the meaning specified in the Reliability Assurance Agreement.

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## 2.51 Planning Period

"Planning Period" shall have the meaning specified in the Reliability Assurance Agreement.

## 2.52 PJM Region

"PJM Region" shall have the meaning specified in the Reliability Assurance Agreement.

## 2.53 PJM Region Installed Reserve Margin

"PJM Region Installed Reserve Margin" shall have the meaning specified in the Reliability Assurance Agreement.

## 2.54 PJM Region Peak Load Forecast

"PJM Region Peak Load Forecast" shall mean the peak load forecast- used by the Office of the Interconnection in determining the PJM Region Reliability Requirement, and shall be determined on both a preliminary and final basis as set forth in section 5.

## 2.55 PJM Region Reliability Requirement

"PJM Region Reliability Requirement" shall mean, for purposes of the Base Residual Auction, the Forecast Pool Requirement multiplied by the Preliminary PJM Region Peak Load Forecast; and, for purposes of the Second Incremental Auction, the Forecast Pool Requirement multiplied by the Final PJM Region Peak Load Forecast.

## 2.56 Projected PJM Market Revenues

"Projected PJM Market Revenues" shall mean a component of the Market Seller Offer Cap calculated in accordance with section 6.

## 2.57 Qualifying Transmission Upgrade

"Qualifying Transmission Upgrade" shall mean a proposed enhancement or addition to the Transmission System that: (a) will increase ~~Import Capability~~ the Capacity Emergency Transfer Limit into an LDA by a megawatt quantity certified by the Office of the Interconnection; (b) the Office of the Interconnection has determined will be in service on or before the commencement of the first Delivery Year for which such upgrade is the subject of a Sell Offer in the Base Residual Auction; ~~(c) is the subject of a Facilities Study Agreement executed before the conduct of the Base Residual Auction for such Delivery Year~~ and (ed) a Generation Interconnection Customer or Transmission Interconnection Customer is obligated to fund through a rate or charge specific to such facility or upgrade.

## 2.58 Reference Resource

"Reference Resource" shall mean a combustion turbine generating station, configured with two General Electric Frame 7FA turbines with inlet air cooling to 50 degrees, Selective Catalytic Reduction technology, dual fuel capability, and a heat rate of 10,500 Mmbtu/MWh, identified by manufacturer and model number, that is reasonably representative of new generating units that could be proposed for construction in the PJM Region, and for which reliable

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~~data is available to permit the calculation of the Cost of New Entry and the Net Energy and Ancillary Service Revenue Offset, in accordance with Section 5.~~

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## **2.59 Reliability Assurance Agreement**

"Reliability Assurance Agreement" shall mean that certain "Reliability Assurance Agreement Among Load-Serving Entities in the PJM Region," on file with FERC as PJM Interconnection, L.L.C. Rate Schedule FERC No.44.

## **2.60 Reliability Pricing Model Auction**

"Reliability Pricing Model Auction" shall mean the Base Residual Auction or any Incremental Auction.

## **~~2.61 Resource Operational Reliability Requirement~~**

~~"Resource Operational Reliability Requirement" shall mean the Load Following Requirement or the Thirty-minute Start Requirement.~~

## **2.61 Resource Substitution Charge**

"Resource Substitution Charge" shall mean a charge assessed on Capacity Market Buyers in a First Incremental Auction or Third Incremental Auction to recover the cost of replacement Capacity Resources.

## **2.62 Second Incremental Auction**

"Second Incremental Auction" shall mean an auction conducted pursuant to Section 5, to secure the commitment of Capacity Resources as necessary to satisfy an increase in the PJM Region Peak Load Forecast above that reflected in the Base Residual Auction.

## **2.63 Sell Offer**

"Sell Offer" shall mean an offer to sell Capacity Resources in a Base Residual Auction, Incremental Auction, or Reliability Backstop Auction.

## **2.64 Sell Offer Price Cap**

"Sell Offer Price Cap" shall mean a maximum offer price applicable to certain Market Sellers under certain conditions, as determined in accordance with Section 6.

## **2.65 Self-Supply**

"Self-Supply" shall mean Capacity Resources secured by a Load-Serving Entity, by ownership or contract, outside a Reliability Pricing Model Auction, and used to meet obligations under this Attachment or the Reliability Assurance Agreement through submission in a Base Residual Auction of a Sell Offer indicating such Market Seller's intent that such Capacity Resource be committed regardless of clearing price. An LSE may submit a Sell Offer with a price bid for an owned or contracted Capacity Resource, but such Sell Offer shall not be deemed "Self-Supply," solely as such term is used in this Attachment.

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**2.63 — Operational Reliability Load Price Adder**

~~“Operational Reliability Load Price Adder” shall mean a component of the Zonal Capacity Price, in addition to the marginal value of Unforced Capacity, to recover from LSEs in the PJM Region the cost of Operational Reliability Resource Price Adders paid to Market Sellers for Capacity Resources committed to satisfy applicable Resource Reliability Requirements:~~

**2.64 — Operational Reliability Resource Price Adder**

~~“Operational Reliability Resource Price Adder” shall mean a component of the Capacity Resource Clearing Price, in addition to the marginal value of Unforced Capacity, paid to a Market Seller for a Capacity Resource committed to satisfy either or both of the Load Following Requirement or the Thirty Minute Start Requirement. Separate adders shall be determined for each such requirement:~~

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## 2.66 Third Incremental Auction

"Third Incremental Auction" shall mean an auction conducted pursuant to Section 5, in which Market Sellers that committed Capacity Resources in the Base Residual, First Incremental, or Second Incremental Auction for a Delivery Year, which subsequently are determined to be unavailable to deliver the committed Unforced Capacity in such Delivery Year, may submit Buy Bids for replacement Capacity Resources.

## 2.67 ~~Thirty Minute Start Resource~~ Transition Adder

~~"Transition Adder" shall mean a component of a Sell Offer permitted for certain Capacity Market Sellers for the Transition Period, as set forth in section 17. "Thirty Minute Start Resource" shall have the meaning specified in the Reliability Assurance Agreement.~~

## 2.68 Transition Period

"Transition Period" shall mean the four-year period consisting of the Delivery Years commencing June 1, 2007~~6~~, June 1, 2008~~7~~, June 1, 2009~~8~~, and June 1, 2010~~9~~.

## 2.69 Unforced Capacity

"Unforced Capacity" shall have the meaning specified in the Reliability Assurance Agreement.

## 2.70 Variable Resource Requirement Curve

"Variable Resource Requirement Curve" shall mean a series of maximum prices that can be cleared in a Base Residual Auction for Unforced Capacity, corresponding to a series of varying resource requirements based on varying installed reserve margins, as determined by the Office of the Interconnection for the PJM Region and ~~each for certain~~ Locational Deliverability Areas in accordance with the methodology provided in Section 5.

## 2.71 Zonal Capacity Price

"Zonal Capacity Price" shall mean the clearing price required in each Zone to meet the demand for Unforced Capacity and satisfy Locational Deliverability Requirements ~~and Resource Operational Reliability Requirements~~ for the LDA ~~or LDAs~~ associated with such Zone. If the Zone contains multiple LDAs with different Capacity Resource Clearing Prices, the Zonal Capacity Price shall be a weighted average of the Capacity Resource Clearing Prices for such LDAs, weighted by the Unforced Capacity of Capacity Resources cleared in each such LDA.

## ~~2.71 Thirty Minute Start Requirement~~

~~"Thirty Minute Start Requirement" shall have the meaning specified in the Reliability Assurance Agreement.~~

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**September 29, 2006**

**Attachment D**  
**PJM Tariff Revisions**  
**(Redline Version)**

## **Tariff Revisions**

## **Redline Version**

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## **I. COMMON SERVICE PROVISIONS**

### **1 Definitions**

- 1.0A Affected System:** An electric system other than the Transmission Provider's Transmission System that may be affected by a proposed interconnection.
- 1.0B Affected System Operator:** An entity that operates an Affected System or, if the Affected System is under the operational control of an independent system operator or a regional transmission organization, such independent entity.
- 1.1 Ancillary Services:** Those services that are necessary to support the transmission of capacity and energy from resources to loads while maintaining reliable operation of the Transmission Provider's Transmission System in accordance with Good Utility Practice.
- 1.2 Annual Transmission Costs:** The total annual cost of the Transmission System for purposes of Network Integration Transmission Service shall be the amount specified in Attachment H for each Zone until amended by the applicable Transmission Owner or modified by the Commission.
- 1.2A Applicable Regional Reliability Council:** The reliability council for the region in which a Network Customer, Transmission Customer, Interconnection Customer, or Transmission Owner operates.
- 1.3 Application:** A request by an Eligible Customer for transmission service pursuant to the provisions of the Tariff.
- 1.3A Attachment Facilities:** The facilities necessary to physically connect a Customer Facility to the Transmission System or interconnected distribution facilities.
- 1.3B Behind The Meter Generation:** Behind The Meter Generation refers to a generation unit that delivers energy to load without using the Transmission System or any distribution facilities (unless the entity that owns or leases the distribution facilities has consented to such use of the distribution facilities and such consent has been demonstrated to the satisfaction of the Office of the Interconnection); provided, however, that Behind The Meter Generation does not include (i) at any time, any portion of such generating unit's capacity that is designated as a Generation Capacity Resource; or (ii) in an hour, any portion of the output of such generating unit[s] that is sold to another entity for consumption at another electrical location or into the PJM Interchange Energy Market.



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- 1.3BB Black Start Service:** Black Start Service is the capability of generating units to start without an outside electrical supply or the demonstrated ability of a generating unit with a high operating factor (subject to Transmission Provider concurrence) to automatically remain operating at reduced levels when disconnected from the grid.
- 1.3C Capacity Interconnection Rights:** The rights to input generation as a Generation Capacity Resource into the Transmission System at the Point of Interconnection where the generating facilities connect to the Transmission System.
- 1.3D Capacity Resource:** ~~The net capacity from owned or contracted for generating facilities which are accredited pursuant to the procedures set forth~~ Shall have the meaning provided in the Reliability Assurance Agreement or the Reliability Assurance Agreement South.
- 1.3E Capacity Transmission Injection Rights:** The rights to schedule energy and capacity deliveries at a Point of Interconnection (as defined in Section 50.44) of a Merchant Transmission Facility with the Transmission System. Capacity Transmission Injection Rights may be awarded only to a Merchant D.C. Transmission Facility and/or Controllable A.C. Merchant Transmission Facilities that connects the Transmission System to another control area. Deliveries scheduled using Capacity Transmission Injection Rights have rights similar to those under Firm Point-to-Point Transmission Service or, if coupled with a generating unit external to the PJM

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**36.1.1 Interconnection Services:** Generation Interconnection Customers may request either of two forms of Interconnection Service, i.e., interconnection as a Capacity Resource or as an Energy Resource. Energy Resource status allows the generator to participate in the PJM Interchange Energy Market pursuant to the PJM Operating Agreement. Capacity Resource status allows the generator to participate in the PJM Interchange Energy Market to be utilized by load-serving entities in the PJM Region to meet capacity obligations imposed under the Reliability Assurance Agreement and/or to be designated as a Network Resource under Part III. Capacity Resources also may participate in ~~PJM Capacity Credit Markets~~ Reliability Pricing Model Auctions and in Ancillary Services markets pursuant to the PJM Tariff or the Operating Agreement. Capacity Resource status is based on providing sufficient transmission capability to ensure deliverability of generator output to the aggregate PJM Network Load and to satisfy various contingency criteria established by the Applicable Regional Reliability Council in which the generator is located. Specific tests performed during the Generation Interconnection Feasibility Study and later System Impact Study will identify those upgrades required to satisfy the contingency criteria applicable at the generator's location.

**36.1.2 No Applicability to Transmission Service:** Nothing in this Part IV shall constitute a request for transmission service, or confer upon a Generation Interconnection Customer any right to receive transmission service, under Part II or Part III.

**36.1.3 Acknowledgement of Generation Interconnection Request:** The Transmission Provider shall acknowledge receipt of the Generation Interconnection Request (electronically when available to all parties, otherwise written) within five (5) business days after receipt of the request and shall attach a copy of the received Generation Interconnection Request to the acknowledgement.

**36.1.4 Deficiencies in Interconnection Request:** A Generation Interconnection Request will not be considered a valid request until all information required under Section 36.1 has been received by the Transmission Provider. If a Generation Interconnection Request fails to meet the requirements set forth in Section 36.1, the Transmission Provider shall so notify the Generation Interconnection Customer (electronically when available to all parties, otherwise written) within five (5) business days of receipt of the initial Generation Interconnection Request. Such notice shall explain that the Generation Interconnection Request does not constitute a valid request and the reasons for such failure to meet the applicable requirements. Generation Interconnection Customer shall provide the additional information that Transmission Provider's notice identifies as needed to constitute a valid request within ten (10) business days after receipt of such notice. Upon timely correction of the

## Subpart D – INTERCONNECTION RIGHTS

### 45 Capacity Interconnection Rights

**45.1 Purpose:** Capacity Interconnection Rights shall entitle the holder to deliver the output of a Capacity Resource at the bus where the Capacity Resource interconnects to the Transmission System. The Transmission Provider shall plan the enhancement and expansion of the Transmission System in accordance with Schedule 6 of the Operating Agreement such that the holder of Capacity Interconnection Rights can integrate its Capacity Resources in a manner comparable to that in which each Transmission Owner integrates its Capacity Resources to serve its Native Load customers.

**45.2 Receipt of Capacity Interconnection Rights:** Generation accredited under the Reliability Assurance Agreement, ~~the Reliability Assurance Agreement-West, or the Reliability Assurance Agreement-South~~ as a Capacity Resource prior to the original effective date of this Part IV shall have Capacity Interconnection Rights commensurate with the size in megawatts of the accredited generation. When a Generation Interconnection Customer's generation is accredited as a Capacity Resource, the Generation Interconnection Customer also shall receive Capacity Interconnection Rights commensurate with the size in megawatts of the generation accredited as a Capacity Resource. Pursuant to applicable terms of Schedule 10 of the Reliability Assurance Agreement, Reliability Assurance Agreement-South or of the Reliability Assurance Agreement-West, a Transmission Interconnection Customer may combine Incremental Deliverability Rights associated with Merchant Transmission Facilities with generation capacity that is not otherwise accredited as a Capacity Resource for the purposes of obtaining accreditation of such generation as a Capacity Resource and associated Capacity Interconnection Rights.

### 45.3 Loss of Capacity Interconnection Rights:

**45.3.1 Operational Standards:** To retain Capacity Interconnection Rights, the generating resource associated with the rights must operate or be capable of operating at the capacity level associated with the rights. Operational capability shall be established consistent with Schedule 9 of the Reliability Assurance Agreement, the Reliability Assurance Agreement-South or the Reliability Assurance Agreement-West and the PJM Manuals. Generating resources that meet these operational standards shall retain their Capacity Interconnection Rights regardless of whether they are available as a Capacity Resource or are making sales outside the PJM Region.

## 110 Permanent Capacity Resource Additions Of 20 MW Or Less

This section describes procedures related to the submission and processing of Generation Interconnection Requests related to new generation resources of 20 MW or less or the increase in capability, by 20 MW or less over any period of 24 consecutive months, of an existing generation resource, for which Capacity Interconnection Rights are to be granted. Such resources may participate in the PJM energy and capacity markets and may, therefore, be used by load serving entities to meet capacity obligations imposed under the PJM Reliability Assurance Agreement or the Reliability Assurance Agreement-South. These procedures apply to generation resources which, when connected to the system, are expected to remain connected to the system for the normal life span of such a generation resource. These procedures do not apply to resources that are specifically being connected to the system temporarily, with the expectation that they will later be removed.

### 110.1 Application

The Interconnection Customer desiring the interconnection of a new Generation Capacity Resource of 20 MW or less or the increase in capacity, by 20 MW or less, of an existing Generation Capacity Resource, must submit a completed Attachment N – Form of Generation Interconnection Feasibility Study Agreement. Attachment N of the PJM Tariff may be found on the PJM web site at [www.pjm.com/geninter/geninter.html](http://www.pjm.com/geninter/geninter.html) and must be submitted to Transmission Provider.

All requirements related to the submission, for a larger resource, of an Attachment N application must be satisfied for a capacity addition of 20 MW or less, except that the non-refundable \$10,000 deposit requirement is waived. In submitting the Attachment N application, the Interconnection Customer may strike out and initial all references to the non-refundable \$10,000 deposit. While the deposit requirement is waived, the Interconnection Customer is responsible for all costs associated with the processing of the request and the performance of the Feasibility Study related to the request and will be billed for such costs following the completion of the Feasibility Study.

Documentation of site control must be submitted, for small resource additions, with the completed Attachment N. Site control may be demonstrated through an exclusive option to purchase the property on which the generation project is to be developed, a property deed, or a range of tax or corporate documents that identify property ownership. Site control must either be in the name of the party submitting the generation interconnection request or documentation must be provided establishing the business relationship between the project developer and the party having site control.

All information required in the completed Attachment N related to the generating project site, point of interconnection, and generating unit size and configuration must be provided.

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Once it has been established that the requirements related to the submission of the Attachment N application have been met, the Generation Interconnection Request will be entered into the then current Interconnection Queue for analysis. The generation addition project will be identified in the Interconnection Queue on the PJM web site by the size of the capacity addition and by its proposed Point of Interconnection on the PJM system.

## 110.2 Feasibility Study

Feasibility Study analyses can generally be expedited by examining a limited contingency set that focuses on the impact of the small capacity addition on contingency limits in the vicinity of the Generation Capacity Resource. Linear analysis tools are used to evaluate the impact of a small capacity addition with respect to compliance with Applicable Regional Reliability Council contingency criteria. Generally, small capacity additions will have very limited and isolated impacts on system facilities. If criteria violations are observed, further AC testing is required.

Short circuit calculations are performed for small resource additions to ensure that circuit breaker capabilities are not exceeded.

Once the Feasibility Study is completed, a Feasibility Study report will be prepared and transmitted to the Interconnection Customer along with a System Impact Study Agreement. In order to remain in the Interconnection Queue, the Interconnection Customer must return the executed System Impact Study Agreement within 30 days, along with documents demonstrating that an initial air permit application has been filed, if required. The deposit associated with the System Impact Study Agreement shall be equal to the estimated cost of the System Impact Study, as specified by the Transmission Provider. The Interconnection Customer is responsible for all actual costs associated with the performance of the System Impact Study related to the request and will be billed for such costs following the completion of the System Impact Study, as necessary. Transmission Provider shall retain the deposit until the settlement of the final invoice for the System Impact Study, provided however, in the event that the total actual cost of the System Impact Study does not exceed the total estimated cost of the System Impact Study then the deposit may be applied for payment of invoices for the cost of the study. In some cases, where no network impacts are identified and there are no other projects in the vicinity of the small resource addition, the System Impact Study may not be required and the project will proceed directly to the Facilities Study.

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### 110.3 System Impact Study

As with the Feasibility Study, expedited analysis procedures will be utilized, where appropriate, in the course of the System Impact Study.

Load deliverability will only be evaluated for sub-areas where margins are known to be limited. In most cases, the addition of small Generation Capacity Resources will improve local deliverability margins. However, if sub-area margins are known to be limited, the impact of the new resource will be evaluated based on its impact on the contingencies limiting emergency imports to the sub-area.

Generation deliverability is tested using linear analysis tools. In most cases, small capacity additions will have no impact on generator deliverability in an area. If violations are observed, more detailed testing using AC tools is required.

Stability analysis is generally not performed for small capacity additions. If the capacity of an existing generating resource is increased by 20 MW or less, stability will be evaluated for critical contingencies only if existing stability margins are small. New Generation Capacity Resources of 20 MW or less will only be evaluated if they are connected at a location where stability margins associated with existing resources are small.

Short circuit calculations are performed during the System Impact Study for small resource additions, taking into consideration all elements of the regional plan, to ensure that circuit breaker capabilities are not exceeded.

Once the System Impact Study is completed, a System Impact Study report will be prepared and transmitted to the Interconnection Customer along with a Facilities Study Agreement. In order to remain in the Interconnection Queue, the Interconnection Customer must return the executed Facilities Study Agreement within 30 days, along with a deposit in the amount of the estimated cost of the Facilities Study. The Interconnection Customer is responsible for all actual costs associated with the performance of the Facilities Study related to the request and will be billed for such costs following the completion of the Facilities Study. If no transmission system facilities are required, the Facilities Study may not be required and the project will proceed directly to the execution of an Interconnection Service Agreement.

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## 110.4 Facilities Study

As with larger generation projects, transmission facilities design for any required Attachment Facilities, Local Upgrades and/or Network Upgrades will be performed through the execution of a Facilities Study Agreement between the Interconnection Customer and Transmission Provider. Transmission Provider may contract with consultants, including the Interconnected Transmission Owners, or contractors acting on their behalf, to perform the bulk of the activities required under the Facilities Study Agreement. In some cases, the Interconnection Customer and Transmission Provider may reach agreement allowing the Interconnection Customer to separately arrange for the design of some of the required transmission facilities. In such cases, facilities design will be reviewed, under the Facilities Study Agreement, by the Interconnected Transmission Owner.

Facilities design for small capacity additions will be expedited to the extent possible. In most cases, few or no Network Upgrades will be required for small capacity additions. Attachment Facilities, for some small capacity additions, may, in part, be elements of a "turn key" installation. In such instances, the design of "turn key" attachments will be reviewed by the Interconnected Transmission Owners or their contractors.

## 110.5 Interconnection Service Agreement

As with larger generation projects, an Interconnection Service Agreement must be executed and filed with the FERC. The Interconnection Service Agreement identifies the obligations, on the part of the Interconnection Customer, to pay for transmission facilities required to facilitate the interconnection and the Capacity Interconnection Rights which are awarded to the Generation Capacity Resource.

In general, the execution of an Interconnection Service Agreement is no different for capacity additions of 20 MW or less than for larger Generation Capacity Resources. However, in instances where an increase of 20 MW or less to an existing Generation Capacity Resource can be put in service immediately, a modified Interconnection Service Agreement may be executed. If such an increase is expedited through the System Impact Study phase, ahead of larger projects already in the Interconnection Queue, an Interconnection Service Agreement will be executed granting interim Capacity Interconnection Rights. These interim rights will allow the capacity increase to be implemented and the resource to participate in the capacity market until studies have been completed for earlier queued resources and all related obligations have been defined. At such time, the interim rights awarded the smaller capacity addition will become dependent on the construction of any required transmission facilities and the satisfaction of any financial obligations for those facilities. If, once those obligations are defined, the smaller capacity addition desires to retain the interim Capacity Interconnection Rights, a new Interconnection Service Agreement will be executed.

If a new Generation Capacity Resource of 20 MW or less can be quickly connected to the system, interim Capacity Interconnection Rights can be awarded, as above, through the execution of a modified Interconnection Service Agreement.

#### **110.6 Other Requirements**

Requirements and application procedures related to PJM membership are specified in the PJM Manuals. Additionally, the PJM Manuals detail a range of operational requirements for generation owners related to, among other things, the need for control center facilities and modeling in the PJM Energy Management System and unit commitment tools.

### **111 Permanent Energy Resource Additions Of 20 MW Or Less But Greater Than 2MW**

This section describes procedures related to the submission and processing of requests related to the interconnection of new generation resources of 20 MW or less but greater than 2 MW or the increase in capability of 20 MW or less but greater than 2 MW of an existing generation resource, for which Capacity Interconnection Rights will not be granted. Such resources may participate in the PJM energy markets, but not in the PJM capacity markets. They may, therefore, not be used by load serving entities to meet capacity obligations imposed under the PJM Reliability Assurance Agreement or the Reliability Assurance Agreement-South. These procedures apply to generation resources which, when connected to the system, are expected to remain connected to the system for the normal life span of such a generation resource. These procedures do not apply to resources that are specifically being connected to the system temporarily, with the expectation that they will later be removed.

#### **111.1 Application**

The Interconnection Customer desiring the interconnection of a new Energy Resource of 20 MW or less but greater than 2 MW or the increase in capability, by 20 MW or less but greater than 2 MW of an existing resource, must submit a completed Attachment N – Form of Generation Interconnection Feasibility Study Agreement. Attachment N of the PJM Tariff may be found on the PJM web site at [www.pjm.com/geninter/geninter.html](http://www.pjm.com/geninter/geninter.html) and must be submitted to Transmission Provider.

All requirements related to the submission, for a larger resource, of an Attachment N application must be satisfied for a capability addition of 20 MW or less but greater than 2 MW, except that the non-refundable deposit requirement is \$1,000, rather than \$10,000. The Interconnection Customer is responsible for all actual costs associated with the processing of the request and the performance of the Feasibility Study related to the request and will be billed for such costs following the completion of the Feasibility Study.



Once the Feasibility Study is completed, a Feasibility Study report will be prepared and transmitted to the Interconnection Customer along with a System Impact Study Agreement. In order to remain in the Interconnection Queue, the Interconnection Customer must return the executed System Impact Study Agreement within 30 days, along with documents demonstrating that an initial air permit application has been filed, if required. The deposit associated with the System Impact Study Agreement shall be equal to the estimated cost of the System Impact Study, as specified by the Transmission Provider. The Interconnection Customer is responsible for all actual costs associated with the performance of the System Impact Study related to the request and will be billed for such costs following the completion of the System Impact Study. Transmission Provider shall retain the deposit until the settlement of the final invoice for the System Impact Study, provided however, in the event that the total actual cost of the System Impact Study does not exceed the total estimated cost of the System Impact Study then the deposit may be applied for payment of invoices for the cost of the study. In some cases, where no network impacts are identified and there are no other projects in the vicinity of the small resource addition, the System Impact Study may not be required and the project will proceed directly to the Facilities Study.

### 111.3 System Impact Study

As with the Feasibility Study, expedited analysis procedures will be utilized, where appropriate, in the course of the System Impact Study.

Load deliverability and generation deliverability tests are not performed for Energy Resources.

Stability analysis is generally not performed for small capacity additions. If the capacity of an existing generating resource is increased by 20 MW or less, stability will be evaluated for critical contingencies only if existing stability margins are small. New Generation Capacity Resources of 20 MW or less will only be evaluated if they are connected at a location where stability margins associated with existing resources are small.

Short circuit calculations are performed during the System Impact Study for small resource additions, taking into consideration all elements of the regional plan, to ensure that circuit breaker capabilities are not exceeded.

Once the System Impact Study is completed, a System Impact Study report will be prepared and transmitted to the Interconnection Customer along with a Facilities Study Agreement. In order to remain in the interconnection queue, the Interconnection Customer must return the executed Facilities Study Agreement within 30 days, along with a deposit in the amount of the estimated cost of the Facilities Study. The Interconnection Customer is responsible for all actual costs associated with the performance of the Facilities Study related to the request and will be billed for such costs following the completion of the Facilities Study. If no transmission system facilities are required, the Facilities Study may not be required and the project will proceed directly to the execution of an Interconnection Service Agreement.

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Total Generation Owner Monthly Revenue Requirement is the sum of the Zonal Generation Owner Monthly Revenue Requirements for all Zones in the PJM Region.

Allocation Factor is the monthly transmission use of each Network Customer or Transmission Customer per Zone or Non-Zone, as applicable, on a megawatt basis divided by the total transmission use in the Zone or in the PJM Region, as applicable, on a megawatt basis.

For Network Customers, monthly transmission use on a megawatt basis is the sum of a Network Customer's daily values of DCPZ or DCPNZ (as those terms are defined in Section 34.1) as applicable, for all days of the month.

For Transmission Customers, monthly transmission use on a megawatt basis is the sum of the Transmission Customer's hourly amounts of Reserved Capacity in the month (not curtailed by PJM) divided by 24.

Adjustment Factor is determined as the sum of the total monthly transmission use in the PJM Region, exclusive of such use by Transmission Customers serving Non-Zone Load, divided by the total monthly transmission use in the PJM Region on a megawatt basis.

In the event that a single customer is serving load in more than one Zone, or serving Non-Zone Load as well as load in one or more Zones, or is both a Network Customer and a Transmission Customer, the Monthly Charge for such a customer shall be the sum of the Monthly Charges determined by applying the appropriate formulae set forth in this Schedule 2 for each category of service.

#### **Payment to Generation Owners**

Each month, the Transmission Provider shall pay each Generation Owner an amount equal to the Generation Owner's monthly revenue requirement as accepted or approved by the Commission. In the event a Generation Owner sells a Generation Capacity Resource(s) which is included in its current effective monthly revenue requirement accepted or approved by the Commission, payments in that Generation Owner's Zone may be allocated as agreed to by the owners of Generation Capacity Resources in that Zone. Such Generation Owners shall inform Transmission Provider of any such agreement. In the absence of agreement among such Generation Owners, the Commission, upon application, shall establish the allocation. Generation Owners shall not be eligible for payment, pursuant to this Schedule 2, of monthly revenue requirement associated with those portions of generating units designated as Behind The Meter Generation.

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## SCHEDULE 9-5

### Capacity Resource and Obligation Management Service

a) Capacity Resource and Obligation Management Service comprises the activities of PJM associated with (i) assuring that customers have arranged for sufficient generating capacity to meet their ~~installed-unforced~~ capacity obligations under the Reliability Assurance Agreement ("RAA"), ~~the Reliability Assurance Agreement South ("RAA-South") and the Reliability Assurance Agreement West ("RAA-West")~~; (ii) processing Network Integration Transmission Service; and (iii) administering the capacity credit market in Reliability Pricing Model auctions for the PJM Region; and (iv) administering or providing technical support for the ~~RAA-South and RAA-West~~ (as delegated to PJM under the RAA, ~~RAA-South and RAA-West~~), including, but not limited to, long-term load forecasting, studies to establish reserve requirements, and the determination of each Load-Serving Entity's capacity obligations. PJM's eCapacity Internet-based tool enables many of these functions. PJM provides this service to Load-Serving Entities and to owners of Capacity Resources; as such terms are defined in the ~~RAA, RAA-South and RAA-West~~.

b) PJM will charge each Load-Serving Entity in the PJM Region each month a charge equal to the Capacity Resource and Obligation Management Service Rate stated below times the summation for each day of such month of the ~~Accounted-For-Daily Unforced Capacity~~ Obligation of such user, as determined for each such day pursuant to ~~Schedule 7-8 or 8.1 of the RAA, Schedule 7 of the RAA-South or Schedule 7 of the RAA-West~~; provided, however, that in ~~calculating such user's Accounted-For Obligation for purposes of this Schedule 9-5, such user's ALM load credits shall not be deducted from such user's diversity factor-adjusted summer peak, as would otherwise be calculated under the formula set forth in such Schedule 7.~~

c) In addition to any charge under paragraph (b), PJM will charge each month, each entity that included in an FRR Capacity Plan, self-scheduled, or sold and cleared, in a Reliability Pricing Model Auction, owner of a Capacity Resources committed to serve load for such each month, a charge equal to the Capacity Resource and Obligation Management Service Rate stated below times such ~~owner's entity's~~ total share, in MWs, of the Unforced Capacity of all Capacity Resources ~~owned in whole or in part cleared or self-scheduled (including through an FRR Capacity Plan) by such owner entity, for commitment to serve load during such month where such owner's share of the Unforced Capacity of each Capacity Resource partially owned by such owner shall be in proportion to such owner's percentage ownership interest in such Capacity Resource, and where the Unforced Capacity of each Capacity Resource shall be the Unforced Capacity most recently determined in accordance with the RAA, RAA-South or RAA-West for such Capacity Resource, for each day of the month for which the charge under this paragraph (c) is being calculated.~~

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## **B. Transmission Congestion Credits.**

### **1. General.**

Financial Transmission Rights may be acquired by purchase in the Financial Transmission Rights auctions or in the secondary market provided for in Section 7 of the Appendix to this Attachment K. The Office of the Interconnection will post information on the OASIS regarding FTR auction results, FTR transfers, including which FTRs have been transferred, the amount of the transfer (MW), the duration of the transfer and the identity of the buyer and seller.

For a new PJM zone, each Transmission Customer purchasing Firm Point-to-Point Service, each Network Customer, with respect to its reservation of firm transmission service for deliveries from Network Resources to Network Load, and each Transmission Owner with respect to its reservation of firm transmission service for the delivery of energy from Generation Capacity Resources to Native Load Customers (any of the foregoing being referred to as a "Firm Transmission User"), shall receive Financial Transmission Rights ("FTRs") corresponding to points of receipt and delivery designated for their firm uses of the Transmission System. Such FTRs shall remain in effect until the first annual allocation of Auction Revenue Rights to occur after the integration of such new PJM zone into the PJM Interchange Energy Market.

Each holder of an FTR shall receive the total Transmission Congestion Credits determined in accordance with section B(2) of this Attachment.

### **2. Determination of Credit.**

(a) **Overview.** For each hour with respect to which the Transmission Provider receives payments of Transmission Congestion Charges, determined in accordance with section A of this Attachment, Transmission Congestion Credits shall be allocated to the holders of Financial Transmission Rights. As explained in subsection (b), the Financial Transmission Rights are associated with the points on the Transmission System between which the Firm Transmission User to whom the FTR was originally issued has arranged for the firm transmission of electric energy, whether on a network or point-to-point basis. Holders of FTRs receive credits attributable to the difference, if any, between Locational Marginal Prices at the Point or Points of Receipt and the Point or Points of Delivery associated with the Financial Transmission Rights. As explained in subsections (b) and (c), each FTR holder shares in Transmission Congestion Credits to the extent it holds Financial Transmission Rights between the Point or Points of Receipt and the Point or Points of Delivery at which congestion is experienced in a particular hour. Distribution of credits in this manner ensures that each FTR holder will not incur energy costs that are greater than the costs of energy from the generation resources associated with the FTR holder's Financial Transmission Rights. Target allocations of Transmission Congestion Credits to holders of Financial Transmission Rights are calculated in accordance with subsection (c) and Transmission Congestion Credits are distributed in accordance with that allocation, as described in subsection (d).

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### C. Virtual Bid Screening Process

If it is determined that Virtual Bid Screening is required for a market participant, the screening process will be conducted in the PJM eMKT web interface. The process will automatically reject all virtual bids and offers submitted by the PJM market participant if the participant's Credit Available for Virtual Bidding is exceeded by the **Virtual Credit Exposure** that is calculated based on the participant's submitted bids and offers as described below.

A Participant/Member's Virtual Credit Exposure will be calculated on a daily basis for all virtual bids submitted by the market participant for the next operating day using the following equation:

Virtual Credit Exposure = the lesser of:

- (i) ((total MWh bid or offered, whichever is greater, hourly at each node) x Nodal Reference Price x 2 days) summed over all nodes and all hours; or
- (ii) (a) ((the total MWh bid or offered, whichever is greater, hourly at each node) x the Nodal Reference Price x 1 day) summed over all nodes and all hours; plus (b) ((the difference between the total bid MWh cleared and total offered MWh cleared hourly at each node) x Nodal Reference Price) summed over all nodes and all hours for the previous three cleared day-ahead markets.

A Member/Participant's Credit Available for Virtual Bidding will be the Member/Participant's Working Credit Limit less any unpaid billed and unbilled amounts owed to PJM, plus any current month unbilled amounts owed by PJM to the Member/Participant, less any credit required for FTR or other credit requirement determinants as defined in this Policy.

Each PJM Market Participant that is identified as requiring Virtual Bid Screening based on bidding history will be screened in the following manner: If the participant's Virtual Credit Exposure exceeds its Credit Available for Virtual Bidding, the Market Participant will be notified via an eMKT error message, and the submitted bids will be rejected. Upon such notification, the Market Participant may alter its virtual bids and offers so that its Virtual Credit Exposure does not exceed its Credit Available for Virtual Bidding, and may resubmit them. Bids may be submitted in one or more groups during a day. If one or more groups of bids is submitted and accepted, and a subsequent group of submitted bids causes the total submitted bids to exceed the Virtual Credit Exposure, then only that subsequent set of bids will be rejected. Previously accepted bids will not be affected, though the Market Participant may choose to withdraw them voluntarily.

### IV. RELIABILITY PRICING MODEL AUCTION CREDIT REQUIREMENTS

Settlement during any Delivery Year of cleared positions resulting or expected to result from any Reliability Pricing Model Auction shall be included as appropriate in Peak Market Activity, and the provisions of this Attachment O shall apply to any such activity and obligations arising therefrom. In addition, the provisions of this section shall apply to any entity seeking to participate in any RPM Auction, to address credit risks unique to such auctions.

### A. Applicability

A Market Seller seeking to submit a Sell Offer in any Reliability Pricing Model Auction based on any Capacity Resource for which there is a materially increased risk of non-performance must satisfy the credit requirement specified in section IV.B before submitting such Sell Offer. Credit must be maintained until such risk of non-performance is substantially eliminated, but may be reduced commensurate with the reduction in such risk, as set forth in Section IV.C.

For purposes of this provision, a resource for which there is a materially increased risk of non-performance shall mean: (i) a Planned Generation Capacity Resource; (ii) a Planned Demand Resource; (iii) a Qualifying Transmission Upgrade; or (iv) an existing Generation Capacity Resource located outside the PJM Region that at the time it is submitted in a Sell Offer has not secured firm transmission service to the border of the PJM Region sufficient to satisfy the deliverability requirements of the Reliability Assurance Agreement.

### B. Reliability Pricing Model Auction Credit Requirement

For any resource specified in Section IV.A, the credit requirement shall be the RPM Auction Credit Rate, as provided in Section IV.D, times the megawatts to be offered for sale from such resource in a Reliability Pricing Model Auction. As set forth in Section IV.D, the Auction Credit Requirement shall be determined separately for each Delivery Year. The RPM Auction Credit Requirement for each Market Seller shall be the sum of the credit requirements for all such resources to be offered by such Market Seller in the auction.

### C. Reduction in Credit Requirement

The RPM Auction Credit Requirement for a Market Seller will be reduced for any Delivery Year to the extent less than all of such Market Seller's offers clear in the Base Residual Auction or any Incremental Auction for such Delivery Year. Such reduction shall be proportional to the quantity, in megawatts, that failed to clear in such Delivery Year. As specified in Section IV.D, the RPM Auction Credit Rate also may be reduced under certain circumstances after the auction has closed.

In addition, the RPM Auction Credit Requirement for a Participant for any given Delivery Year shall be reduced periodically, provided the Participant successfully meets progress milestones that reduce the risk of non-performance, as follows:

- a. For Planned Demand Resources, the RPM Auction Credit Requirement will be reduced in direct proportion to the megawatts of such Demand Resource that the Resource Provider qualifies as a Capacity Resource, in accordance with the procedures established under the Reliability Assurance Agreement.

- b. For existing Generation Capacity Resources located outside the PJM Region that have not secured sufficient firm transmission to the border of the PJM Region prior to the auction in which such resource is first offered, the RPM Credit Requirement shall be reduced in direct proportion to the megawatts of firm transmission service secured by the Market Seller that qualify such resource under the deliverability requirements of the Reliability Assurance Agreement.
- c. For Planned Generation Capacity Resources, the RPM Credit Requirement shall be reduced to 50% of the amount calculated under Section IV.B beginning as of the effective date of an Interconnection Service Agreement, and shall be reduced to zero on the date of commencement of Interconnection Service.
- d. For Qualifying Transmission Upgrades, the RPM Credit Requirement shall be reduced to zero on the date the Qualifying Transmission Upgrade is placed in service.

#### D. RPM Auction Credit Rate

Market Sellers offering resources into a Reliability Pricing Model Auction for any Delivery Year will incur a forward financial obligation to PJM if: (i) the offered resource clears in such auction; (ii) the Market Seller subsequently becomes deficient in its ability to provide such resource; (iii) the Market Seller participates in a First or Third Incremental Auction to obtain replacement resources for such Season Delivery Year to meet the obligation for which the Market Seller is deficient; and (iv) the Capacity Resource Clearing Price in such Incremental Auction exceeds the Capacity Resource Clearing Price the resource was to receive as a result of clearing the prior auction.

As set forth in the PJM Manuals, a separate Auction Credit Rate shall be calculated for each Delivery year prior to each Reliability Pricing Model Auction for such Delivery Year, as follows:

- a. For a Base Residual Auction for a Delivery Year, the Auction Credit Rate for each Season shall be the marginal value of system capacity determined in the Base Residual Auction for the prior Delivery Year, times the number of days in such prior Delivery Year, times the Maximum Price Exposure factor described below; provided, however, that for the Delivery Year addressed in the first RPM Base Residual Auction, the marginal value of system capacity used in this formula shall be determined analytically through simulation programming, and shall be posted prior to the auction.

For any Incremental Auction for a Delivery Year, the Auction Credit Rate shall be the marginal value of system capacity determined in the Base Residual Auction for such Delivery Year, times the number of days in such Delivery Year, times the Maximum Price Exposure factor described below.

b. Subsequent to any auction, the Auction Credit Rate used for ongoing credit requirements for supply committed in such auction shall be the lesser of the Auction Credit Rate established prior to offering into the auction, and the actual marginal value of system capacity (times the number of days in such Delivery Year, times the Maximum Price Exposure factor described below) that was posted for that auction for all of a supplier's offers which cleared in that auction.

c. The Maximum Price Exposure factor will be calculated as follows:

1. Prior to the date that three Incremental Auctions for a given Delivery Year(s) have been conducted, the Maximum Price Exposure factor will be the maximum expected two-year percent price increase with a 90% confidence based on PJM's market simulations.
2. After three Incremental Auctions have been conducted for any Delivery Year(s), but before six such auctions have been conducted, the Maximum Price Exposure factor will be calculated initially in the same manner as for the first three Incremental Auctions, but shall be reduced to the extent the greatest percent price increase for a given Delivery Year (as measured between any Incremental Auction and its associated Base Residual Auction) was less than the value initially calculated, and shall be increased to the extent the second greatest percent price increase for a given Delivery Year (as measured between any Incremental Auction and its associated Base Residual Auction) was greater than the value initially calculated.
3. After six Incremental Auctions have been conducted for any Delivery Year(s), the Maximum Price Exposure factor for such Delivery Year will be the second largest percent price increase (as measured between any Incremental Auction and its associated Base Residual Auction) for any Incremental Auctions for such Delivery Year conducted during the then-current calendar year or during any of the three preceding calendar years.

#### E. Forms of Financial Security

In addition to the forms of credit specified elsewhere in this Attachment Q, the following form of unsecured credit shall be available to Market Sellers, but solely for purposes of satisfying RPM Auction Credit Requirements. If a supplier has a history of being a net seller into PJM markets, on average, over the past 12 months, then PJM will count as available unsecured credit twice the average of that participant's total net monthly PJM bills over the past 12 months.

#### **IV. FORMS OF FINANCIAL SECURITY**

Applicants/Participants/Members that provide Financial Security must provide the security in a PJM approved form and amount according to the guidelines below.



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Acceptable forms of Financial Security include cash deposits and letters of credit.

## **| IV.I FINANCIAL TRANSMISSION RIGHT AUCTIONS**

### **A. SCOPE.**

Credit shall be required for all FTR auction products. The foregoing notwithstanding, bids from Established Monthly FTR Market Participants for single calendar month FTRs covering the month beginning immediately after a monthly FTR auction will not be included in their FTR credit requirement(s).

#### **A. Total FTR Credit Requirement.**

PJM shall calculate a total FTR credit requirement for each Market Participant equal to the sum of its Auction Credit Requirements for all FTR auctions. Market Participants in FTR Auctions shall be required to maintain this minimum amount of credit with PJM in addition to any other credit requirements the Market Participant may have pursuant to the Tariff.

#### **C. Auction Credit Requirement.**

For each FTR auction, PJM shall calculate an Auction Credit Requirement for each Market Participant. If a set of submitted bids would ever cause a Market Participant's Auction Credit Requirement to exceed the Market Participant's auction credit limit, then that set of Submitted bids shall be rejected.

In calculating a Market Participant's Auction Credit Requirement, self-scheduled FTR's shall have a zero credit requirement. Positive FTR bids for which the bidder holds matching ARRs will not be counted in the bid total. In addition, the Auction Credit Requirement will be reduced in accordance with the credit release schedule set forth in section IV.E of this Credit Policy.

#### **A. Total FTR Credit Limit.**

Market Participants shall establish a total FTR credit limit prior to bidding in an FTR auction, provided that this requirement shall not apply if an Established Monthly FTR Market Participant exclusively bids on single calendar month FTRs covering the month beginning immediately after a monthly FTR auction.

A total FTR credit limit can be established by utilizing the unused portion of a Market Participant's currently established Unsecured Credit limit at PJM provided the Market Participant specifically makes such a request in writing to the PJM Treasury Department. FTR credit can also be established or enhanced by the Market Participant providing additional Financial Security or Corporate Guaranty, of a type acceptable under this Credit Policy.

- The letter of credit must clearly state the full names of the "Issuer", "Account Party" and "Beneficiary" (PJM), the dollar amount available for drawings, and shall specify that funds will be disbursed upon presentation of the drawing certificate in accordance with the instructions stated in the letter of credit. The letter of credit should specify any statement that is required to be on the drawing certificate, and any other terms and conditions that apply to such drawings.
- The PJM Credit Application contains an acceptable form of a letter of credit that should be utilized by an Applicant/Participant/Member choosing to meet its Financial Security requirement with a letter of credit. If the letter of credit varies in any way from the PJM format, it must first be reviewed and approved by PJM. All costs associated with obtaining and maintaining a letter of credit and meeting the policy provisions are the responsibility of the Applicant /Participant/Member
- PJM may accept a letter of credit from a Financial Institution that does not meet the credit standards of this Policy provided that the letter of credit has third-party support, in a form acceptable to PJM, from a financial institution that does meet the credit standards of this Policy.

## **| VI. EVENTS OF DEFAULT**

Failure to comply with this policy (except for the responsibility of an Applicant/Participant/Member to notify PJM of a Material change) shall be considered an event of default. Pursuant to §15.1.3(a) of the **Operating Agreement of PJM Interconnection, L.L.C.** and §1.7.3 of the **PJM Open Access Transmission Tariff**, non-compliance with the PJM Credit Policy is an event of default under those respective Agreements. In event of default under this Credit Policy or one or more of the Agreements, PJM will take such actions as may be required or permitted under the Agreements, including but not limited to the termination of Participant/Member's ongoing Transmission Service and participation in PJM Markets. A Participant/Member will have three (3) Business Days from notification of policy breach to remedy the situation in a manner deemed acceptable by PJM. PJM has the right to liquidate all or a portion of a Participant/Member's Financial Security at its discretion to satisfy Total Net Obligations to PJM in the event of default under this Credit Policy or one or more of the Agreements.

## **| VII. DEFINITIONS:**

**Affiliate** – Affiliate is defined in the PJM Operating Agreement, §1.2.

**Agreements** – The Operating Agreement of PJM Interconnection, L.L.C., the PJM Open Access Transmission Tariff, the **Reliability Assurance Agreement**, the **Reliability**

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**Individual FTR Credit Requirements** – Shall mean the bid price for the FTR less the Revenue Offset for the FTR. If the Individual FTR Credit Requirement for an FTR results in a value less than zero, that Individual FTR Credit Requirement shall be set to zero.

**Market Participant** – shall have the meaning provided in the Operating Agreement.

**Material** - For these purposes, material is defined in §I.B.3, Material Changes. For the purposes herein, the use of the term "material" is not necessarily synonymous with use of the term by governmental agencies and regulatory bodies.

**Member** – shall have the meaning provided in the Operating Agreement.

**Net Obligation** – The amount owed to PJM for purchases from the PJM Markets, Transmission Service, (under both Part II and Part III of the O.A.T.T.), and other services pursuant to the Agreements, after applying a deduction for amounts owed to a Participant by PJM as it pertains to monthly market activity. ~~In addition, aggregate amounts that will be owed to PJM in the future for Capacity purchases within the PJM Capacity markets will be added to this figure.~~ Should other markets be formed such that Participants may incur future **Obligations** in those markets, then the aggregate amount of those Obligations will also be added to the Net Obligation.

**Nodal Reference Price** – A probabilistic (97%) maximum price differential historically experienced between day-ahead and real-time market prices at a given location as defined in this policy. This number is used in Virtual Bid Screening.

**Obligation** – All amounts owed to PJM for purchases from the PJM Markets, Transmission Service, (under both Part II and Part III of the O.A.T.T.), and other services pursuant to the Agreements. In addition, aggregate amounts that will be owed to PJM in the future for Capacity purchases within the PJM Capacity markets will be added to this

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## **ATTACHMENT YDD**

**[Note: redlining in Attachment DD shows revisions against Attachment Y in PJM's August 31, 2005 Filing in Docket Nos. ER05-1410 and EL05-148]**

### **Reliability Pricing Model**

#### **I. INTRODUCTION**

This Attachment sets forth the terms and conditions governing the Reliability Pricing Model for the PJM Region. As more fully set forth in this Attachment and the PJM Manuals, and in conjunction with the Reliability Assurance Agreement, the Reliability Pricing Model provides:

- (a) support for LSEs in satisfying Daily Unforced Capacity Obligations for future Delivery Years through Self Supply of Capacity Resources;
- (b) a competitive auction mechanism to secure the forward commitment of additional Capacity Resources and Qualifying Transmission Upgrades as necessary to satisfy the portion of LSEs' Unforced Capacity Obligations not satisfied through Self-Supply, in order to ensure the reliability of the PJM Region for future Delivery Years;
- (c) long-term pricing signals for the development of Capacity Resources, including demand resources and planned generation resources, to ensure the reliability of the PJM Region;
- (d) recognition for the locational ~~and operational~~ reliability benefits of Capacity Resources;
- (e) deficiency charges to ensure progress toward, and fulfillment of, forward commitments by demand and generation resources to satisfy capacity ~~and operational~~ reliability requirements;
- (f) measures to identify and mitigate capacity market structure deficiencies; and
- (g) a Reliability Backstop mechanism to ensure that sufficient generation, transmission and demand response solutions will be available to preserve system reliability.

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## 2. DEFINITIONS

Definitions specific to this Attachment are set forth below. In addition, any capitalized terms used in this Attachment not defined herein shall have the meaning given to such terms elsewhere in this Tariff or in the RAA. References to section numbers in this Attachment ~~Y-DD~~ refer to sections of this attachment, unless otherwise specified.

### 2.1 Annual Revenue Rate

"Annual Revenue Rate" shall mean the rate employed to assess a compliance penalty charge on a Demand Resource Provider or ILR Provider under section 11.

### 2.2 Avoidable Cost Rate

"Avoidable Cost Rate" shall mean a component of the Market Seller Offer Cap calculated in accordance with section 6.

### 2.3 Base Load Generation Resource

"Base Load Generation Resource" shall mean a Generation Capacity Resource that operates at least 90 percent of the hours that it is available to operate, as determined by the Office of the Interconnection in accordance with the PJM Manuals.

### 2.4 Base Offer Segment

"Base Offer Segment" shall mean a component of a Sell Offer based on an existing Generation Capacity Resource, equal to the ~~summer net capability of the installed~~ Unforced eCapacity of such resource, as determined in accordance with the PJM Manuals, minus the EFORD Offer Segment. If the Sell Offers of multiple Market Sellers are based on a single existing Generation Capacity Resource, the Base Offer Segments of such Market Sellers shall be determined pro rata based on their entitlements to Unforced Capacity from such resource.

### 2.5 Base Residual Auction

"Base Residual Auction" shall mean the auction conducted ~~four-three~~ years prior to the start of the Delivery Year to secure commitments from Capacity Resource as necessary to satisfy any portion of the Unforced Capacity Obligation of the PJM Region not satisfied through Self-Supply.

### 2.6 Buy Bid

"Buy Bid" shall mean a bid to buy Capacity Resources in the First Incremental Auction or Third Incremental Auction.

### 2.7 Capacity Credit

"Capacity Credit" shall have the meaning specified in Schedule 11 of the Operating Agreement, including Capacity Credits obtained prior to the termination of such Schedule applicable to periods after the termination of such Schedule.

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## **2.8 Import CapabilityCapacity Emergency Transfer Limit**

~~“Import CapabilityCapacity Emergency Transfer Limit” or “CETL” shall have the meaning, provided in the Reliability Assurance Agreement as to an LDA, the capacity emergency transfer limit for such LDA, as determined by the Office of the Interconnection in accordance with NERC and Applicable Regional Reliability Council guidelines.~~

## **2.9 Capacity Emergency Transfer Objective**

~~“Capacity Emergency Transfer Objective” or “CETO” shall have the meaning provided in the Reliability Assurance Agreement.~~

## **2.10 Capacity Market Buyer**

“Capacity Market Buyer” shall mean a Member that submits bids to buy Capacity Resources in the First Incremental Auction or Third Incremental Auction.

## **2.11 Capacity Market Seller**

“Capacity Market Seller” shall mean a Member that owns, or has the contractual authority to control the output or load reduction capability of, a Capacity Resource, that has not transferred such authority to another entity, and that offers such resource in the Base Residual Auction or an Incremental Auction.

## **2.12 Capacity Resource**

“Capacity Resource” shall have the meaning specified in the Reliability Assurance Agreement.

## **2.13 Capacity Resource Clearing Price**

“Capacity Resource Clearing Price” shall mean the price calculated for a Capacity Resource that offered and cleared in a Base Residual Auction or Incremental Auction, in accordance with Section 5.

## **2.14 Capacity Transfer Right**

“Capacity Transfer Right” shall mean a right, allocated to LSEs serving load in a Locational Deliverability Area, to receive payments, based on the transmission import capability into such Locational Deliverability Area, that offset, in whole or in part, the charges attributable to the Locational Price Adder, if any, included in the Zonal Capacity Price calculated for a Locational Delivery Area.

## **2.15 CONE Area**

~~“CONE Area” shall mean the areas listed in section 5.10(a)(iv)(A) and any LDAs established as CONE Areas pursuant to section 5.10(a)(iv)(B).~~

## **2.16 Cost of New Entry**

~~“Cost of New Entry” or “CONE” shall mean the realnominal levelized cost of a Reference Resource, as quantified and stateddetermined in accordance with in section 5.~~

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~~2.14~~ Season

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#### **2.17 Daily Deficiency Rate**

“Daily Deficiency Rate” shall mean the rate employed to assess certain deficiency charges under sections 7, 8, 9, or 12.

#### **2.18 Daily Unforced Capacity Obligation**

“Daily Unforced Capacity Obligation” shall mean the capacity obligation of a Load Serving Entity during the Delivery Year, determined in accordance with Schedule 8 of the Reliability Assurance Agreement.

#### **2.19 Delivery Year**

Delivery Year shall mean the Planning Period for which a Capacity Resource is committed pursuant to the auction procedures specified in Section 5.

#### **2.20 Demand Resource**

“Demand Resource” shall have the meaning specified in the Reliability Assurance Agreement.

#### **2.21 Demand Resource Factor**

“Demand Resource Factor” shall have the meaning specified in the Reliability Assurance Agreement.

#### **2.22 Demand Resource Provider**

“Demand Resource Provider” shall mean a Member that has the capability to reduce load, or that aggregates customers capable of reducing load. A Curtailment Service Provider, as defined in the Operating Agreement, may be a Demand Resource Provider, provided it qualifies its load reduction capability as a Demand Resource.

#### **2.23 EFORD**

“EFORD” shall have the meaning specified in the PJM Reliability Assurance Agreement.

#### **2.24 EFORD Offer Segment**

“EFORD Offer Segment” shall mean a component of a Sell Offer permitted under section 6 to address the potential for changes in EFORD in the time period between the conduct of an auction and the final determination of EFORD for a Delivery Year. If the Sell Offers of multiple Market Sellers are based on a single existing Generation Capacity Resource, the EFORD Offer Segments of such Market Sellers shall be determined pro rata based on their entitlements to Unforced Capacity from such resource.

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## **2.25 Equilibrium Zone**

"Equilibrium Zone" shall mean: (a) for the VRR Curve for the PJM Region, any quantity of Unforced Capacity between (i) [the PJM Region Reliability Requirement multiplied by (100% plus IRM%) divided by (100% plus IRM%)] minus the Forecast RTO ILR Obligation; and (ii) [the PJM Region Reliability Requirement multiplied by (100% plus IRM% plus 2%) divided by (100% plus IRM%)] minus the Forecast RTO ILR Obligation; and (b) for the VRR Curve for any Locational Deliverability Area, any quantity of Unforced Capacity between (i) [the LDA Reliability Requirement multiplied by (100% plus IRM%) divided by (100% plus IRM%)] minus the Forecast LDA ILR Obligation; and (ii) [the LDA Reliability Requirement multiplied by (100% plus IRM% plus 2%) divided by (100% plus IRM%)] minus the Forecast LDA ILR Obligation (if not previously accounted for in establishing the CETO for such LDA), where "Forecast LDA ILR Obligation" shall mean the sum of the Forecast Zonal ILR Obligations for all Zones in such LDA.

## **2.26 Final RTO Unforced Capacity Obligation**

"Final RTO Unforced Capacity Obligation" shall mean the capacity obligation for the PJM Region, determined in accordance with Schedule 8 of the Reliability Assurance Agreement.

## **2.27 First Incremental Auction**

"First Incremental Auction" shall mean an auction conducted pursuant to Section 5 in which Market Sellers that committed Capacity Resources in the Base Residual Auction for a Delivery Year, which subsequently are determined to be unavailable to deliver the committed Unforced Capacity in such Delivery Year, may submit Buy Bids for replacement Capacity Resources.

## **2.28 Forecast Pool Requirement**

"Forecast Pool Requirement" shall have the meaning specified in the Reliability Assurance Agreement.

## **2.29 Forecast RTO ILR Obligation**

"Forecast RTO ILR Obligation" shall mean, in unforced capacity terms, the ILR Forecast- for the PJM Region times the DR Factor, times the Forecast Pool Requirement.

## **2.30 Forecast Zonal ILR Obligation**

"Forecast Zonal ILR Obligation" shall mean, in unforced capacity terms, the ILR Forecast for the Zone times the DR Factor, times the Forecast Pool Requirement.

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### **2.31 Generation Capacity Resource**

"Generation Capacity Resource" shall have the meaning specified in the Reliability Assurance Agreement.

### **2.32 ILR Forecast**

"ILR Forecast" shall mean, for a Delivery Year, the average annual megawatt quantity of ILR certified for the five Planning Periods preceding the date of the forecast; provided, however, that before such data becomes available for five Delivery Years under the Reliability Pricing Model, comparable data on Active Load Management (as defined in the preexisting reliability assurance agreements) from up to five prior Planning Periods shall be substituted as necessary; and provided further that, for transmission zones that were integrated into the PJM Region ~~in the two~~ less than five years prior to the conduct of the Base Residual Auction for the Delivery Year, data on incremental load subject to mandatory interruption by Electric Distribution Companies within such zones shall be substituted as necessary.

### **2.33 ILR Provider**

"ILR Provider" shall mean a Member that has the capability to reduce load, or that aggregates customers capable of reducing load. A Curtailment Service Provider, as such term is defined in the PJM Operating Agreement, may be an ILR Provider, provided it obtains certification of its load reduction capability as ILR.

### **2.34 Incremental Auction**

"Incremental Auction" shall mean any of the First Incremental Auction, Second Incremental Auction, or Third Incremental Auction.

### **2.35 Incremental Capacity Transfer Right**

"Incremental Capacity Transfer Right" shall mean a Capacity Transfer Right allocated to a Generation Interconnection Customer or Transmission Interconnection Customer obligated to fund a transmission facility or upgrade, to the extent such upgrade or facility increases the transmission import capability into a Locational Deliverability Area.

### **2.36 Interruptible Load for Reliability (ILR)**

"Interruptible Load for Reliability" or "ILR" shall have the meaning specified in the Reliability Assurance Agreement.

### ~~**2.33 Load Following Requirement**~~

~~"Load Following Requirement" shall have the meaning specified in the Reliability Assurance Agreement.~~

### ~~**2.34 Load Following Resource**~~

~~"Load Following Resource" shall have the meaning specified in the Reliability Assurance Agreement.~~

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### **2.37 Load Serving Entity (LSE)**

“Load Serving Entity” or “LSE” shall have the meaning specified in the Reliability Assurance Agreement.

### **2.38 Locational Deliverability Area (LDA)**

“Locational Deliverability Area” or “LDA” shall mean a geographic area within the PJM Region that has limited transmission capability to import capacity to satisfy such area’s reliability requirement, as determined by the Office of the Interconnection in connection with preparation of the Regional Transmission Expansion Plan, and as specified in Schedule 10.1 of the Reliability Assurance Agreement.

### **2.39 Locational Deliverability Area Reliability Requirement**

“Locational Deliverability Area Reliability Requirement” shall mean the projected internal capacity in the Locational Deliverability Area plus the Capacity Emergency Transfer Objective for the Delivery Year, as determined by the Office of the Interconnection in connection with preparation of the Regional Transmission Expansion Plan.

### **~~2.38 Locational Deliverability Requirement~~**

~~“Locational Deliverability Requirement” shall mean the requirement for Unforced Capacity to meet the needs of load located in an LDA, as determined in accordance with Schedule 10.1 of the Reliability Assurance Agreement.~~

### **2.40 Locational Price Adder**

“Locational Price Adder” shall mean an addition to the marginal value of Unforced Capacity within an LDA as necessary to reflect the price of Capacity Resources required to relieve applicable binding locational constraints.

### **2.41 Locational Reliability Charge**

“Locational Reliability Charge” shall have the meaning specified in the Reliability Assurance Agreement.

### **2.42 Net Cost of New Entry**

“Net Cost of New Entry” shall mean the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset, as defined in Section 5.

### **2.43 Nominated Demand Resource Value**

“Nominated Demand Resource Value” shall mean the amount of load reduction that a Demand Resource commits to provide either through direct load control, firm service level or guaranteed load drop programs. For existing Demand Resources, the maximum Nominated Demand Resource Value is limited, in accordance with the PJM Manuals, to the value appropriate for the method by which the load reduction would be accomplished, at the time the Base Residual Auction or Incremental Auction is being conducted.

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#### **2.44 Nominated ILR Value**

"Nominated ILR Value" shall mean the amount of load reduction that an ILR resource commits to provide either through direct load control, firm service level or guaranteed load drop programs. For ILR, the maximum Nominated ILR Capacity Value is limited, in accordance with the PJM Manuals, to the value appropriate for the method by which the load reduction would be accomplished, at the time the ILR is certified.

#### **2.45 Opportunity Cost**

"Opportunity Cost" shall mean a component of the Market Seller Offer Cap calculated in accordance with section 6.

#### **2.46 Peak-Hour Dispatch**

"Peak-Hour Dispatch" shall mean, for purposes of calculating the Energy and Ancillary Services Revenue Offset under section 5 of this Attachment, an assumption, as more fully set forth in the PJM Manuals, that the Reference Resource is dispatched in four distinct blocks of four hours of continuous output for each block from the peak-hour period beginning with the hour ending 0800 EPT through to the hour ending 2300 EPT for any day when the average real-time LMP for the area for which the Net Cost of New Entry is being determined is greater than, or equal to, the cost to generate (including the cost for a complete start and shutdown cycle) for at least two hours during each four-hour block, where such blocks shall be assumed to be dispatched independently; provided that, if there are not at least two economic hours in any given four-hour block, then the Reference Resource shall be assumed not to be dispatched for such block.

#### **2.47 Peak Season**

"Peak Season" shall mean the weeks containing the 24<sup>th</sup> through 36<sup>th</sup> Wednesdays of the calendar year. Each such week shall begin on a Monday and end on the following Sunday, except for the week containing the 36<sup>th</sup> Wednesday, which shall end on the following Friday.

#### **2.48 Percentage Internal Resources Required**

"Percentage Internal Resources Required" shall have the meaning specified in the Reliability Assurance Agreement.

#### **2.49 Planned Demand Resource**

"Planned Demand Resource" shall have the meaning specified in the Reliability Assurance Agreement.

#### **2.50 Planned Generation Capacity Resource**

"Planned Generation Capacity Resource" shall have the meaning specified in the Reliability Assurance Agreement.

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#### 2.51 Planning Period

"Planning Period" shall have the meaning specified in the Reliability Assurance Agreement.

#### 2.52 PJM Region

"PJM Region" shall have the meaning specified in the Reliability Assurance Agreement.

#### 2.53 PJM Region Installed Reserve Margin

"PJM Region Installed Reserve Margin" shall have the meaning specified in the Reliability Assurance Agreement.

#### 2.54 PJM Region Peak Load Forecast

"PJM Region Peak Load Forecast" shall mean the peak load forecast- used by the Office of the Interconnection in determining the PJM Region Reliability Requirement, and shall be determined on both a preliminary and final basis as set forth in section 5.

#### 2.55 PJM Region Reliability Requirement

"PJM Region Reliability Requirement" shall mean, for purposes of the Base Residual Auction, the Forecast Pool Requirement multiplied by the Preliminary PJM Region Peak Load Forecast; and, for purposes of the Second Incremental Auction, the Forecast Pool Requirement multiplied by the Final PJM Region Peak Load Forecast.

#### 2.56 Projected PJM Market Revenues

"Projected PJM Market Revenues" shall mean a component of the Market Seller Offer Cap calculated in accordance with section 6.

#### 2.57 Qualifying Transmission Upgrade

"Qualifying Transmission Upgrade" shall mean a proposed enhancement or addition to the Transmission System that: (a) will increase ~~Import Capability~~ the Capacity Emergency Transfer Limit into an LDA by a megawatt quantity certified by the Office of the Interconnection; (b) the Office of the Interconnection has determined will be in service on or before the commencement of the first Delivery Year for which such upgrade is the subject of a Sell Offer in the Base Residual Auction; ~~(c) is the subject of a Facilities Study Agreement executed before the conduct of the Base Residual Auction for such Delivery Year~~ and (ed) a Generation Interconnection Customer or Transmission Interconnection Customer is obligated to fund through a rate or charge specific to such facility or upgrade.

#### 2.58 Reference Resource

"Reference Resource" shall mean a combustion turbine generating station, configured with two General Electric Frame 7EA turbines with inlet air cooling to 50 degrees, Selective Catalytic Reduction technology, dual fuel capability, and a heat rate of 10,500 Mmbtu/MWh, identified by manufacturer and model number, that is reasonably representative of new generating units that could be proposed for construction in the PJM Region, and for which reliable

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~~data is available to permit the calculation of the Cost of New Entry and the Net Energy and Ancillary Service Revenue Offset, in accordance with Section 5.~~

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## **2.59 Reliability Assurance Agreement**

“Reliability Assurance Agreement” shall mean that certain “Reliability Assurance Agreement Among Load-Serving Entities in the PJM Region,” on file with FERC as PJM Interconnection, L.L.C. Rate Schedule FERC No.44.

## **2.60 Reliability Pricing Model Auction**

“Reliability Pricing Model Auction” shall mean the Base Residual Auction or any Incremental Auction.

## **~~2.61 Resource Operational Reliability Requirement~~**

~~“Resource Operational Reliability Requirement” shall mean the Load Following Requirement or the Thirty-minute Start Requirement.~~

## **2.61 Resource Substitution Charge**

“Resource Substitution Charge” shall mean a charge assessed on Capacity Market Buyers in a First Incremental Auction or Third Incremental Auction to recover the cost of replacement Capacity Resources.

## **2.62 Second Incremental Auction**

“Second Incremental Auction” shall mean an auction conducted pursuant to Section 5, to secure the commitment of Capacity Resources as necessary to satisfy an increase in the PJM Region Peak Load Forecast above that reflected in the Base Residual Auction.

## **2.63 Sell Offer**

“Sell Offer” shall mean an offer to sell Capacity Resources in a Base Residual Auction, Incremental Auction, or Reliability Backstop Auction.

## **2.64 Sell Offer Price Cap**

“Sell Offer Price Cap” shall mean a maximum offer price applicable to certain Market Sellers under certain conditions, as determined in accordance with Section 6.

## **2.65 Self-Supply**

“Self-Supply” shall mean Capacity Resources secured by a Load-Serving Entity, by ownership or contract, outside a Reliability Pricing Model Auction, and used to meet obligations under this Attachment or the Reliability Assurance Agreement through submission in a Base Residual Auction of a Sell Offer indicating such Market Seller’s intent that such Capacity Resource be committed regardless of clearing price. An LSE may submit a Sell Offer with a price bid for an owned or contracted Capacity Resource, but such Sell Offer shall not be deemed “Self-Supply,” solely as such term is used in this Attachment.

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**2.63—Operational Reliability Load Price Adder**

“Operational Reliability Load Price Adder” shall mean a component of the Zonal Capacity Price, in addition to the marginal value of Unforced Capacity, to recover from LSEs in the PJM Region the cost of Operational Reliability Resource Price Adders paid to Market Sellers for Capacity Resources committed to satisfy applicable Operational Reliability Requirements:

**2.64—Operational Reliability Resource Price Adder**

“Operational Reliability Resource Price Adder” shall mean a component of the Capacity Resource Clearing Price, in addition to the marginal value of Unforced Capacity, paid to a Market Seller for a Capacity Resource committed to satisfy either or both of the Load Following Requirement or the Thirty Minute Start Requirement. Separate adders shall be determined for each such requirement:

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## 2.66 Third Incremental Auction

"Third Incremental Auction" shall mean an auction conducted pursuant to Section 5, in which Market Sellers that committed Capacity Resources in the Base Residual, First Incremental, or Second Incremental Auction for a Delivery Year, which subsequently are determined to be unavailable to deliver the committed Unforced Capacity in such Delivery Year, may submit Buy Bids for replacement Capacity Resources.

## 2.67 ~~Thirty Minute Start Resource~~ Transition Adder

"Transition Adder" shall mean a component of a Sell Offer permitted for certain Capacity Market Sellers for the Transition Period, as set forth in section 17. ~~"Thirty Minute Start Resource" shall have the meaning specified in the Reliability Assurance Agreement.~~

## 2.68 Transition Period

"Transition Period" shall mean the four-year period consisting of the Delivery Years commencing June 1, 2007~~6~~, June 1, 2008~~7~~, June 1, 2009~~8~~, and June 1, 2010~~9~~.

## 2.69 Unforced Capacity

"Unforced Capacity" shall have the meaning specified in the Reliability Assurance Agreement.

## 2.70 Variable Resource Requirement Curve

"Variable Resource Requirement Curve" shall mean a series of maximum prices that can be cleared in a Base Residual Auction for Unforced Capacity, corresponding to a series of varying resource requirements based on varying installed reserve margins, as determined by the Office of the Interconnection for the PJM Region and ~~each for certain~~ Locational Deliverability Areas in accordance with the methodology provided in Section 5.

## 2.71 Zonal Capacity Price

"Zonal Capacity Price" shall mean the clearing price required in each Zone to meet the demand for Unforced Capacity and satisfy Locational Deliverability Requirements and Resource Operational Reliability Requirements for the LDA or LDAs associated with such Zone. If the Zone contains multiple LDAs with different Capacity Resource Clearing Prices, the Zonal Capacity Price shall be a weighted average of the Capacity Resource Clearing Prices for such LDAs, weighted by the Unforced Capacity of Capacity Resources cleared in each such LDA.

## ~~2.71 Thirty Minute Start Requirement~~

~~"Thirty Minute Start Requirement" shall have the meaning specified in the Reliability Assurance Agreement.~~

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**Docket Nos. EL05-148 and**  
**ER05-1410**  
**September 29, 2006**

**Attachment E**  
**PJM Operating Agreement Revisions**  
**(Clean Version)**

# **OPERATING AGREEMENT**

## **RPM Revisions**

### **Clean version**

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#### **1.4A Authorized Commission.**

“Authorized Commission” shall mean (i) a State public utility commission within the geographic limits of the PJM Region that regulates the distribution or supply of electricity to retail customers and is legally charged with monitoring the operation of wholesale or retail markets serving retail suppliers or customers within its State or (ii) an association or organization comprised exclusively of State public utility commissions described in the immediately preceding clause (i).

#### **1.4B Authorized Person.**

“Authorized Person” shall mean a person who has executed a Non-Disclosure Agreement, and is authorized in writing by an Authorized Commission to receive and discuss confidential information. Authorized Persons may include attorneys representing an Authorized Commission, consultants and/or contractors directly employed by an Authorized Commission, provided however that consultants or contractors may not initiate requests for confidential information from the Office of the Interconnection or the PJM Market Monitor.

#### **1.5 Board Member.**

“Board Member” shall mean a member of the PJM Board.

#### **1.5A Applicable Regional Reliability Council.**

“Applicable Regional Reliability Council” shall mean the reliability council for the region in which a Member operates.

#### **1.5B Behind The Meter Generation.**

“Behind The Meter Generation” refers to a generating unit that delivers energy to load without using the Transmission System or any distribution facilities (unless the entity that owns or leases the distribution facilities has consented to such use of the distribution facilities and such consent has been demonstrated to the satisfaction of the Office of the Interconnection); provided, however, that Behind The Meter Generation does not include (i) at any time, any portion of such generating unit’s capacity that is designated as a Generation Capacity Resource, or (ii) in any hour, any portion of the output of such generating unit[s] that is sold to another entity for consumption at another electrical location or into the PJM Interchange Energy Market.



## **1.6 Capacity Resource.**

"Capacity Resource" have the meaning provided in the Reliability Assurance Agreement.

### **1.6A Consolidated Transmission Owners Agreement.**

"Consolidated Transmission Owners Agreement" dated as of December 15, 2005, by and among the Transmission Owners and by and between the Transmission Owners and PJM Interconnection, L.L.C.

## **1.7 Control Area.**

"Control Area" shall mean an electric power system or combination of electric power systems bounded by interconnection metering and telemetry to which a common automatic generation control scheme is applied in order to:

- (a) match the power output of the generators within the electric power system(s) and energy purchased from entities outside the electric power system(s), with the load within the electric power system(s);
- (b) maintain scheduled interchange with other Control Areas, within the limits of Good Utility Practice;
- (c) maintain the frequency of the electric power system(s) within reasonable limits in accordance with Good Utility Practice and the criteria of NERC and the applicable regional reliability council of NERC;
- (d) maintain power flows on transmission facilities within appropriate limits to preserve reliability; and
- (e) provide sufficient generating capacity to maintain operating reserves in accordance with Good Utility Practice.

### **1.7.01 Control Zone.**

"Control Zone" shall mean any of the ECAR Control Zone(s), MAAC Control Zone, or MAIN Control Zone(s), or the VACAR Control Zone.

### **1.7.02 Default Allocation Assessment.**

"Default Allocation Assessment" shall mean the assessment determined pursuant to section 15.2.2 of this Agreement.

### **1.7.03 Demand Resource.**

"Demand Resource" shall have the meaning provided in the Reliability Assurance Agreement.

### **1.7A [Reserved].**

### **1.7B [Reserved].**

### **1.7C ECAR.**

"ECAR" shall mean the reliability council under section 202 of the Federal Power Act, established pursuant to the ECAR Coordination Agreement dated June 1, 1968, or any successor thereto

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**1.9 Effective Date.**

"Effective Date" shall mean August 1, 1997, or such later date that FERC permits this Agreement to go into effect.

**1.10 Emergency.**

"Emergency" shall mean: (i) an abnormal system condition requiring manual or automatic action to maintain system frequency, or to prevent loss of firm load, equipment damage, or tripping of system elements that could adversely affect the reliability of an electric system or the safety of persons or property; or (ii) a fuel shortage requiring departure from normal operating procedures in order to minimize the use of such scarce fuel; or (iii) a condition that requires implementation of emergency procedures as defined in the PJM Manuals.

**1.11 End-Use Customer.**

"End-Use Customer" shall mean a Member that is a retail end-user of electricity within the PJM Region.

**1.12 FERC.**

"FERC" shall mean the Federal Energy Regulatory Commission or any successor federal agency, commission or department exercising jurisdiction over this Agreement.

**1.13 Finance Committee.**

"Finance Committee" shall mean the body formed pursuant to Section 7.5.1 of this Agreement.

**1.14 Generation Owner.**

"Generation Owner" shall mean a Member that owns or leases with rights equivalent to ownership facilities for the generation of electric energy that are located within the PJM Region. Purchasing all or a portion of the output of a generation facility shall not be sufficient to qualify a Member as a Generation Owner.

**1.14A Generation Capacity Resource.**

"Generation Capacity Resource" shall have the meaning provided in the Reliability Assurance Agreement.

**1.15 Good Utility Practice.**

"Good Utility Practice" shall mean any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather is intended to include acceptable practices, methods, or acts generally accepted in the region.

**1.16 Information Request.**

"Information Request" shall mean a written request, in accordance with the terms of this Agreement for disclosure of confidential information pursuant to Section 18.17.4 of this Agreement.

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**1.16A Interruptible Load for Reliability.**

"Interruptible Load for Reliability" or "ILR" shall have the meaning specified in the Reliability Assurance Agreement.

**1.17 LLC.**

"LLC" shall mean PJM Interconnection, L.L.C., a Delaware limited liability company.

**1.18 Load Serving Entity.**

“Load Serving Entity” shall mean an entity, including a load aggregator or power marketer, (1) serving end-users within the PJM Region, and (2) that has been granted the authority or has an obligation pursuant to state or local law, regulation or franchise to sell electric energy to end-users located within the PJM Region, or the duly designated agent of such an entity.

**1.19 Locational Marginal Price.**

“Locational Marginal Price” shall mean the hourly integrated market clearing marginal price for energy at the location the energy is delivered or received, calculated as specified in Section 2 of Schedule 1 of this Agreement.

**1.20 MAAC.**

“MAAC” shall mean the Mid-Atlantic Area Council, a reliability council under § 202 of the Federal Power Act established pursuant to the MAAC Agreement dated August 1, 1994 or any successor thereto.

**1.20A MAAC Control Zone.**

“MAAC Control Zone” shall mean the aggregate of the Transmission Facilities of Atlantic City Electric Company, Baltimore Gas and Electric Company, Delmarva Power and Light Company, Jersey Central Power and Light Company, Metropolitan Edison Company, PECO Energy Company, Pennsylvania Electric Company, PPL Electric Utilities Corporation, Potomac Electric Power Company, Public Service Electric and Gas Company, and Rockland Electric Company.

**1.20B MAIN.**

“MAIN” shall mean the Mid-America Interconnected Network, a reliability council under § 202 of the Federal Power Act established pursuant to the Amended and Restated Bylaws of MAIN, dated January 8, 1998, or any successor thereof.

**1.20C MAIN Control Zone.**

“MAIN Control Zone” shall mean any one of the one or more Control Zones comprised of the Transmission Facilities of one or more of the Transmission Owners for which MAIN is the Applicable Regional Reliability Council, as designated in the PJM Manuals.

**1.21 Market Buyer.**

“Market Buyer” shall mean a Member that has met reasonable creditworthiness standards established by the Office of the Interconnection and that is otherwise able to make purchases in the PJM Interchange Energy Market.

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Superseding Third Revised Sheet No. 21A

**1.22 Market Participant.**

"Market Participant" shall mean a Market Buyer, a Market Seller, an Economic Load Response Participant, or all three.

**1.23 Market Seller.**

"Market Seller" shall mean a Member that has met reasonable creditworthiness standards established by the Office of the Interconnection and that is otherwise able to make sales in the PJM Interchange Energy Market.

**1.24 Member.**

"Member" shall mean an entity that satisfies the requirements of Section 11.6 of this Agreement and that (i) is a member of the LLC immediately prior to the Effective Date, or (ii) has executed an Additional Member Agreement in the form set forth in Schedule 4 hereof.

**1.25 Members Committee.**

"Members Committee" shall mean the committee specified in Section 8 of this Agreement composed of representatives of all the Members.

**1.26 NERC.**

"NERC" shall mean the North American Electric Reliability Council, or any successor thereto.

### **1.35 PJM Manuals.**

"PJM Manuals" shall mean the instructions, rules, procedures and guidelines established by the Office of the Interconnection for the operation, planning, and accounting requirements of the PJM Region and the PJM Interchange Energy Market.

#### **1.35.01 PJM Market Monitor.**

"PJM Market Monitor" shall mean the Market Monitoring Unit established under Attachment M to the PJM Tariff.

#### **1.35A PJM Region.**

"PJM Region" shall mean the aggregate of the MAAC Control Zone, the PJM West Region, and VACAR Control Zone.

#### **1.35B PJM South Region.**

"PJM South Region" shall mean the VACAR Control Zone.

### **1.36 PJM Tariff.**

"PJM Tariff" shall mean the PJM Open Access Transmission Tariff providing transmission service within the PJM Region, including any schedules, appendices, or exhibits attached thereto, as in effect from time to time.

#### **1.36A [Reserved.]**

#### **1.36B PJM West Region.**

"PJM West Region" shall mean the aggregate of the ECAR Control Zone(s) and MAIN Control Zone(s).

### **1.37 Planning Period.**

"Planning Period" shall initially mean the 12 months beginning June 1 and extending through May 31 of the following year, or such other period established under the procedures of the Reliability Assurance Agreement.

### **1.38 President.**

"President" shall have the meaning specified in Section 9.2.

#### **1.38A Regulation Zone.**

"Regulation Zone" shall mean any of those one or more geographic areas, each consisting of a combination of one or more Control Zone(s) as designated by the Office of the Interconnection in the PJM Manuals, relevant to provision of, and requirements for, regulation service.

### **1.39 Related Parties.**

"Related Parties" shall mean, solely for purposes of the governance provisions of this Agreement: (i) any generation and transmission cooperative and one of its distribution cooperative members; and (ii) any joint municipal agency and one of its members. For purposes of this Agreement, representatives of state or federal government agencies shall not be deemed Related Parties with respect to each other, and a public body's regulatory authority, if any, over a Member shall not be deemed to make it a Related Party with respect to that Member.

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**1.40 Reliability Assurance Agreement.**

“Reliability Assurance Agreement” shall mean that certain Reliability Assurance Agreement Among Load-Serving Entities in the PJM Region, on file with FERC as PJM Interconnection, L.L.C. Rate Schedule FERC. No. 42 **[correct number reference]**, establishing obligations, standards and procedures for maintaining the reliable operation of the PJM Region.

**1.40A [Reserved].**

**1.40B [Reserved].**

**1.40C SERC.**

“SERC” or “Southeastern Electric Reliability Council” shall mean the reliability council under section 202 of the Federal Power Act established pursuant to the SERC Agreement dated January 14, 1970, or any successor thereto.

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#### **1.47A VACAR.**

"VACAR" shall mean the group of five companies, consisting of Duke Energy, Carolina Power and Light, South Carolina Public Service Authority, South Carolina Electric and Gas, and Virginia Electric and Power Company.

#### **1.47B VACAR Control Zone.**

"VACAR Control Zone" shall mean the Transmission Facilities of Virginia Electric and Power Company.

#### **1.48 Voting Member.**

"Voting Member" shall mean (i) a Member as to which no other Member is an Affiliate or Related Party, or (ii) a Member together with any other Members as to which it is an Affiliate or Related Party.

#### **1.49 Weighted Interest.**

"Weighted Interest" shall be equal to  $(0.1(1/N) + 0.5(B/C) + 0.2(D/E) + 0.2(F/G))$ , where:

N = the total number of Members excluding *ex officio* Members and State Consumer Advocates (which, for purposes of Section 15.2 of this agreement, shall be calculated as of five o'clock p.m. Eastern Time on the date PJM declares a Member in default)

B = the Member's internal peak demand for the previous calendar year (which, for Load Serving Entities under the Reliability Assurance Agreement, shall be that used to calculate Accounted For Obligation as determined by the Office of the Interconnection pursuant to Schedule 7 of the Reliability Assurance Agreement averaged over the previous calendar year)

C = the sum of factor B for all Members

D = the Member's generating capability from Generation Capacity Resources located in the PJM Region as of January 1 of the current calendar year, determined by the Office of the Interconnection pursuant to Schedule 9 of the Reliability Assurance Agreement

E = the sum of factor D for all Members

F = the sum of the Member's circuit miles of transmission facilities multiplied by the respective operating voltage for facilities 100 kV and above as of January 1 of the current calendar year

G = the sum of factor F for all Members

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(d) The Markets and Reliability Committee shall provide advice and recommendations concerning studies and analyses relating to the overall efficacy of the PJM Interchange Energy Market and in carrying out actions as may be initiated as a result thereof.

(e) The Markets and Reliability Committee shall provide advice and recommendations concerning revisions to the Operating Agreement, the Reliability Assurance Agreement, and the PJM Tariff that pertain to its areas of responsibility.

(f) The Markets and Reliability Committee shall make annual and timely recommendations concerning the generating capacity reserve requirement and related demand-side valuation factors for consideration by the Members Committee, in order to assist the Members Committee in making recommendations to the PJM Board of Managers.

(g) The Markets and Reliability Committee shall provide direction to the Market Implementation Committee, which committee shall report to the Markets and Reliability Committee. The Market Implementation Committee shall provide advice and recommendations to the Markets and Reliability Committee directed to the advancement and promotion of competitive wholesale electricity markets in the PJM Region, and perform such other functions as the Markets and Reliability Committee may direct from time to time.

(h) The Markets and Reliability Committee shall provide direction to the Operating Committee and Planning Committee, which committees shall report to the Markets and Reliability Committee. The Operating Committee shall advise the Markets and Reliability Committee and PJM on matters pertaining to the reliable and secure operation of the PJM Region and the PJM Interchange Energy Market, as appropriate, and other matters as the Markets and Reliability Committee may request. The Planning Committee shall advise the Markets and Reliability Committee and PJM on matters pertaining to system reliability, security, economy of service, and planning strategies and policies and other matters as the Markets and Reliability Committee may request. The Markets and Reliability Committee shall review technical recommendations and changes initiated by the Operating Committee and Planning Committees and provide comments as needed.

(i) The Markets and Reliability Committee shall perform such other functions, directly or through delegation to a Standing Committee, subcommittee, working group or task force reporting to the Markets and Reliability Committee, as the Members Committee may direct.

(j) The Markets and Reliability Committee shall create subcommittees, working groups or task forces when needed to assist in carrying out the duties and responsibilities of the Markets and Reliability Committee.

#### **8.6.2 [Reserved.]**

- iii) Prepare, maintain, update and disseminate the PJM Manuals;
- iv) Comply with NERC, and Applicable Regional Reliability Council operation and planning standards, principles and guidelines;
- v) Maintain an appropriately trained workforce, and such equipment and facilities, including computer hardware and software and backup power supplies, as necessary or appropriate to implement or administer this Agreement;
- vi) Direct the operation and coordinate the maintenance of the facilities of the PJM Region used for both load and reactive supply, so as to maintain reliability of service and obtain the benefits of pooling and interchange consistent with this Agreement, and the Reliability Assurance Agreement;
- vii) Direct the operation and coordinate the maintenance of the bulk power supply facilities of the PJM Region with such facilities and systems of others not party to this Agreement in accordance with agreements between the LLC and such other systems to secure reliability and continuity of service and other advantages of pooling on a regional basis;
- viii) Perform interchange accounting and maintain records pertaining to the operation of the PJM Interchange Energy Market and the PJM Region;
- ix) Notify the Members of the receipt of any application to become a Member, and of the action of the Office of the Interconnection on such application, including but not limited to the completion of integration of a new Member's system into the PJM Region, as specified in Section 11.6(f);
- x) Calculate the Weighted Interest and Default Allocation Assessment of each Member;
- xi) Maintain accurate records of the sectors in which each Voting Member is entitled to vote, and calculate the results of any vote taken in the Members Committee;
- xii) Furnish appropriate information and reports as are required to keep the Members regularly informed of the outlook for, the functioning of, and results achieved by the PJM Region;
- xiii) File with FERC on behalf of the Members any amendments to this Agreement or the Schedules hereto, any new Schedules hereto, and make any other regulatory filings on behalf of the Members or the LLC necessary to implement this Agreement;
- xiv) At the direction of the PJM Board, submit comments to regulatory authorities on matters pertinent to the PJM Region;

- xv) Consult with the standing or other committees established pursuant to Section 8.6(a) on matters within the responsibility of the committee;
- xvi) Perform operating studies of the bulk power supply facilities of the PJM Region and make such recommendations and initiate such actions as may be necessary to maintain reliable operation of the PJM Region;
- xvii) Accept, on behalf of the Members, notices served under this Agreement;
- xviii) Perform those functions and undertake those responsibilities transferred to it under the Consolidated Transmission Owners Agreement including (A) direct the operation of the transmission facilities of the parties to the East Transmission Owners Agreement (B) direct the operation of the transmission facilities of the Parties to the West Transmission Owners Agreement, (C) direct the operation of the transmission facilities of the Parties to the South Transmission Owner Agreement, (D) administer the PJM Tariff, and (E) administer the Regional Transmission Expansion Planning Protocol set forth as Schedule 6 to this Agreement;
- xix) Perform those functions and undertake those responsibilities transferred to it under the Reliability Assurance Agreement, as specified in Schedule 8 of this Agreement;
- xx) Monitor the operation of the PJM Region, ensure that appropriate Emergency plans are in place and appropriate Emergency drills are conducted, declare the existence of an Emergency, and direct the operations of the Members as necessary to manage, alleviate or end an Emergency;
- xxi) Incorporate the grid reliability requirements applicable to nuclear generating units in the PJM Region planning and operating principles and practices; and
- xxii) Initiate such legal or regulatory proceedings as directed by the PJM Board to enforce the obligations of this Agreement.

## **11. MEMBERS**

### **11.1 Management Rights.**

The Members or any of them shall not take part in the management of the business of, and shall not transact any business for, the LLC in their capacity as Members, nor shall they have power to sign for or to bind the LLC.

### **11.2 Other Activities.**

Except as otherwise expressly provided herein, any Member may engage in or possess any interest in another business or venture of any nature and description, independently or with others, even if such activities compete directly with the business of the LLC, and neither the LLC nor any Member hereof shall have any rights in or to any such independent ventures or the income or profits derived therefrom.

### **11.3 Member Responsibilities.**

#### **11.3.1 General.**

To facilitate and provide for the work of the Office of the Interconnection and of the several committees appointed by the Members Committee, each Member shall, to the extent applicable:

- (a) Maintain adequate records and, subject to the provisions of this Agreement for the protection of the confidentiality of proprietary or commercially sensitive information, provide data required for (i) coordination of operations, (ii) accounting for all interchange transactions, (iii) preparation of required reports, (iv) coordination of planning, including those data required for capacity accounting under the Reliability Assurance Agreement; (v) preparation of maintenance schedules, (vi) analysis of system disturbances, and (vii) such other purposes, including those set forth in Schedule 2, as will contribute to the reliable and economic operation of the PJM Region;
- (b) Provide such recording, telemetering, revenue quality metering, communication and control facilities as are required for the coordination of its operations with the Office of the Interconnection and those of the other Members and to enable the Office of the Interconnection to operate the PJM Region and otherwise implement and administer this Agreement, including equipment required in normal and Emergency operations and for the recording and analysis of system disturbances;
- (c) Provide adequate and properly trained personnel to (i) permit participation in the coordinated operation of the PJM Region (ii) meet its obligation on a timely basis for supply of records and data, (iii) serve on committees and participate in their investigations, and (iv) share in the representation of the Interconnection in inter-regional and national reliability activities. Minimum training for Members that operate Market Operations Centers and local control centers shall include compliance with the applicable training standards and requirements in PJM Manual 01, Control Center Requirements, including the PJM System Operator Training Requirements in Attachment C;
- (d) Share in the costs of committee activities and investigations (including costs of consultants, computer time and other appropriate items), communication facilities used by all the Members (in addition to those provided in the Office of the Interconnection), and such other expenses as are approved for payment by the PJM Board, such costs to be recovered as provided in Schedule 3;
- (e) Comply with the requirements of the PJM Manuals and all directives of the Office of the Interconnection to take any action for the purpose of managing, alleviating or ending an Emergency, and authorize the Office of the Interconnection to direct the transfer or interruption of the delivery of energy on their behalf to meet an Emergency and to implement agreements with other Control Areas interconnected with the PJM Region for the mutual provision of service to meet an Emergency, and be subject to the emergency procedure charges specified in Schedule 9 of this Agreement for any failure to follow the Emergency instructions of the Office of the Interconnection. In addressing any Emergency, the Office of the Interconnection shall comply with the terms of any reserve sharing agreements in effect for any part of the PJM Region.

#### **11.3.2 Facilities Planning and Operation.**

Consistent with and subject to the requirements of this Agreement, the PJM Tariff, the governing agreements of the Applicable Regional Reliability Councils, the Reliability Assurance Agreement, the Consolidated Transmission Owners Agreement, and the PJM Manuals, each Member shall

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cooperate with the other Members in the coordinated planning and operation of the facilities of its System within the PJM Region so as to obtain the greatest practicable degree of reliability, compatible economy and other advantages from such coordinated planning and operation. In furtherance of such cooperation each Member shall, as applicable:

(a) Consult with the other Members and the Office of the Interconnection, and coordinate the installation of its electric generation and Transmission Facilities with those of such other Members so as to maintain reliable service in the PJM Region;

(b) Coordinate with the other Members, the Office of the Interconnection and with others in the planning and operation of the regional facilities to secure a high level of reliability and continuity of service and other advantages;

(c) Cooperate with the other Members and the Office of the Interconnection in the implementation of all policies and procedures established pursuant to this Agreement for dealing with Emergencies, including but not limited to policies and procedures for maintaining or arranging for a portion of a Member's Generation Capacity Resources, at least equal to the applicable levels established from time to time by the Office of the Interconnection, to have the ability to go from a shutdown condition to an operating condition and start delivering power without assistance from the power system;

(d) Cooperate with the members of the Applicable Regional Reliability Councils to augment the reliability of the bulk power supply facilities of the region and comply with Applicable Regional Reliability Councils and NERC operating and planning standards, principles and guidelines and the PJM Manuals implementing such standards, principles and guidelines;

(e) Obtain or arrange for transmission service as appropriate to carry out this Agreement;

(f) Cooperate with the Office of the Interconnection's coordination of the operating and maintenance schedules of the Member's generating and Transmission Facilities with the facilities of other Members to maintain reliable service to its own customers and those of the other Members and to obtain economic efficiencies consistent therewith;

(g) Cooperate with the other Members and the Office of the Interconnection in the analysis, formulation and implementation of plans to prevent or eliminate conditions that impair the reliability of the PJM Region; and

(h) Adopt and apply standards adopted pursuant to this Agreement and conforming to NERC, and Applicable Regional Reliability Council standards, principles and guidelines and the PJM Manuals, for system design, equipment ratings, operating practices and maintenance practices.

### **11.3.3 Electric Distributors.**

In addition to any of the foregoing responsibilities that may be applicable, each Member that is an Electric Distributor, whether or not that Member votes in the Members Committee in the Electric Distributor sector or meets the eligibility requirements for any other sector of the Members Committee, shall:

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(a) Accept, comply with or be compatible with all standards applicable within the PJM Region with respect to system design, equipment ratings, operating practices and maintenance practices as set forth in the PJM Manuals, or be subject to an interconnected Member's requirements relating to the foregoing, so that sufficient electrical equipment, control capability, information and communication are available to the Office of the Interconnection for planning and operation of the PJM Region;

(b) Assure the continued compatibility of its local system energy management system monitoring and telecommunications systems to satisfy the technical requirements of interacting automatically or manually with the Office of the Interconnection as it directs the operation of the PJM Region;

(c) Maintain or arrange for a portion of its connected load to be subject to control by automatic underfrequency, under-voltage, or other load-shedding devices at least equal to the levels established pursuant to the Reliability Assurance Agreement, or be subject to another Member's control for these purposes;

(d) Provide or arrange for sufficient reactive capability and voltage control facilities to conform to Good Utility Practice and (i) to meet the reactive requirements of its system and customers and (ii) to maintain adequate voltage levels and the stability required by the bulk power supply facilities of the PJM Region;

(e) Shed connected load, share Generation Capacity Resources, initiate Interruptible Load for Reliability programs, and take such other coordination actions as may be necessary in accordance with the directions of the Office of the Interconnection in Emergencies;

(f) Maintain or arrange for a portion of its Generation Capacity Resources at least equal to the level established pursuant to the Reliability Assurance Agreement to have the ability to go from a shutdown condition to an operating condition and start delivering power without assistance from the power system;

(g) Provide or arrange through another Member for the services of a 24-hour local control center to coordinate with the Office of the Interconnection, each such control center to be furnished with appropriate telemetry equipment as specified in the PJM Manuals, and to be staffed by system operators trained and delegated sufficient authority to take any action necessary to assure that the system for which the operator is responsible is operated in a stable and reliable manner. In addition to meeting any training standards and requirements specified in this Agreement, local control center staff shall be required to meet applicable training standards and requirements in PJM Manual 01, Control Center Requirements, including the PJM System Operator Training Requirements in Attachment C;

(h) Provide to the Office of the Interconnection all System, accounting, customer tracking, load forecasting (including all load to be served from its System) and other data necessary or appropriate to implement or administer this Agreement, and the Reliability Assurance Agreement; and

(i) Comply with the underfrequency relay obligations and charges specified in Schedule 7 of this Agreement.

### **11.3.4 Reports to the Office of the Interconnection.**

Each Member shall report as promptly as possible to the Office of the Interconnection any changes in its operating practices and procedures relating to the reliability of the bulk power supply facilities of the PJM Region. The Office of the Interconnection shall review such reports, and if any change in an operating practice or procedure of the Member is not in accord with the established operating principles, practices and procedures for the PJM Region and such change adversely affects such region and regional reliability, it shall so inform such Member, and the other Members through their representative on the Operating Committee, and shall direct that such change be modified to conform to the established operating principles, practices and procedures.

### **11.4 Regional Transmission Expansion Planning Protocol.**

The Members shall participate in regional transmission expansion planning in accordance with the Regional Transmission Expansion Planning Protocol set forth in Schedule 6 to this Agreement.

### **11.5 Member Right to Petition.**

(a) Nothing herein shall deprive any Member of the right to petition FERC to modify any provision of this Agreement or any Schedule or practice hereunder that the petitioning Member believes to be unjust, unreasonable, or unduly discriminatory under section 206 of the Federal Power Act, subject to the right of any other Member (a) to oppose said proposal, or (b) to withdraw from the LLC pursuant to Section 4.1.

(b) Nothing herein shall be construed as affecting in any way the right of the Members, acting pursuant to a vote of the Members Committee as specified in Section 8.4, unilaterally to make an application to FERC for a change in any rate, charge, classification, tariff or service, or any rule or regulation related thereto, under section 205 of the Federal Power Act and pursuant to the rules and regulations promulgated by FERC thereunder, subject to the right of any Member that voted against such change in any rate, charge, classification, tariff or service, or any rule or regulation related thereto, to intervene in opposition to any such application.

### **11.6 Membership Requirements.**

(a) To qualify as a Member, an entity shall:

- i) Be a Transmission Owner, a Generation Owner, an Other Supplier, an Electric Distributor, or an End-Use Customer; and
- ii) Accept the obligations set forth in this Agreement.

(b) Certain Members that are Load Serving Entities are parties to the Reliability Assurance Agreement. Upon becoming a Member, any entity that is a Load Serving Entity in the PJM Region and that wishes to become a Market Buyer shall also simultaneously execute the Reliability Assurance Agreement.

(c) An entity that wishes to become a party to this Agreement shall apply, in writing, to the President setting forth its request, its qualifications for membership, its agreement to supply data as specified in this Agreement, its agreement to pay all costs and expenses in accordance with Schedule 3, and providing all information specified pursuant to the Schedules to this Agreement for entities that wish to become Market Participants. Any such application that meets all applicable requirements shall be approved by the President within sixty (60) days.

(d) Nothing in this Section 11 is intended to remove, in any respect, the choice of participation by other utility companies or organizations in the operation of the PJM Region through inclusion in the System of a Member.

(e) An entity whose application is accepted by the President pursuant to Section 11.6(c) shall execute a supplement to this Agreement in substantially the form prescribed in Schedule 4, which supplement shall be countersigned by the President. The entity shall become a Member effective on the date the supplement is countersigned by the President.

(f) Entities whose applications contemplate expansion or rearrangement of the PJM Region may become Members promptly as described in Sections 11.6(c) and 11.6(e) above, but the integration of the applicant's system into all of the operation and accounting provisions of this Agreement and the Reliability Assurance Agreement, shall occur only after completion of all required installations and modifications of metering, communications, computer programming, and other necessary and appropriate facilities and procedures, as determined by the Office of the Interconnection. The Office of the Interconnection shall notify the other Members when such integration has occurred.

(g) Entities that become Members will be listed in Schedule 12 of this Agreement.

(h) In accordance with the MAAC Agreement, a Member serving load in the MAAC Control Zone shall be a member of MAAC and any other Member may be a member of MAAC.

## **12. TRANSFERS OF MEMBERSHIP INTEREST**

The rights and obligations created by this Agreement shall inure to and bind the successors and assigns of such Member; provided, however, that the rights and obligations of any Member hereunder shall not be assigned without the approval of the Members Committee except as to a successor in operation of a Member's electric operating properties by reason of a merger, consolidation, reorganization, sale, spin-off, or foreclosure, as a result of which substantially all such electric operating properties are acquired by such a successor, and such successor becomes a Member.

## **13. INTERCHANGE**

### **13.1 Interchange Arrangements with Non-Members.**

Any Member may enter into interchange arrangements with others that are not Members with respect to the delivery or receipt of capacity and energy to fulfill its obligations hereunder or for any other purpose, subject to the standards and requirements established in or pursuant to this Agreement.



**1.3.13 Maximum Generation Emergency.**

"Maximum Generation Emergency" shall mean an Emergency declared by the Office of the Interconnection in which the Office of the Interconnection anticipates requesting one or more Generation Capacity Resources to operate at its maximum net or gross electrical power output, subject to the equipment stress limits for such Generation Capacity Resource, in order to manage, alleviate, or end the Emergency.

**1.3.14 Minimum Generation Emergency.**

"Minimum Generation Emergency" shall mean an Emergency declared by the Office of the Interconnection in which the Office of the Interconnection anticipates requesting one or more generating resources to operate at or below Normal Minimum Generation, in order to manage, alleviate, or end the Emergency.

**1.3.14A NERC Interchange Distribution Calculator.**

"NERC Interchange Distribution Calculator" shall mean the NERC mechanism that is in effect and being used to calculate the distribution of energy, over specific transmission interfaces, from energy transactions.

**1.3.15 Network Resource.**

"Network Resource" shall have the meaning specified in the PJM Tariff.

**1.3.16 Network Service User.**

"Network Service User" shall mean an entity using Network Transmission Service.

**1.3.17 Network Transmission Service.**

"Network Transmission Service" shall mean transmission service provided pursuant to the rates, terms and conditions set forth in Part III of the PJM Tariff, or transmission service comparable to such service that is provided to a Load Serving Entity that is also a Transmission Owner.

**1.3.18 Normal Maximum Generation.**

"Normal Maximum Generation" shall mean the highest output level of a generating resource under normal operating conditions.

**1.3.19 Normal Minimum Generation.**

"Normal Minimum Generation" shall mean the lowest output level of a generating resource under normal operating conditions.

**1.3.20 Offer Data.**

"Offer Data" shall mean the scheduling, operations planning, dispatch, new resource, and other data and information necessary to schedule and dispatch generation resources and Demand Resource(s)

(b) An applicant that is a Load Serving Entity or that will purchase on behalf of or for ultimate delivery to a Load Serving Entity shall establish to the satisfaction of the Office of the Interconnection that the end-users that will be served through energy and related services purchased in the PJM Interchange Energy Market, are located electrically within the PJM Region, or will be brought within the PJM Region prior to any purchases from the PJM Interchange Energy Market. Such applicant shall further demonstrate that:

- i) The Load Serving Entity for the end users is obligated to meet the requirements of the Reliability Assurance Agreement; and
- ii) The Load Serving Entity for the end users has arrangements in place for Network Transmission Service or Point-To-Point Transmission Service for all PJM Interchange Energy Market purchases.

(c) An applicant that is not a Load Serving Entity or purchasing on behalf of or for ultimate delivery to a Load Serving Entity shall demonstrate that:

- i) The applicant has obtained or will obtain Network Transmission Service or Point-to-Point Transmission Service for all PJM Interchange Energy Market purchases; and
- ii) The applicant's PJM Interchange Energy Market purchases will ultimately be delivered to a load in another Control Area that is recognized by NERC and that complies with NERC's standards for operating and planning reliable bulk electric systems.

(d) An applicant shall not be required to obtain transmission service for purchases from the PJM Interchange Energy Market to cover quantity deviations from its sales in the Day-ahead Energy Market.

(e) All applicants shall demonstrate that:

- i) The applicant is capable of complying with all applicable metering, data storage and transmission, and other reliability, operation, planning and accounting standards and requirements for the operation of the PJM Region and the PJM Interchange Energy Market;
- ii) The applicant meets the creditworthiness standards established by the Office of the Interconnection, or has provided a letter of credit or other form of security acceptable to the Office of the Interconnection; and
- iii) The applicant has paid all applicable fees and reimbursed the Office of the Interconnection for all unusual or extraordinary costs of processing and evaluating its application to become a Market Buyer, and has agreed in its application to subject any disputes arising from its application to the PJM Dispute Resolution Procedures.

(f) The applicant shall become a Market Buyer upon a final favorable determination on its application by the Office of the Interconnection as specified below, and execution by the applicant of counterparts of this Agreement.

#### **1.4.2 Submission of Information.**

The applicant shall furnish all information reasonably requested by the Office of the Interconnection in order to determine the applicant's qualification to be a Market Buyer. The Office of the Interconnection may waive the submission of information relating to any of the foregoing criteria, to the extent the information in the Office of the Interconnection's possession is sufficient to evaluate the application against such criteria.

#### **1.4.3 Fees and Costs.**

The Office of the Interconnection shall require all applicants to become a Market Buyer to pay a uniform application fee, initially in the amount of \$1,500, to defray the ordinary costs of processing such applications. The application fee shall be revised from time to time as the Office of the Interconnection shall determine to be necessary to recover its ordinary costs of processing applications. Any unusual or extraordinary costs incurred by the Office of the Interconnection in processing an application shall be reimbursed by the applicant.

#### **1.4.4 Office of the Interconnection Determination.**

Upon submission of the information specified above, and such other information as shall reasonably be requested by the Office of the Interconnection, the Office of the Interconnection shall undertake an evaluation and investigation to determine whether the applicant meets the criteria specified above. As soon as practicable, but in any event not later than 60 days after submission of the foregoing information, or such later date as may be necessary to satisfy the requirements of the Reliability Assurance Agreement, the Office of the Interconnection shall notify the applicant and the members of the Members Committee of its determination, along with a written summary of the basis for the determination. The Office of the Interconnection shall respond promptly to any reasonable and timely request by a Member for additional information regarding the basis for the Office of the Interconnection's determination, and shall take such action as it shall deem appropriate in response to any request for reconsideration or other action submitted to the Office of the Interconnection not later than 30 days from the initial notification to the Members Committee.

#### **1.4.5 Existing Participants.**

Any entity that was qualified to participate as a Market Buyer in the PJM Interchange Energy Market under the Operating Agreement of PJM Interconnection L.L.C. in effect immediately prior to the Effective Date shall continue to be qualified to participate as a Market Buyer in the PJM Interchange Energy Market under this Agreement.

#### **1.4.6 Withdrawal.**

(a) An Internal Market Buyer that is a Load Serving Entity may withdraw from this Agreement by giving written notice to the Office of the Interconnection specifying an effective date of withdrawal not earlier than the effective date of (i) its withdrawal from the Reliability Assurance Agreement, or (ii) the assumption of its obligations under the Reliability Assurance Agreement by an agent that is a Market Buyer.

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## **1.6 Office of the Interconnection.**

### **1.6.1 Operation of the PJM Interchange Energy Market.**

The Office of the Interconnection shall operate the PJM Interchange Energy Market in accordance with this Agreement.

### **1.6.2 Scope of Services.**

The Office of the Interconnection shall, on behalf of the Market Participants, perform the services pertaining to the PJM Interchange Energy Market specified in this Agreement, including but not limited to the following:

- i) Administer the PJM Interchange Energy Market as part of the PJM Region, including scheduling and dispatching of generation resources, accounting for transactions, rendering bills to the Market Participants, receiving payments from and disbursing payments to the Market Participants, maintaining appropriate records, and monitoring the compliance of Market Participants with the provisions of this Agreement, all in accordance with applicable provisions of the Office of the Interconnection Agreement, and the Schedules to this Agreement;
- ii) Review and evaluate the qualification of entities to be Market Buyers, Market Sellers, or Economic Load Response Participants under applicable provisions of this Agreement;
- iii) Coordinate, in accordance with applicable provisions of this Agreement, the Reliability Assurance Agreement, and the Consolidated Transmission Owners Agreement, maintenance schedules for generation and transmission resources operated as part of the PJM Region;
- iv) Provide or coordinate the provision of ancillary services necessary for the operation of the PJM Region or the PJM Interchange Energy Market;
- v) Determine and declare that an Emergency is expected to exist, exists, or has ceased to exist, in all or any part of the PJM Region, or in another directly or indirectly interconnected Control Area and serve as a primary point of contact for interested state or federal agencies;
- vi) Enter into (a) agreements for the transfer of energy in conditions constituting an Emergency in the PJM Region or in an interconnected Control Area, and the mutual provision of other support in such Emergency conditions with other interconnected Control Areas, and (b) purchases of Emergency energy offered by Members from resources that are not Capacity Resources in conditions constituting an Emergency in the PJM Region;

### **1.7.9 Delivery to an External Market Buyer.**

A purchase of Spot Market Energy by an External Market Buyer shall be delivered to a bus or buses at the electrical boundaries of the PJM Region specified by the Office of the Interconnection, or to load in such area that is not served by Network Transmission Service, using Point-to-Point Transmission Service paid for by the External Market Buyer. Further delivery of such energy shall be the responsibility of the External Market Buyer.

### **1.7.10 Other Transactions.**

(a) Market Participants may enter into bilateral contracts for the purchase or sale of electric energy to or from each other or any other entity, subject to the obligations of Market Participants to make Generation Capacity Resources available for dispatch by the Office of the Interconnection. Bilateral arrangements that contemplate the physical transfer of energy to or from a Market Participant shall be reported to and coordinated with the Office of the Interconnection in accordance with this Schedule.

(b) Market Participants shall have Spot Market Backup with respect to all bilateral transactions that are not dynamically scheduled pursuant to Section 1.12 and that are curtailed or interrupted for any reason (except for curtailments or interruptions through active load management for load located within the PJM Region).

(c) To the extent the Office of the Interconnection dispatches a Generating Market Buyer's generation resources, such Generating Market Buyer may elect to net the output of such resources against its hourly Equivalent Load. Such a Generating Market Buyer shall be deemed a buyer from the PJM Interchange Energy Market to the extent of its PJM Interchange Imports, and shall be deemed a seller to the PJM Interchange Energy Market to the extent of its PJM Interchange Exports.

(d) A Market Seller may self-supply Station Power for its generation facility in accordance with the following provisions:

- (i) A Market Seller may self-supply Station Power for its generation facility during any month (1) when the net output of such facility is positive, or (2) when the net output of such facility is negative and the Market Seller during the same month has available at other of its generation facilities positive net output in an amount at least sufficient to offset fully such negative net output. For purposes of this subsection (d), "net output" of a generation facility during any month means the facility's gross energy output, less the Station Power requirements of such facility, during that month. The determination of a generation facility's or a Market Seller's monthly net output under this subsection (d) will apply only to determine whether the Market Seller self-supplied Station Power during the month and will not affect the price of energy sold or consumed by the Market Seller at any bus during any hour during the month. For

(b) The Office of the Interconnection shall obtain and maintain for each Synchronized Reserve Zone an amount of Synchronized Reserve equal to the Synchronized Reserve objective for such Synchronized Reserve Zone, as specified in the PJM Manuals.

(c) The Synchronized Reserve capability of a generation resource and Demand Resource shall be the increase in energy output or load reduction achievable by the generation resource and Demand Resource within a continuous 10-minute period.

(d) A generation unit capable of automatic energy dispatch that also is providing Synchronized Reserve shall have its energy dispatch range reduced by the amount of the Synchronized Reserve provided. The amount of Synchronized Reserve provided by a generation unit shall serve to redefine the Normal Maximum Generation energy limit of that generation unit in that the amount of Synchronized Reserve provided shall be subtracted from its Normal Maximum Generation energy limit.

#### **1.7.20 Communication and Operating Requirements.**

(a) Market Participants. Each Market Participant shall have, or shall arrange to have, its transactions in the PJM Interchange Energy Market subject to control by a Market Operations Center, with staffing and communications systems capable of real-time communication with the Office of the Interconnection during normal and Emergency conditions and of control of the Market Participant's relevant load or facilities sufficient to meet the requirements of the Market Participant's transactions with the PJM Interchange Energy Market, including but not limited to the following requirements as applicable.

(b) Market Sellers selling from generation resources and/or Demand Resources within the PJM Region shall: report to the Office of the Interconnection sources of energy and Demand Resources available for operation; supply to the Office of the Interconnection all applicable Offer Data; report to the Office of the Interconnection generation resources and Demand Resources that are self-scheduled; with respect to generation resources, report to the Office of the Interconnection bilateral sales transactions to buyers not within the PJM Region; confirm to the Office of the Interconnection bilateral sales to Market Buyers within the PJM Region; respond to the Office of the Interconnection's directives to start, shutdown or change output levels of generation units, or change scheduled voltages or reactive output levels of generation units, or reduce load from Demand Resources; continuously maintain all Offer Data concurrent with on-line operating information; and ensure that, where so equipped, generating equipment and Demand Resources are operated with control equipment functioning as specified in the PJM Manuals.

(c) Market Sellers selling from generation resources outside the PJM Region shall: provide to the Office of the Interconnection all applicable Offer Data, including offers specifying amounts of energy available, hours of availability and prices of energy and other services; respond to Office of the Interconnection directives to schedule delivery or change delivery schedules; and communicate delivery schedules to the Market Seller's Control Area.

(d) Market Participants that are Load Serving Entities or purchasing on behalf of Load Serving Entities shall: respond to Office of the Interconnection directives for load management steps; report to the Office of the Interconnection Generation Capacity Resources to satisfy capacity obligations that are available for pool operation; report to the Office of the Interconnection all bilateral purchase transactions; respond to other Office of the Interconnection directives such as those required during Emergency operation.

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adequately resolved, or discloses a need for changes in standards or policies established in or pursuant to the Operating Agreement, any of the foregoing parties may make a written request for review of the matter by the Members Committee, and shall include with the request the forwarding party's recommendation and such data or information (subject to confidentiality or other non-disclosure requirements) as would enable the Members Committee to assess the matter and the recommendation. The Members Committee shall take such action on the recommendation as it shall deem appropriate.

(d) Subject to the right of a Market Participant to obtain correction of accounting or billing errors, the LLC or a Market Participant shall not be entitled to actual, compensatory, consequential or punitive damages, opportunity costs, or other form of reimbursement from the LLC or any other Market Participant for any loss, liability or claim, including any claim for lost profits, incurred as a result of a mistake, error or other fault by the Office of the Interconnection in the selection, scheduling or dispatch of resources.

### **1.9 Prescheduling.**

The following procedures and principles shall govern the prescheduling activities necessary to plan for the reliable operation of the PJM Region and for the efficient operation of the PJM Interchange Energy Market.

#### **1.9.1 Outage Scheduling.**

The Office of the Interconnection shall be responsible for coordinating and approving requests for outages of generation and transmission facilities as necessary for the reliable operation of the PJM Region, in accordance with the PJM Manuals. The Office of the Interconnection shall maintain records of outages and outage requests of these facilities.

#### **1.9.2 Planned Outages.**

(a) A Generator Planned Outage shall be included in Generator Planned Outage schedules established prior to the scheduled start date for the outage, in accordance with standards and procedures specified in the PJM Manuals.

(b) The Office of the Interconnection shall conduct Generator Planned Outage scheduling for Generation Capacity Resources in accordance with the Reliability Assurance Agreement and the PJM Manuals and in consultation with the Members owning or controlling the output of such resources. A Market Participant shall not be expected to submit offers for the sale of energy or other services, or to satisfy delivery obligations, from all or part of a generation resource undergoing an approved Generator Planned Outage. If the Office of the Interconnection determines that approval of a Generator Planned Outage would significantly affect the reliable operation of the PJM Region, the Office of the Interconnection may withhold approval or withdraw a prior approval. Approval for a Generator Planned Outage of a Generation Capacity Resource shall be withheld or withdrawn only as necessary to ensure the adequacy of reserves or the reliability of the PJM Region in connection with anticipated implementation or avoidance of Emergency procedures. If the Office of the Interconnection withholds or withdraws approval, it shall coordinate with the Market Participant owning or controlling the resource to reschedule the

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Generator Planned Outage of the Generation Capacity Resource at the earliest practical time. The Office of the Interconnection shall if possible propose alternative schedules with the intent of minimizing the economic impact on the Market Participant of a Generator Planned Outage.

(c) The Office of the Interconnection shall conduct Transmission Planned Outage scheduling in accordance with procedures specified in, the Consolidated Transmission Owners Agreement, and the PJM Manuals, and in accordance with the following procedures:

- (i) Transmission Owners shall submit Transmission Planned Outage schedules one year in advance for all outages that are expected to exceed five working days duration or that are anticipated to result in significant system impacts, with regular (at least monthly) updates as new information becomes available.
- (ii) Transmission Owners shall submit notice of all Transmission Planned Outages to the Office of the Interconnection by the first day of the month preceding the month the outage will commence, with updates as new information becomes available.
- (iii) If notice of a Transmission Planned Outage is not provided by the first day of the month preceding the month the outage will commence, and if such outage is determined by the Office of the Interconnection to have the potential to cause transmission system congestion, then the Office of the Interconnection may require the Transmission Owner to implement an alternative outage schedule to reduce or avoid the congestion. The Office of the Interconnection shall perform this analysis and notify the Transmission Owner in a timely manner if it will require rescheduling of the outage.
- (iv) The Office of the Interconnection shall post notice of Transmission Planned Outages on OASIS upon receipt of such notice from the Transmission Owner; provided, however, that the Office of the Interconnection shall not post on OASIS notice of any component of a Transmission Planned Outage to the extent such component shall directly reveal a generator outage. In such cases, the Transmission Owner, in addition to providing notice to the Office of Interconnection as required above, concurrently shall inform the affected Generation Owner of such outage, limiting such communication to that necessary to describe the outage and to coordinate with the Generation Owner on matters of safety to persons, facilities, and equipment. The Transmission Owner shall not notify any other Market Participant of such outage and shall arrange any other necessary coordination through the Office of the Interconnection.

In addition, if the Office of the Interconnection determines that transmission maintenance schedules proposed by one or more Members would significantly affect the efficient and reliable operation of the PJM Region, the Office of the Interconnection may establish alternative schedules, but



such alternative shall minimize the economic impact on the Member or Members whose maintenance schedules the Office of the Interconnection proposes to modify.

(d) The Office of the Interconnection shall coordinate resolution of outage or other planning conflicts that may give rise to unreliable system conditions. The Members shall comply with all maintenance schedules established by the Office of the Interconnection.

### **1.9.3 Generator Maintenance Outages.**

A Market Participant may request approval for a Generator Maintenance Outage of any Generation Capacity Resource from the Office of the Interconnection in accordance with the timetable and other procedures specified in the PJM Manuals. The Office of the Interconnection shall approve requests for Generator Maintenance Outages for such a Generation Capacity Resource unless the outage would threaten the adequacy of reserves in, or the reliability of, the PJM Region. A Market Participant shall not be expected to submit offers for the sale of energy or other services, or to satisfy delivery obligations, from a generation resource undergoing an approved full or partial Generator Maintenance Outage.

### **1.9.4 Forced Outages.**

(a) Each Market Seller that owns or controls a pool-scheduled resource, or a Generation Capacity Resource whether or not pool-scheduled, shall: (i) advise the Office of the Interconnection of a Generator Forced Outage suffered or anticipated to be suffered by any such resource as promptly as possible; (ii) provide the Office of the Interconnection with the expected date and time that the resource will be made available; and (iii) make a record of the events and circumstances giving rise to the Generator Forced Outage. A Market Seller shall not be expected to submit offers for the sale of energy or other services, or satisfy delivery obligations, from a generation resource undergoing a Generator Forced Outage. A Generation Capacity Resource that does not deliver all or part of its scheduled energy shall be deemed to have experienced a Generator Forced Outage with respect to such undelivered energy, in accordance with standards and procedures for full and partial Generator Forced Outages specified in the Reliability Assurance Agreement, and the PJM Manuals.

(b) The Office of the Interconnection shall receive notification of Forced Transmission Outages, and information on the return to service, of Transmission Facilities in the PJM Region in accordance with standards and procedures specified in, as applicable, the Consolidated Transmission Owners Agreement and the PJM Manuals.

### **1.9.4A Transmission Outage Acceleration.**

(a) Planned Transmission Outages and Forced Transmission Outages otherwise scheduled pursuant to sections 1.9.2 and 1.9.4 respectively of this Schedule may be accelerated or rescheduled at the request of a Generation Owner or other Market Participant in accordance with the terms and conditions of this section 1.9.4A and the PJM Manuals.

shall provide detailed data justifying such transmission facility ratings when directed by the Office of the Interconnection.

(b) In addition to the seasonal verification of all ratings, each Transmission Owner shall submit to the Operations Planning Department (or successor Department) of the Office of the Interconnection updates to its transmission facility ratings as soon as such Transmission Owner is aware of any changes. Such Transmission Owner shall provide the Office of the Interconnection with detailed data justifying all such transmission facility ratings changes.

(c) All Transmission Owners shall submit to the Operations Planning Department (or successor Department) of the Office of the Interconnection formal documentation of any procedure for changing facility ratings under specific conditions, including: the detailed conditions under which such procedures will apply, detailed explanations of such procedures, and detailed calculations justifying such pre-established changes to facility ratings. Such procedures must be updated twice each year consistent with the provisions of this Section.

### **1.9.9 Office of the Interconnection Responsibilities.**

(a) The Office of the Interconnection shall perform seasonal operating studies to assess the forecasted adequacy of generating reserves and of the transmission system, in accordance with the procedures specified in the PJM Manuals.

(b) The Office of the Interconnection shall maintain and update tables setting forth Operating Reserve and other reserve objectives as specified in the PJM Manuals and as consistent with the Reliability Assurance Agreement.

(c) The Office of the Interconnection shall receive and process requests for firm and non-firm transmission service in accordance with procedures specified in the PJM Tariff.

(d) The Office of the Interconnection shall maintain such data and information relating to generation and transmission facilities in the PJM Region as may be necessary or appropriate to conduct the scheduling and dispatch of the PJM Interchange Energy Market and PJM Region.

(e) The Office of the Interconnection shall maintain an historical database of all transmission facility ratings, and shall review, and may modify or reject, any submitted change or any submitted procedure for pre-established transmission facility rating changes. Any dispute between a Transmission Owner and the Office of the Interconnection concerning transmission facility ratings shall be resolved in accordance with the dispute resolution procedures in schedule 5 to the Operating Agreement; provided, however, that the rating level determined by the Office of the Interconnection shall govern and be effective during the pendency of any such dispute.

(f) The Office of the Interconnection shall coordinate with other interconnected Control Area as necessary to manage, alleviate or end an Emergency.

### **1.10 Scheduling.**

#### **1.10.1 General.**

(a) The Office of the Interconnection shall administer scheduling processes to implement a Day-ahead Energy Market and a Real-time Energy market.

each such self-scheduled resource will disconnect or reduce output, or confirmation of the Market Buyer's intent not to reduce output.

(c) All Market Participants shall submit to the Office of the Interconnection schedules for any bilateral transactions involving use of generation or Transmission Facilities as specified below, and shall inform the Office of the Interconnection whether the transaction is to be included in the Day-ahead Energy Market. Any Market Participant that elects to include a bilateral transaction in the Day-ahead Energy Market may specify the price (such price not to exceed the maximum price that may be specified in the PJM Manuals), if any, at which it will be wholly or partially curtailed rather than pay Transmission Congestion Charges. The foregoing price specification shall apply to the price difference between the specified bilateral transaction source and sink points in the day-ahead scheduling process only. Any Market Participant that elects not to include its bilateral transaction in the Day-ahead Energy Market shall inform the Office of the Interconnection if the parties to the transaction are not willing to incur Transmission Congestion Charges in the Real-time Energy Market in order to complete any such scheduled bilateral transaction. Scheduling of bilateral transactions shall be conducted in accordance with the specifications in the PJM Manuals and the following requirements:

- i) Internal Market Buyers shall submit schedules for all bilateral purchases for delivery within the PJM Region, whether from generation resources inside or outside the PJM Region;
- ii) Market Sellers shall submit schedules for bilateral sales to entities outside the PJM Region from generation within the PJM Region that is not dynamically scheduled to such entities pursuant to Section 1.12; and
- iii) In addition to the foregoing schedules for bilateral transactions, Market Participants shall submit confirmations of each scheduled bilateral transaction from each other party to the transaction in addition to the party submitting the schedule, or the adjacent Control Area.

(d) Market Sellers wishing to sell into the Day-ahead Energy Market shall submit offers for the supply of energy (including energy from hydropower units), demand reductions, Regulation, Operating Reserves or other services for the following Operating Day. Offers shall be submitted to the Office of the Interconnection in the form specified by the Office of the Interconnection and shall contain the information specified in the Office of the Interconnection's Offer Data specification, as applicable. Market Sellers owning or controlling the output of a Generation Capacity Resource that was committed in an FRR Capacity Plan, self-supplied or offered and cleared in a Base Residual Auction or Incremental Auction as specified in Attachment DD of the PJM Tariff, and that has not been rendered unavailable by a Generation Planned Outage, a Generator Maintenance Outage, or a Generation Forced Outage shall submit offers for the available capacity of such Generation Capacity Resource, including any portion that is self-scheduled by the Generating Market Buyer. The submission of offers for resource increments that have not cleared in a Base Residual Auction or an Incremental Auction, or were not committed in an FRR Capacity Plan shall be optional, but any such offers must contain the information specified in the Office of the Interconnection's Offer Data specification, as applicable. Energy offered from generation resources that have not cleared a Base Residual Auction or an Incremental Auction, or were not committed in an FRR Capacity Plan, shall not be supplied from resources that are included in or otherwise committed

to supply the Operating Reserves of a Control Area outside the PJM Region. The foregoing offers:

- i) Shall specify the Generation Capacity Resource or Demand Resource and energy for each hour in the offer period;
- ii) Shall specify the amounts and prices for the entire Operating Day for each resource component offered by the Market Seller to the Office of the Interconnection;
- iii) If based on energy from a specific generating unit, may specify start-up and no-load fees equal to the specification of such fees for such unit on file with the Office of the Interconnection, if based on reductions in demand from a Demand Resource may specify shutdown costs;
- iv) Shall set forth any special conditions upon which the Market Seller proposes to supply a resource increment, including any curtailment rate specified in a bilateral contract for the output of the resource, or any cancellation fees;
- v) May include a schedule of offers for prices and operating data contingent on acceptance by the deadline specified in this Schedule, with a second schedule applicable if accepted after the foregoing deadline;
- vi) Shall constitute an offer to submit the resource increment to the Office of the Interconnection for scheduling and dispatch in accordance with the terms of the offer, which offer shall remain open through the Operating Day for which the offer is submitted;
- vii) Shall be final as to the price or prices at which the Market Seller proposes to supply energy or other services to the PJM Interchange Energy Market, such price or prices being guaranteed by the Market Seller for the period extending through the end of the following Operating Day; and
- viii) Shall not exceed an energy offer price of \$1,000/megawatt-hour.

(e) A Market Seller that wishes to make a resource available to sell Regulation service shall submit an offer for Regulation that shall specify the MW of Regulation being offered, the Regulation Zone for which such regulation is offered, the price of the offer in dollars per MWh, and such other information specified by the Office of the Interconnection as may be necessary to evaluate the offer and the resource's opportunity costs. The price of the offer shall not exceed \$100 per MWh in the case of regulation offered for all Regulation Zones, except that offers for Regulation by American Electric Power Company and Virginia Electric Power Company and/or their respective affiliates for the Regulation Zone comprised of the ECAR Control Zone(s), MAIN Control Zone(s), or the VACAR Control Zone shall be cost-based consisting of the following components:

- i. The costs (in \$/MW) of the fuel cost increase due to the heat rate increase resulting from operating the unit at lower MW output incurred from the provision of Regulation;

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ii. The cost increase (in \$/MW) in variable operating and maintenance costs resulting from operating the unit at lower MW output incurred from the provision of Regulation; and

iii. An adder of up to \$7.50 per MW of Regulation provided.

Qualified Regulation capability must satisfy the verification tests specified in the PJM Manuals.

(f) Each Market Seller owning or controlling the output of a Generation Capacity Resource shall submit a forecast of the availability of each such Generation Capacity Resource for the next seven days. A Market Seller (i) may submit a non-binding forecast of the price at which it expects to offer a generation resource increment to the Office of the Interconnection over the next seven days, and (ii) shall submit a binding offer for energy, along with start-up and no-load fees, if any, for the next seven days or part thereof, for any generation resource with minimum notification or start-up requirement greater than 24 hours.

(g) Each offer by a Market Seller of a Generation Capacity Resource shall remain in effect for subsequent Operating Days until superseded or canceled.

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(h) The Office of the Interconnection shall post on the PJM Open Access Same-time Information System the total hourly loads scheduled in the Day-ahead Energy Market, as well as, its estimate of the combined hourly load of the Market Buyers for the next four days, and peak load forecasts for an additional three days.

(i) Except for Economic Load Response Participants, all Market Participants may submit Increment Bids and/or Decrement Bids that apply to the Day-ahead Energy Market only. Such bids must comply with the requirements set forth in the PJM Manuals and must specify amount, location and price, if any, at which the Market Participant desires to purchase or sell energy in the Day-ahead Energy Market. The Office of the Interconnection may require that a market participant shall not submit in excess of 3000 bid/offer segments in the Day-ahead Energy Market, when the Office of the Interconnection determines that such limit is required to avoid or mitigate significant system performance problems related to bid/offer volume. Notice of the need to impose such limit shall be provided prior to 10:00 a.m. EPT on the day that the Day-ahead Energy Market will clear. For purposes of this provision, a bid/offer segment is each pairing of price and megawatt quantity submitted as part of an Increment Bid or Decrement Bid.

(j) A Market Seller that wishes to make a generation resource or Demand Resource available to sell Synchronized Reserve shall submit an offer for Synchronized Reserve that shall specify the megawatts of Synchronized Reserve being offered, the price of the offer in dollars per megawatt hour, and such other information specified by the Office of the Interconnection as may be necessary to evaluate the offer and the energy used by the generation resource to provide the Synchronized Reserve and the generation resource's unit specific opportunity costs. The price of the offer shall not exceed the variable operating and maintenance costs for providing Synchronized Reserve plus seven dollars and fifty cents.

(k) An Economic Load Response Participant that wishes to participate in the Day-ahead Energy Market by reducing demand shall submit an offer to reduce demand to the Office of the Interconnection. The offer shall specify: (i) the amount of the offered curtailment in minimum increments of .1 megawatts; (ii) the Day-ahead Locational Marginal Price above which the end-use customer will reduce load; and (iii) at the Economic Load Response Participant's option, start-up costs associated with reducing load, including direct labor and equipment costs, opportunity costs, and/or a minimum of number of contiguous hours for which the load reduction must be committed.

(l) Market Sellers owning or controlling the output of a Demand Resource that was committed in an FRR Capacity Plan, self-supplied or offered and cleared in the Base Residual Auction or one of the Incremental Auctions, or owning or controlling the output of an ILR resource which was certified as specified in Attachment DD of the PJM Tariff, may submit demand reduction bids for the available load reduction capability of the Demand Resource or ILR resource. The submission of demand reduction bids for resource increments that have not cleared in the Base Residual Auction or in one of the Incremental Auctions, or for ILR resources that were not certified, or were not committed in an FRR Capacity Plan, shall be optional, but any such bids must contain the information specified in the PJM Economic Load Response Program to be included in such bids. A Demand Resource that was committed in an FRR Capacity Plan, self-supplied or offered and cleared in a Base Residual Auction or an Incremental Auction may submit a demand reduction bid in the Day-ahead Energy Market as specified in the Economic Load Response Program, provided however, that in the event of an Emergency, PJM shall require Demand Resources and ILR resources to reduce load notwithstanding that the Zonal LMP at the time such Emergency is declared is below the price identified in the demand reduction bid

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**1.10.2 Pool-scheduled Resources.**

Pool-scheduled resources are those resources for which Market Participants submitted offers to sell energy in the Day-ahead Energy Market and offers to reduce demand in the Day-ahead Energy Market, which the Office of the Interconnection scheduled in the Day-ahead Energy Market as well as generators committed by the Office of the Interconnection subsequent to the Day-ahead Energy Market. Such resources shall be committed to provide energy in the real-time dispatch unless the schedules for such units are revised pursuant to Sections 1.10.9 or 1.11. Pool-scheduled resources shall be governed by the following principles and procedures.

(a) Pool-scheduled resources shall be selected by the Office of the Interconnection on the basis of the prices offered for energy and demand reductions and related services, start-up, no-load and cancellation fees, and the specified operating characteristics, offered by Market Sellers to the Office of the Interconnection by the offer deadline specified in Section 1.10.1A.

(b) A resource that is scheduled by a Market Participant to support a bilateral sale, or that is self-scheduled by a Generating Market Buyer, shall not be selected by the Office of the Interconnection as a pool-scheduled resource except in an Emergency.

(c) Market Sellers offering energy from hydropower or other facilities with fuel or environmental limitations may submit data to the Office of the Interconnection that is sufficient to enable the Office of the Interconnection to determine the available operating hours of such facilities.

(d) The Market Seller of a resource selected as a pool-scheduled resource shall receive payments or credits for energy, demand reductions or related services, or for start-up and no-load fees, from the Office of the Interconnection on behalf of the Market Buyers in accordance with Section 3 of this Schedule 1. Alternatively, the Market Seller shall receive, in lieu of start-up and no-load fees, its actual costs incurred, if any, up to a cap of the resource's start-up cost, if the Office of the

Interconnection cancels its selection of the resource as a pool-scheduled resource and so notifies the Market Seller before the resource is synchronized.

(e) Market Participants shall make available their pool-scheduled resources to the Office of the Interconnection for coordinated operation to supply the Operating Reserves needs of the applicable Control Zone.

#### **1.10.3 Self-scheduled Resources.**

Self-scheduled resources shall be governed by the following principles and procedures.

(a) Each Generating Market Buyer shall use all reasonable efforts, consistent with Good Utility Practice, not to self-schedule resources in excess of its Equivalent Load.

(b) The offered prices of resources that are self-scheduled, or otherwise not following the dispatch orders of the Office of the Interconnection, shall not be considered by the Office of the Interconnection in determining Locational Marginal Prices.

(c) Market Participants shall make available their self-scheduled resources to the Office of the Interconnection for coordinated operation to supply the Operating Reserves needs of the applicable Control Zone, by submitting an offer as to such resources.

(d) A Market Participant self-scheduling a resource in the Day-ahead Energy Market that does not deliver the energy in the Real-time Energy Market, shall replace the energy not delivered with energy from the Real-time Energy Market and shall pay for such energy at the applicable Real-time Price.

#### **1.10.4 Capacity Resources.**

(a) A Generation Capacity Resource that is selected as a pool-scheduled resource shall be made available for scheduling and dispatch at the direction of the Office of the Interconnection. Such a Generation Capacity Resource that does not deliver energy as scheduled shall be deemed to have experienced a Generator Forced Outage to the extent of such energy not delivered. A Market Participant offering such Generation Capacity Resource in the Day-ahead Energy Market shall replace the energy not delivered with energy from the Real-time Energy Market and shall pay for such energy at the applicable Real-time Price.

(b) Energy from a Generation Capacity Resource that has not been scheduled in the Day-ahead Energy Market may be sold on a bilateral basis by the Market Seller, may be self-scheduled, or may be offered for dispatch during the Operating Day in accordance with the procedures specified in this Schedule. Such a Generation Capacity Resource that has not been scheduled in the Day-ahead Energy Market and that has been sold on a bilateral basis must be made available upon request to the Office of the Interconnection for scheduling and dispatch during the Operating Day if the Office of the Interconnection declares a Maximum Generation Emergency. Any such resource so scheduled and dispatched shall receive the applicable Real-time Price for energy delivered.



(c) A Generation Capacity Resource that has been self-scheduled shall not receive payments or credits for start-up or no-load fees.

#### **1.10.5 External Resources.**

(a) External Resources may submit offers to the PJM Interchange Energy Market, in accordance with the day-ahead and real-time scheduling processes specified above. An External Resource selected as a pool-scheduled resource shall be made available for scheduling and dispatch at the direction of the Office of the Interconnection, and except as specified below shall be compensated on the same basis as other pool-scheduled resources. External Resources that are not capable of dynamic dispatch shall, if selected by the Office of the Interconnection on the basis of the Market Seller's Offer Data, be block loaded on an hourly scheduled basis. Market Sellers shall offer External Resources to the PJM Interchange Energy Market on either a resource-specific or an aggregated resource basis. A Market Participant whose pool-scheduled resource does not deliver the energy scheduled in the Day-ahead Energy Market shall replace such energy not delivered as scheduled in the Day-ahead Energy Market with energy from the PJM Real-time Energy Market and shall pay for such energy at the applicable Real-time Price.

(b) Offers for External Resources from an aggregation of two or more generating units shall so indicate, and shall specify, in accordance with the Offer Data requirements specified by the Office of the Interconnection: (i) energy prices; (ii) hours of energy availability; (iii) a minimum dispatch level; (iv) a maximum dispatch level; and (v) unless such information has previously been made available to the Office of the Interconnection, sufficient information, as specified in the PJM Manuals, to enable the Office of the Interconnection to model the flow into the PJM Region of any energy from the External Resources scheduled in accordance with the Offer Data. If a Market Seller submits more than one offer on an aggregated resource basis, the withdrawal of any such offer shall be deemed a withdrawal of all higher priced offers for the same period.

(c) Offers for External Resources on a resource-specific basis shall specify the resource being offered, along with the information specified in the Offer Data as applicable.

#### **1.10.6 External Market Buyers.**

(a) Deliveries to an External Market Buyer not subject to dynamic dispatch by the Office of the Interconnection shall be delivered on a block loaded basis to the load bus or buses at the electrical boundaries of the PJM Region, or in such area with respect to an External Market Buyer's load within such area not served by Network Service, at which the energy is delivered to or for the External Market Buyer. External Market Buyers shall be charged or credited at either the Day-ahead Prices or Real-time Prices, whichever is applicable, for energy at the foregoing load bus or buses.

(b) An External Market Buyer's hourly schedules for energy purchased from the PJM Interchange Energy Market shall conform to the ramping and other applicable requirements of the interconnection agreement between the PJM Region and the Control Area to which, whether as an intermediate or final point of delivery, the purchased energy will initially be delivered.

output of pool-scheduled resource increments as necessary: (a) to maintain reliability, and subject to that constraint, to minimize the cost of supplying the energy, reserves, and other services required by the Market Buyers and the operation of the PJM Region; (b) to balance load and generation, maintain scheduled tie flows, and provide frequency support within the PJM Region; and (c) to minimize unscheduled interchange not frequency related between the PJM Region and other Control Areas.

#### **1.11.2 Operating Basis.**

In carrying out the foregoing objectives, the Office of the Interconnection shall conduct the operation of the PJM Region in accordance with the PJM Manuals, and shall: (i) utilize available generating reserves and obtain required replacements; and (ii) monitor the availability of adequate reserves.

#### **1.11.3 Pool-dispatched Resources.**

(a) The Office of the Interconnection shall implement the dispatch of energy from pool-scheduled resources with limited energy by direct request. In implementing mandatory or economic use of limited energy resources, the Office of the Interconnection shall use its best efforts to select the most economic hours of operation for limited energy resources, in order to make optimal use of such resources consistent with the dynamic load-following requirements of the PJM Region and the availability of other resources to the Office of the Interconnection.

(b) The Office of the Interconnection shall implement the dispatch of energy from other pool-dispatched resource increments, including generation increments from Capacity Resources the remaining increments of which are self-scheduled, by sending appropriate signals and instructions to the entity controlling such resources, in accordance with the PJM Manuals. Each Market Seller shall ensure that the entity controlling a pool-dispatched resource offered or made available by that Market Seller complies with the energy dispatch signals and instructions transmitted by the Office of the Interconnection.

#### **1.11.3A Maximum Generation Emergency.**

If the Office of the Interconnection declares a Maximum Generation Emergency, all deliveries to load that is served by Point-to-Point Transmission Service outside the PJM Region from Generation Capacity Resources may be interrupted in order to serve load in the PJM Region.

#### **1.11.4 Regulation.**

(a) A Market Buyer may satisfy its Regulation Obligation from its own generation resources and/or Demand Resources capable of performing Regulation service, by contractual arrangements with other Market Participants able to provide Regulation service, or by purchases from the PJM Interchange Energy Market at the rates set forth in Section 3.2.2.

(b) The Office of the Interconnection shall obtain Regulation service from the least-cost alternatives available from either pool-scheduled or self-scheduled generation resources and/or Demand Resources as needed to meet Regulation Zone requirements not otherwise satisfied by the Market Buyers. Generation resources or Demand Resources offering to sell Regulation shall be selected to provide Regulation on the

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#### **4. RATE TABLE**

##### **4.1 Offered Price Rates.**

Spot Market Energy, Regulation, Operating Reserve, and Transmission Congestion are based on offers to the Office of the Interconnection specified in this Agreement.

##### **4.2 Transmission Losses.**

Average loss factors shall be as specified in the PJM Tariff.

##### **4.3 Emergency Energy Purchases.**

The pricing for Emergency energy purchases will be determined by the Office of the Interconnection and: (a) an adjacent Control Area, in accordance with an agreement between the Office of the Interconnection and such adjacent Control Area, or (b) a Member, in accordance with arrangements made by the Office of Interconnection to purchase energy offered by such Member from resources that are not Capacity Resources.

#### **5. CALCULATION OF TRANSMISSION CONGESTION CHARGES AND CREDITS**

##### **5.1 Transmission Congestion Charge Calculation.**

###### **5.1.1 Calculation by Office of the Interconnection.**

When the transmission system is operating under constrained conditions, or as necessary to provide third-party transmission provider losses in accordance with Section 9.3, the Office of the Interconnection shall calculate Transmission Congestion Charges for each Network Service User, the PJM Interchange Energy Market, and each Transmission Customer.

###### **5.1.2 General.**

The basis for the Transmission Congestion Charges shall be the differences in the Locational Marginal Prices between points of delivery and points of receipt, as determined in accordance with Section 2 of this Schedule.

###### **5.1.3 Network Service User Calculation.**

Each Network Service User shall be charged for the increased cost of energy incurred by it during each constrained hour to deliver the output of its firm Generation Capacity Resources or other owned or contracted for resources, its firm bilateral purchases, and its non-firm bilateral purchases as to which it has elected to pay Transmission Congestion Charges. The Transmission Congestion Charge for deliveries from each such source shall be the Network Service User's hourly net bill less its hourly net PJM Interchange payments or sales as determined in accordance with Section 3.2.1 or Sections 3.3 and 3.3.1 of this Schedule.

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#### **7.4.3 Target Allocation of Auction Revenue Right Credits.**

A target allocation of Auction Revenue Right Credits for each entity holding an Auction Revenue Right shall be determined for each Auction Revenue Right. After each round of the annual Financial Transmission Right Auction, each Auction Revenue Right shall be divided by four and multiplied by the price differences for the receipt and delivery points associated with the Auction Revenue Right, calculated as the Locational Marginal Price at the delivery point(s) minus the Locational Marginal Price at the receipt point(s), where the price for the receipt and delivery point is determined by the clearing prices of each round of the annual Financial Transmission Right auction. The daily total target allocation for an entity holding the Auction Revenue Rights shall be the sum of the daily target allocations associated with all of the entity's Auction Revenue Rights.

#### **7.4.4 Calculation of Auction Revenue Right Credits.**

(a) Each day, the total of all the daily target allocations determined as specified above in Section 7.4.3 plus any additional Auction Revenue Rights target allocations applicable for that day shall be compared to the total revenues of all applicable monthly Financial Transmission Rights auction(s) (divided by the number of days in the month) plus the total revenues of the annual Financial Transmission Rights auction (divided by the number of days in the Planning Period). If the total of the target allocations is less than the total auction revenues, the Auction Revenue Right Credit for each entity holding an Auction Revenue Right shall be equal to its target allocation. All remaining funds shall be distributed as Excess Congestion Charges pursuant to Section 5.2.5.

(b) If the total of the target allocations is greater than the total auction revenues, each holder of Auction Revenue Rights shall be assigned a share of the total auction revenues in proportion to its Auction Revenue Rights target allocations for Auction Revenue Rights which have a positive Target Allocation value. Auction Revenue Rights which have a negative Target Allocation value are assigned the full Target Allocation value as a negative Auction Revenue Right Credit.

#### **7.5 Simultaneous Feasibility.**

The Office of the Interconnection shall make the simultaneous feasibility determinations specified herein using appropriate powerflow models of contingency-constrained dispatch. Such determinations shall take into account outages of both individual generation units and transmission facilities and shall be based on reasonable assumptions about the configuration and availability of transmission capability during the period covered by the auction that are not inconsistent with the determination of the deliverability of Generation Capacity Resources under the Reliability Assurance Agreement. The goal of the simultaneous feasibility determination shall be to ensure that there are sufficient revenues from Transmission Congestion Charges to satisfy all Financial Transmission Rights obligations for the auction period under expected conditions and to ensure that there are sufficient revenues from the annual Financial Transmission Right Auction to satisfy all Auction Revenue Rights obligations.

## REGISTRATION

Participants must complete the PJM Emergency Load Response Program Registration Form ("Emergency Registration Form") that is posted on the PJM web site ([www.pjm.com](http://www.pjm.com)). The following general steps will be followed:

1. The participant completes the Emergency Registration Form located on the PJM web site.  
PJM reviews the application and ensures that the qualifications are met, including verifying that the appropriate metering exists. PJM also confirms with the appropriate LSE and EDC whether the load reduction is under other contractual obligations. Other such obligations may not preclude participation in the program, but may require special consideration by PJM such that appropriate settlements are made within the confines of such existing contracts. The EDC and LSE have ten (10) business days to respond or PJM assumes acceptance.
2. PJM informs the requesting participant of acceptance into the program and notifies the appropriate LSE and EDC of the participant's acceptance into the program.  
Any end-use customer intending to run distributed generating units in support of local load for the purpose of participating in this program must represent in writing to PJM that it holds all applicable environmental and use permits for running those generators. Continuing participation in this program will be deemed as a continuing representation by the owner that each time its distributed generating unit is run in accordance with this program, it is being run in compliance with all applicable permits, including any emissions, run-time limit or other constraint on plant operations that may be imposed by such permits.

## EMERGENCY OPERATIONS

PJM will initiate the request for load reduction following the declaration of Maximum Emergency Generation and prior to the implementation of ILR Steps 1 and 2. (Implementation of the Emergency Load Response Program can be used for regional emergencies.) It is implemented whenever generation is needed that is greater than the highest economic incremental cost. PJM posts the request for load reduction on the PJM web site, on the Emergency Conditions page, and on eData, and issues a burst email to the Emergency Load Response majordomo. A separate All-Call message is also issued.

Following PJM's request to reduce load, (i) participants in the Energy Only Option voluntarily may reduce load; and (ii) participants in the Full Program Option are required to reduce load unless they already have reduced load pursuant to the Economic Load Response Program. PJM will dispatch the resources of all Emergency Load Response Program participants (not already dispatched under the Economic Load Response Program) based on the Minimum Dispatch Prices specified in the participants' Emergency Registration Forms.

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Full Program Option participants that, prior to June 1, 2002, entered into contracts with LSEs or CSPs that enable participation in the Full Program Option, may participate in the Emergency Load Response program during Interruptible Load for Reliability (ILR) events as long as the customer's ILR contract explicitly excludes payment or credit for energy not consumed during ILR events. If the LSE that submitted the Full Program Option participant for ILR credit indicates that such participant is not eligible for simultaneous credit under the Emergency Load Response program and ILR is called for concurrent with the Emergency Load Response program, then payments will be made to the participant according to the Emergency Load Response program only for the time during which ILR obligations were not in effect. Any response in excess of the contracted ILR amount will be

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## **SCHEDULE 5**

### **PJM DISPUTE RESOLUTION PROCEDURES**

#### **1. DEFINITIONS**

##### **1.1 Alternate Dispute Resolution Committee.**

"Alternate Dispute Resolution Committee" shall mean the Committee established pursuant to Section 5 of this Schedule.

##### **1.2 MAAC Dispute Resolution Committee.**

"MAAC Dispute Resolution Committee" shall mean the committee established by the Mid-Atlantic Area Council to administer its industry-specific mechanism for resolving certain types of wholesale electricity disputes.

##### **1.3 Related PJM Agreements.**

"Related PJM Agreements" shall mean this Agreement, the Consolidated Transmission Owners Agreement and the Reliability Assurance Agreement.

#### **2. PURPOSES AND OBJECTIVES**

##### **2.1 Common and Uniform Procedures.**

The PJM Dispute Resolution Procedures are intended to establish common and uniform procedures for resolving disputes arising under the Related PJM Agreements. To the extent any of the foregoing agreements or the PJM Tariff contain dispute resolution provisions expressly applicable to disputes arising thereunder, however, this Agreement shall not supplant such provisions, which shall apply according to their terms.

##### **2.2 Interpretation.**

To the extent permitted by applicable law, the PJM Dispute Resolution Procedures are to be interpreted to effectuate the objectives set forth in Section 2.1. To the extent permitted by these PJM Dispute Resolution Procedures, the Alternate Dispute Resolution Committee shall coordinate with the established dispute resolution committee of an Applicable Regional Reliability Council, where appropriate, in order to conserve administrative resources and to avoid duplication of dispute resolution staffing.

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## **SCHEDULE 8**

### **DELEGATION OF PJM REGION RELIABILITY RESPONSIBILITIES**

#### **1. DELEGATION**

The following responsibilities shall be delegated to the Office of the Interconnection by the parties to the Reliability Assurance Agreement.

#### **2. NEW PARTIES**

With regard to the addition, withdrawal or removal of a party to the Reliability Assurance Agreement, the Office of the Interconnection shall:

(a) Receive and evaluate the information submitted by entities that plan to serve loads within the PJM Region, including entities whose participation in the Agreement will expand the boundaries of the PJM Region, such evaluation to be conducted in accordance with the requirements of the Reliability Assurance Agreement; and

(b) Evaluate the effects of the withdrawal or removal of a party from the Reliability Assurance Agreement.

#### **3. IMPLEMENTATION OF RELIABILITY ASSURANCE AGREEMENT**

With regard to the implementation of the provisions of the Reliability Assurance Agreement, the Office of the Interconnection shall:

(a) Receive all required data and forecasts from the parties to the Reliability Assurance Agreement and other owners or providers of Capacity Resources;

(b) Perform all calculations and analyses necessary to determine the Forecast Pool Requirement and the capacity obligations imposed under the Reliability Assurance Agreement, including periodic reviews of the capacity benefit margin for consistency with the Reliability Principles and Standards, as the foregoing terms are defined in the Reliability Assurance Agreement;

(c) Monitor the compliance of each party to the Reliability Assurance Agreement with its obligations under the Reliability Assurance Agreement;

(d) Keep cost records, and bill and collect any costs or charges due from the parties to the Reliability Assurance Agreement and distribute those charges in accordance with the terms of the Reliability Assurance Agreement;

(e) Assist with the development of rules and procedures for determining and demonstrating the capability of Capacity Resources;

(f) Establish the capability and deliverability of Capacity Resources consistent with the requirements of the Reliability Assurance Agreement;

(g) Collect and maintain generator availability data;



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(h) Perform any other forecasts, studies or analyses required to administer the Reliability Assurance Agreement;

(i) Coordinate maintenance schedules for generation resources operated as part of the PJMRegion;

(j) Determine and declare that an Emergency exists or has ceased to exist in all or any part of the PJM Region or announce that an Emergency exists or ceases to exist in a Control Area interconnected with the PJM Region;

(k) Enter into agreements for (i) the transfer of energy in Emergencies in the PJM Region or in a Control Area interconnected with the PJM Region and (ii) mutual support in such Emergencies with other Control Areas interconnected with the PJM Region; and

(l) Coordinate the curtailment or shedding of load, or other measures appropriate to alleviate an Emergency, to preserve reliability in accordance with FERC, NERC or Applicable Regional Reliability Council principles, guidelines, standards and requirements and the PJM Manuals, and to ensure the operation of the PJM Region in accordance with Good Utility Practice.

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PJM Interconnection, L.L.C.  
Third Revised Rate Schedule FERC No. 24

Third Revised Sheet No. 193  
Superseding First Revised Sheet No. 193

**[Sheet Nos. 193 – 196 Reserved for Future Use]**

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Third Revised Rate Schedule FERC No. 24

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

**Attachment F**  
**PJM Operating Agreement Revisions**  
**(Redline Version)**

# **OPERATING AGREEMENT**

## **RPM Revisions**

## **Redline version**

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## OPERATING AGREEMENT

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**1.4A Authorized Commission.**

“Authorized Commission” shall mean (i) a State public utility commission within the geographic limits of the PJM Region that regulates the distribution or supply of electricity to retail customers and is legally charged with monitoring the operation of wholesale or retail markets serving retail suppliers or customers within its State or (ii) an association or organization comprised exclusively of State public utility commissions described in the immediately preceding clause (i).

**1.4B Authorized Person.**

“Authorized Person” shall mean a person who has executed a Non-Disclosure Agreement, and is authorized in writing by an Authorized Commission to receive and discuss confidential information. Authorized Persons may include attorneys representing an Authorized Commission, consultants and/or contractors directly employed by an Authorized Commission, provided however that consultants or contractors may not initiate requests for confidential information from the Office of the Interconnection or the PJM Market Monitor.

**1.5 Board Member.**

“Board Member” shall mean a member of the PJM Board.

**1.5A Applicable Regional Reliability Council.**

“Applicable Regional Reliability Council” shall mean the reliability council for the region in which a Member operates.

**1.5B Behind The Meter Generation.**

“Behind The Meter Generation” refers to a generating unit that delivers energy to load without using the Transmission System or any distribution facilities (unless the entity that owns or leases the distribution facilities has consented to such use of the distribution facilities and such consent has been demonstrated to the satisfaction of the Office of the Interconnection); provided, however, that Behind The Meter Generation does not include (i) at any time, any portion of such generating unit’s capacity that is designated as a Generation Capacity Resource, or (ii) in any hour, any portion of the output of such generating unit[s] that is sold to another entity for consumption at another electrical location or into the PJM Interchange Energy Market.

## 1.6 Capacity Resource.

~~"Capacity Resource" shall mean the net capacity from owned or contracted for generating facilities all of which (i) are accredited to a Load Serving Entity pursuant to the procedures set forth have the meaning provided in the Reliability Assurance Agreement, or pursuant to the procedures set forth in the Reliability Assurance Agreement South and (ii) are committed to satisfy that Load Serving Entity's obligations under the Reliability Assurance Agreement and this Agreement or the Reliability Assurance Agreement South.~~

### 1.6A Consolidated Transmission Owners Agreement.

"Consolidated Transmission Owners Agreement" dated as of December 15, 2005, by and among the Transmission Owners and by and between the Transmission Owners and PJM Interconnection, L.L.C.

## 1.7 Control Area.

"Control Area" shall mean an electric power system or combination of electric power systems bounded by interconnection metering and telemetry to which a common automatic generation control scheme is applied in order to:

- (a) match the power output of the generators within the electric power system(s) and energy purchased from entities outside the electric power system(s), with the load within the electric power system(s);
- (b) maintain scheduled interchange with other Control Areas, within the limits of Good Utility Practice;
- (c) maintain the frequency of the electric power system(s) within reasonable limits in accordance with Good Utility Practice and the criteria of NERC and the applicable regional reliability council of NERC;
- (d) maintain power flows on transmission facilities within appropriate limits to preserve reliability; and
- (e) provide sufficient generating capacity to maintain operating reserves in accordance with Good Utility Practice.

### 1.7.01 Control Zone.

"Control Zone" shall mean any of the ECAR Control Zone(s), MAAC Control Zone, or MAIN Control Zone(s), or the VACAR Control Zone.

### 1.7.02 Default Allocation Assessment.

"Default Allocation Assessment" shall mean the assessment determined pursuant to section 15.2.2 of this Agreement.

### 1.7.03 Demand Resource.

"Demand Resource" shall have the meaning provided in the Reliability Assurance Agreement.

### 1.7A [Reserved].

### 1.7B [Reserved].

### 1.7C ECAR.

"ECAR" shall mean the reliability council under section 202 of the Federal Power Act, established pursuant to the ECAR Coordination Agreement dated June 1, 1968, or any successor thereto

PJM Interconnection, L.L.C.  
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Fifth Revised Sheet No. 20  
Superseding Third Revised Sheet No. 20

### **1.9 Effective Date.**

"Effective Date" shall mean August 1, 1997, or such later date that FERC permits this Agreement to go into effect.

### **1.10 Emergency.**

"Emergency" shall mean: (i) an abnormal system condition requiring manual or automatic action to maintain system frequency, or to prevent loss of firm load, equipment damage, or tripping of system elements that could adversely affect the reliability of an electric system or the safety of persons or property; or (ii) a fuel shortage requiring departure from normal operating procedures in order to minimize the use of such scarce fuel; or (iii) a condition that requires implementation of emergency procedures as defined in the PJM Manuals.

### **1.11 End-Use Customer.**

"End-Use Customer" shall mean a Member that is a retail end-user of electricity within the PJM Region.

### **1.12 FERC.**

"FERC" shall mean the Federal Energy Regulatory Commission or any successor federal agency, commission or department exercising jurisdiction over this Agreement.

### **1.13 Finance Committee.**

"Finance Committee" shall mean the body formed pursuant to Section 7.5.1 of this Agreement.

### **1.14 Generation Owner.**

"Generation Owner" shall mean a Member that owns or leases with rights equivalent to ownership facilities for the generation of electric energy that are located within the PJM Region. Purchasing all or a portion of the output of a generation facility shall not be sufficient to qualify a Member as a Generation Owner.

### **1.14A Generation Capacity Resource.**

"Generation Capacity Resource" shall have the meaning provided in the Reliability Assurance Agreement.

### **1.15 Good Utility Practice.**

"Good Utility Practice" shall mean any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather is intended to include acceptable practices, methods, or acts generally accepted in the region.

### **1.16 Information Request.**

"Information Request" shall mean a written request, in accordance with the terms of this Agreement for disclosure of confidential information pursuant to Section 18.17.4 of this Agreement.

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PJM Interconnection, L.L.C.  
Third Revised Rate Schedule FERC No. 24

First Revised Sheet No. 20A

**1.16A Interruptible Load for Reliability.**

"Interruptible Load for Reliability" or "ILR" shall have the meaning specified in the Reliability Assurance Agreement.

**1.17 LLC.**

"LLC" shall mean PJM Interconnection, L.L.C., a Delaware limited liability company.

### **1.18 Load Serving Entity.**

"Load Serving Entity" shall mean an entity, including a load aggregator or power marketer, (1) serving end-users within the PJM Region, and (2) that has been granted the authority or has an obligation pursuant to state or local law, regulation or franchise to sell electric energy to end-users located within the PJM Region, or the duly designated agent of such an entity.

### **1.19 Locational Marginal Price.**

"Locational Marginal Price" shall mean the hourly integrated market clearing marginal price for energy at the location the energy is delivered or received, calculated as specified in Section 2 of Schedule 1 of this Agreement.

### **1.20 MAAC.**

"MAAC" shall mean the Mid-Atlantic Area Council, a reliability council under § 202 of the Federal Power Act established pursuant to the MAAC Agreement dated August 1, 1994 or any successor thereto.

#### **1.20A MAAC Control Zone.**

"MAAC Control Zone" shall mean the aggregate of the Transmission Facilities of Atlantic City Electric Company, Baltimore Gas and Electric Company, Delmarva Power and Light Company, Jersey Central Power and Light Company, Metropolitan Edison Company, PECO Energy Company, Pennsylvania Electric Company, PPL Electric Utilities Corporation, Potomac Electric Power Company, Public Service Electric and Gas Company, and Rockland Electric Company.

#### **1.20B MAIN.**

"MAIN" shall mean the Mid-America Interconnected Network, a reliability council under § 202 of the Federal Power Act established pursuant to the Amended and Restated Bylaws of MAIN, dated January 8, 1998, or any successor thereof.

#### **1.20C MAIN Control Zone.**

"MAIN Control Zone" shall mean any one of the one or more Control Zones comprised of the Transmission Facilities of one or more of the Transmission Owners for which MAIN is the Applicable Regional Reliability Council, as designated in the PJM Manuals.

### **1.21 Market Buyer.**

"Market Buyer" shall mean a Member that has met reasonable creditworthiness standards established by the Office of the Interconnection and that is otherwise able to make purchases in the PJM Interchange Energy Market or PJM Capacity Credit.

PJM Interconnection, L.L.C.  
Third Revised Rate Schedule FERC No. 24

Fourth Revised Sheet No. 21A  
Superseding Third Revised Sheet No. 21A

**1.22 Market Participant.**

“Market Participant” shall mean a Market Buyer, a Market Seller, an Economic Load Response Participant, or all three.

**1.23 Market Seller.**

“Market Seller” shall mean a Member that has met reasonable creditworthiness standards established by the Office of the Interconnection and that is otherwise able to make sales in the PJM Interchange Energy Market or ~~PJM Capacity Credit Market~~.

**1.24 Member.**

“Member” shall mean an entity that satisfies the requirements of Section 11.6 of this Agreement and that (i) is a member of the LLC immediately prior to the Effective Date, or (ii) has executed an Additional Member Agreement in the form set forth in Schedule 4 hereof.

**1.25 Members Committee.**

“Members Committee” shall mean the committee specified in Section 8 of this Agreement composed of representatives of all the Members.

**1.26 NERC.**

“NERC” shall mean the North American Electric Reliability Council, or any successor thereto.

PJM Interconnection, L.L.C.  
Third Revised Rate Schedule FERC No. 24

Eighth Revised Sheet No. 23  
Superseding Sixth Revised Sheet No. 23

### **1.35 PJM Manuals.**

"PJM Manuals" shall mean the instructions, rules, procedures and guidelines established by the Office of the Interconnection for the operation, planning, and accounting requirements of the PJM Region and the PJM Interchange Energy Market.

#### **1.35.01 PJM Market Monitor.**

"PJM Market Monitor" shall mean the Market Monitoring Unit established under Attachment M to the PJM Tariff.

#### **1.35A PJM Region.**

"PJM Region" shall mean the aggregate of the MAAC Control Zone, the PJM West Region, and VACAR Control Zone.

#### **1.35B PJM South Region.**

"PJM South Region" shall mean the VACAR Control Zone.

### **1.36 PJM Tariff.**

"PJM Tariff" shall mean the PJM Open Access Transmission Tariff providing transmission service within the PJM Region, including any schedules, appendices, or exhibits attached thereto, as in effect from time to time.

#### **1.36A [Reserved.]**

#### **1.36B PJM West Region.**

"PJM West Region" shall mean the aggregate of the ECAR Control Zone(s) and MAIN Control Zone(s).

### **1.37 Planning Period.**

"Planning Period" shall initially mean the 12 months beginning June 1 and extending through May 31 of the following year, or such other period established under the procedures of, ~~as applicable, the Reliability Assurance Agreement or the Reliability Assurance Agreement West, or the Reliability Assurance Agreement South.~~

### **1.38 President.**

"President" shall have the meaning specified in Section 9.2.

#### **1.38A Regulation Zone.**

"Regulation Zone" shall mean any of those one or more geographic areas, each consisting of a combination of one or more Control Zone(s) as designated by the Office of the Interconnection in the PJM Manuals, relevant to provision of, and requirements for, regulation service.

### **1.39 Related Parties.**

"Related Parties" shall mean, solely for purposes of the governance provisions of this Agreement: (i) any generation and transmission cooperative and one of its distribution cooperative members; and (ii) any joint municipal agency and one of its members. For purposes of this Agreement, representatives of state or federal government agencies shall not be deemed Related Parties with respect to each other, and a public body's regulatory authority, if any, over a Member shall not be deemed to make it a Related Party with respect to that Member.

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PJM Interconnection, L.L.C.  
Third Revised Rate Schedule FERC No. 24

Fourth Revised Sheet No. 23A  
Superseding Second Revised Sheet No. 23A

#### 1.40 Reliability Assurance Agreement.

"Reliability Assurance Agreement" shall mean that certain Reliability Assurance Agreement Among Load-Serving Entities in the PJM Region, on file with FERC as PJM Interconnection, L.L.C. Rate Schedule FERC No. 42 [correct number reference] agreement, dated June 2, 1997 and as amended from time to time, establishing obligations, standards and procedures for maintaining the reliable operation of the MAACPJM Control Region Zone.

##### 1.40A ~~[Reserved]. Reliability Assurance Agreement West.~~

~~—— "Reliability Assurance Agreement West" shall mean that certain agreement, dated March 13, 2001 and as amended from time to time, establishing obligations, standards and procedures for maintaining the reliable operation of the PJM West Region.~~

##### 1.40B ~~[Reserved]. Reliability Assurance Agreement South.~~

~~—— "Reliability Assurance Agreement South" shall mean that certain "PJM South Reliability Assurance Agreement Among Load-Serving Entities in the PJM South Region," as amended from time to time, establishing obligations, standards and procedures for maintaining the reliable operation of the PJM South Region.~~

#### 1.40C SERC.

"SERC" or "Southeastern Electric Reliability Council" shall mean the reliability council under section 202 of the Federal Power Act established pursuant to the SERC Agreement dated January 14, 1970, or any successor thereto.

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#### **1.47A VACAR.**

"VACAR" shall mean the group of five companies, consisting of Duke Energy, Carolina Power and Light, South Carolina Public Service Authority, South Carolina Electric and Gas, and Virginia Electric and Power Company.

#### **1.47B VACAR Control Zone.**

"VACAR Control Zone" shall mean the Transmission Facilities of Virginia Electric and Power Company.

#### **1.48 Voting Member.**

"Voting Member" shall mean (i) a Member as to which no other Member is an Affiliate or Related Party, or (ii) a Member together with any other Members as to which it is an Affiliate or Related Party.

#### **1.49 Weighted Interest.**

"Weighted Interest" shall be equal to  $(0.1(1/N) + 0.5(B/C) + 0.2(D/E) + 0.2(F/G))$ , where:

N = the total number of Members excluding *ex officio* Members and State Consumer Advocates (which, for purposes of Section 15.2 of this agreement, shall be calculated as of five o'clock p.m. Eastern Time on the date PJM declares a Member in default)

B = the Member's internal peak demand for the previous calendar year (which, for Load Serving Entities under the Reliability Assurance Agreement, shall be that used to calculate Accounted For Obligation as determined by the Office of the Interconnection pursuant to Schedule 7 of the Reliability Assurance Agreement averaged over the previous calendar year)

C = the sum of factor B for all Members

D = the Member's generating capability from Generation Capacity Resources located in the PJM Region as of January 1 of the current calendar year, determined by the Office of the Interconnection pursuant to Schedule 9 of the Reliability Assurance Agreement. ~~Schedule 9 of the West Reliability Assurance Agreement, or Schedule 9 of the Reliability Assurance Agreement-South, respectively~~

E = the sum of factor D for all Members

F = the sum of the Member's circuit miles of transmission facilities multiplied by the respective operating voltage for facilities 100 kV and above as of January 1 of the current calendar year

G = the sum of factor F for all Members

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(d) The Markets and Reliability Committee shall provide advice and recommendations concerning studies and analyses relating to the overall efficacy of the PJM Interchange Energy Market and in carrying out actions as may be initiated as a result thereof.

(e) The Markets and Reliability Committee shall provide advice and recommendations concerning revisions to the Operating Agreement, the Reliability Assurance Agreement, ~~the Reliability Assurance Agreement West, the Reliability Assurance Agreement South~~ and the PJM Tariff that pertain to its areas of responsibility.

(f) The Markets and Reliability Committee shall make annual and timely recommendations concerning the generating capacity reserve requirement and related demand-side valuation factors for consideration by the Members Committee, in order to assist the Members Committee in making recommendations to the PJM Board of Managers.

(g) The Markets and Reliability Committee shall provide direction to the Market Implementation Committee, which committee shall report to the Markets and Reliability Committee. The Market Implementation Committee shall provide advice and recommendations to the Markets and Reliability Committee directed to the advancement and promotion of competitive wholesale electricity markets in the PJM Region, and perform such other functions as the Markets and Reliability Committee may direct from time to time.

(h) The Markets and Reliability Committee shall provide direction to the Operating Committee and Planning Committee, which committees shall report to the Markets and Reliability Committee. The Operating Committee shall advise the Markets and Reliability Committee and PJM on matters pertaining to the reliable and secure operation of the PJM Region and the PJM Interchange Energy Market, as appropriate, and other matters as the Markets and Reliability Committee may request. The Planning Committee shall advise the Markets and Reliability Committee and PJM on matters pertaining to system reliability, security, economy of service, and planning strategies and policies and other matters as the Markets and Reliability Committee may request. The Markets and Reliability Committee shall review technical recommendations and changes initiated by the Operating Committee and Planning Committees and provide comments as needed.

(i) The Markets and Reliability Committee shall perform such other functions, directly or through delegation to a Standing Committee, subcommittee, working group or task force reporting to the Markets and Reliability Committee, as the Members Committee may direct.

(j) The Markets and Reliability Committee shall create subcommittees, working groups or task forces when needed to assist in carrying out the duties and responsibilities of the Markets and Reliability Committee.

#### 8.6.2 [Reserved.]

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- iii) Prepare, maintain, update and disseminate the PJM Manuals;
- iv) Comply with NERC, and Applicable Regional Reliability Council operation and planning standards, principles and guidelines;
- v) Maintain an appropriately trained workforce, and such equipment and facilities, including computer hardware and software and backup power supplies, as necessary or appropriate to implement or administer this Agreement;
- vi) Direct the operation and coordinate the maintenance of the facilities of the PJM Region used for both load and reactive supply, so as to maintain reliability of service and obtain the benefits of pooling and interchange consistent with this Agreement, and the Reliability Assurance Agreement, the ~~Reliability Assurance Agreement-West, and the Reliability Assurance Agreement-South~~;
- vii) Direct the operation and coordinate the maintenance of the bulk power supply facilities of the PJM Region with such facilities and systems of others not party to this Agreement in accordance with agreements between the LLC and such other systems to secure reliability and continuity of service and other advantages of pooling on a regional basis;
- viii) Perform interchange accounting and maintain records pertaining to the operation of the PJM Interchange Energy Market and the PJM Region;
- ix) Notify the Members of the receipt of any application to become a Member, and of the action of the Office of the Interconnection on such application, including but not limited to the completion of integration of a new Member's system into the PJM Region, as specified in Section 11.6(f);
- x) Calculate the Weighted Interest and Default Allocation Assessment of each Member;
- xi) Maintain accurate records of the sectors in which each Voting Member is entitled to vote, and calculate the results of any vote taken in the Members Committee;
- xii) Furnish appropriate information and reports as are required to keep the Members regularly informed of the outlook for, the functioning of, and results achieved by the PJM Region;
- xiii) File with FERC on behalf of the Members any amendments to this Agreement or the Schedules hereto, any new Schedules hereto, and make any other regulatory filings on behalf of the Members or the LLC necessary to implement this Agreement;
- xiv) At the direction of the PJM Board, submit comments to regulatory authorities on matters pertinent to the PJM Region;

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- xv) Consult with the standing or other committees established pursuant to Section 8.6(a) on matters within the responsibility of the committee;
- xvi) Perform operating studies of the bulk power supply facilities of the PJM Region and make such recommendations and initiate such actions as may be necessary to maintain reliable operation of the PJM Region;
- xvii) Accept, on behalf of the Members, notices served under this Agreement;
- xviii) Perform those functions and undertake those responsibilities transferred to it under the Consolidated Transmission Owners Agreement including (A) direct the operation of the transmission facilities of the parties to the East Transmission Owners Agreement (B) direct the operation of the transmission facilities of the Parties to the West Transmission Owners Agreement, (C) direct the operation of the transmission facilities of the Parties to the South Transmission Owner Agreement, (D) administer the PJM Tariff, and (E) administer the Regional Transmission Expansion Planning Protocol set forth as Schedule 6 to this Agreement;
- xix) Perform those functions and undertake those responsibilities transferred to it under the Reliability Assurance Agreement, as specified in Schedule 8 of this Agreement, ~~those functions and responsibilities transferred to it under the Reliability Assurance Agreement West, as specified in Schedule 8A of this Agreement, and those functions and responsibilities transferred to it under the Reliability Assurance Agreement South, as specified in Schedule 8B of this Agreement;~~
- xx) Monitor the operation of the PJM Region, ensure that appropriate Emergency plans are in place and appropriate Emergency drills are conducted, declare the existence of an Emergency, and direct the operations of the Members as necessary to manage, alleviate or end an Emergency;
- xxi) Incorporate the grid reliability requirements applicable to nuclear generating units in the PJM Region planning and operating principles and practices; and
- xxii) Initiate such legal or regulatory proceedings as directed by the PJM Board to enforce the obligations of this Agreement.

## 11. MEMBERS

### 11.1 Management Rights.

The Members or any of them shall not take part in the management of the business of, and shall not transact any business for, the LLC in their capacity as Members, nor shall they have power to sign for or to bind the LLC.

### 11.2 Other Activities.

Except as otherwise expressly provided herein, any Member may engage in or possess any interest in another business or venture of any nature and description, independently or with others, even if such activities compete directly with the business of the LLC, and neither the LLC nor any Member hereof shall have any rights in or to any such independent ventures or the income or profits derived therefrom.

### 11.3 Member Responsibilities.

#### 11.3.1 General.

To facilitate and provide for the work of the Office of the Interconnection and of the several committees appointed by the Members Committee, each Member shall, to the extent applicable:

(a) Maintain adequate records and, subject to the provisions of this Agreement for the protection of the confidentiality of proprietary or commercially sensitive information, provide data required for (i) coordination of operations, (ii) accounting for all interchange transactions, (iii) preparation of required reports, (iv) coordination of planning, including those data required for capacity accounting under the Reliability Assurance Agreement ~~and Reliability Assurance Agreement West, and Reliability Assurance Agreement South~~; (v) preparation of maintenance schedules, (vi) analysis of system disturbances, and (vii) such other purposes, including those set forth in Schedule 2, as will contribute to the reliable and economic operation of the PJM Region;

(b) Provide such recording, telemetering, revenue quality metering, communication and control facilities as are required for the coordination of its operations with the Office of the Interconnection and those of the other Members and to enable the Office of the Interconnection to operate the PJM Region and otherwise implement and administer this Agreement, including equipment required in normal and Emergency operations and for the recording and analysis of system disturbances;

(c) Provide adequate and properly trained personnel to (i) permit participation in the coordinated operation of the PJM Region (ii) meet its obligation on a timely basis for supply of records and data, (iii) serve on committees and participate in their investigations, and (iv) share in the representation of the Interconnection in inter-regional and national reliability activities. Minimum training for Members that operate Market Operations Centers and local control centers shall include compliance with the applicable training standards and requirements in PJM Manual 01, Control Center Requirements, including the PJM System Operator Training Requirements in Attachment C;

(d) Share in the costs of committee activities and investigations (including costs of consultants, computer time and other appropriate items), communication facilities used by all the Members (in addition to those provided in the Office of the Interconnection), and such other expenses as are approved for payment by the PJM Board, such costs to be recovered as provided in Schedule 3;

(e) Comply with the requirements of the PJM Manuals and all directives of the Office of the Interconnection to take any action for the purpose of managing, alleviating or ending an Emergency, and authorize the Office of the Interconnection to direct the transfer or interruption of the delivery of energy on their behalf to meet an Emergency and to implement agreements with other Control Areas interconnected with the PJM Region for the mutual provision of service to meet an Emergency, and be subject to the emergency procedure charges specified in Schedule 9 of this Agreement for any failure to follow the Emergency instructions of the Office of the Interconnection. In addressing any Emergency, the Office of the Interconnection shall comply with the terms of any reserve sharing agreements in effect for any part of the PJM Region.

#### 11.3.2 Facilities Planning and Operation.

Consistent with and subject to the requirements of this Agreement, the PJM Tariff, the governing agreements of the Applicable Regional Reliability Councils, the Reliability Assurance Agreement, ~~the Reliability Assurance Agreement West, the Reliability Assurance Agreement South~~, the Consolidated Transmission Owners Agreement, and the PJM Manuals, each Member shall

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cooperate with the other Members in the coordinated planning and operation of the facilities of its System within the PJM Region so as to obtain the greatest practicable degree of reliability, compatible economy and other advantages from such coordinated planning and operation. In furtherance of such cooperation each Member shall, as applicable:

- (a) Consult with the other Members and the Office of the Interconnection, and coordinate the installation of its electric generation and Transmission Facilities with those of such other Members so as to maintain reliable service in the PJM Region;
- (b) Coordinate with the other Members, the Office of the Interconnection and with others in the planning and operation of the regional facilities to secure a high level of reliability and continuity of service and other advantages;
- (c) Cooperate with the other Members and the Office of the Interconnection in the implementation of all policies and procedures established pursuant to this Agreement for dealing with Emergencies, including but not limited to policies and procedures for maintaining or arranging for a portion of a Member's Generation Capacity Resources, at least equal to the applicable levels established from time to time by the Office of the Interconnection, to have the ability to go from a shutdown condition to an operating condition and start delivering power without assistance from the power system;
- (d) Cooperate with the members of the Applicable Regional Reliability Councils to augment the reliability of the bulk power supply facilities of the region and comply with Applicable Regional Reliability Councils and NERC operating and planning standards, principles and guidelines and the PJM Manuals implementing such standards, principles and guidelines;
- (e) Obtain or arrange for transmission service as appropriate to carry out this Agreement;
- (f) Cooperate with the Office of the Interconnection's coordination of the operating and maintenance schedules of the Member's generating and Transmission Facilities with the facilities of other Members to maintain reliable service to its own customers and those of the other Members and to obtain economic efficiencies consistent therewith;
- (g) Cooperate with the other Members and the Office of the Interconnection in the analysis, formulation and implementation of plans to prevent or eliminate conditions that impair the reliability of the PJM Region; and
- (h) Adopt and apply standards adopted pursuant to this Agreement and conforming to NERC, and Applicable Regional Reliability Council standards, principles and guidelines and the PJM Manuals, for system design, equipment ratings, operating practices and maintenance practices.

### **11.3.3 Electric Distributors.**

In addition to any of the foregoing responsibilities that may be applicable, each Member that is an Electric Distributor, whether or not that Member votes in the Members Committee in the Electric Distributor sector or meets the eligibility requirements for any other sector of the Members Committee, shall:

(a) Accept, comply with or be compatible with all standards applicable within the PJM Region with respect to system design, equipment ratings, operating practices and maintenance practices as set forth in the PJM Manuals, or be subject to an interconnected Member's requirements relating to the foregoing, so that sufficient electrical equipment, control capability, information and communication are available to the Office of the Interconnection for planning and operation of the PJM Region;

(b) Assure the continued compatibility of its local system energy management system monitoring and telecommunications systems to satisfy the technical requirements of interacting automatically or manually with the Office of the Interconnection as it directs the operation of the PJM Region;

(c) Maintain or arrange for a portion of its connected load to be subject to control by automatic underfrequency, under-voltage, or other load-shedding devices at least equal to the levels established pursuant to the Reliability Assurance Agreement, ~~Reliability Assurance Agreement West and Reliability Assurance Agreement South, as applicable~~, or be subject to another Member's control for these purposes;

(d) Provide or arrange for sufficient reactive capability and voltage control facilities to conform to Good Utility Practice and (i) to meet the reactive requirements of its system and customers and (ii) to maintain adequate voltage levels and the stability required by the bulk power supply facilities of the PJM Region;

(e) Shed connected load, share Generation Capacity Resources, initiate ~~active load management~~ Interruptible Load for Reliability programs, and take such other coordination actions as may be necessary in accordance with the directions of the Office of the Interconnection in Emergencies;

(f) Maintain or arrange for a portion of its Generation Capacity Resources at least equal to the level established pursuant to the Reliability Assurance Agreement to have the ability to go from a shutdown condition to an operating condition and start delivering power without assistance from the power system;

(g) Provide or arrange through another Member for the services of a 24-hour local control center to coordinate with the Office of the Interconnection, each such control center to be furnished with appropriate telemetry equipment as specified in the PJM Manuals, and to be staffed by system operators trained and delegated sufficient authority to take any action necessary to assure that the system for which the operator is responsible is operated in a stable and reliable manner. In addition to meeting any training standards and requirements specified in this Agreement, local control center staff shall be required to meet applicable training standards and requirements in PJM Manual 01, Control Center Requirements, including the PJM System Operator Training Requirements in Attachment C;

(h) Provide to the Office of the Interconnection all System, accounting, customer tracking, load forecasting (including all load to be served from its System) and other data necessary or appropriate to implement or administer this Agreement, ~~and the Reliability Assurance Agreement, the Reliability Assurance Agreement West and the Reliability Assurance Agreement South~~; and

(i) Comply with the underfrequency relay obligations and charges specified in Schedule 7 of this Agreement.

#### **11.3.4 Reports to the Office of the Interconnection.**

Each Member shall report as promptly as possible to the Office of the Interconnection any changes in its operating practices and procedures relating to the reliability of the bulk power supply facilities of the PJM Region. The Office of the Interconnection shall review such reports, and if any change in an operating practice or procedure of the Member is not in accord with the established operating principles, practices and procedures for the PJM Region and such change adversely affects such region and regional reliability, it shall so inform such Member, and the other Members through their representative on the Operating Committee, and shall direct that such change be modified to conform to the established operating principles, practices and procedures.

#### **11.4 Regional Transmission Expansion Planning Protocol.**

The Members shall participate in regional transmission expansion planning in accordance with the Regional Transmission Expansion Planning Protocol set forth in Schedule 6 to this Agreement.

#### **11.5 Member Right to Petition.**

(a) Nothing herein shall deprive any Member of the right to petition FERC to modify any provision of this Agreement or any Schedule or practice hereunder that the petitioning Member believes to be unjust, unreasonable, or unduly discriminatory under section 206 of the Federal Power Act, subject to the right of any other Member (a) to oppose said proposal, or (b) to withdraw from the L.L.C pursuant to Section 4.1.

(b) Nothing herein shall be construed as affecting in any way the right of the Members, acting pursuant to a vote of the Members Committee as specified in Section 8.4, unilaterally to make an application to FERC for a change in any rate, charge, classification, tariff or service, or any rule or regulation related thereto, under section 205 of the Federal Power Act and pursuant to the rules and regulations promulgated by FERC thereunder, subject to the right of any Member that voted against such change in any rate, charge, classification, tariff or service, or any rule or regulation related thereto, in intervene in opposition to any such application.

#### **11.6 Membership Requirements.**

(a) To qualify as a Member, an entity shall:

- i) Be a Transmission Owner a Generation Owner, an Other Supplier, an Electric Distributor, or an End-Use Customer; and
- ii) Accept the obligations set forth in this Agreement.

(b) Certain Members that are Load Serving Entities are parties to the Reliability Assurance Agreement, ~~Reliability Assurance Agreement West, or Reliability Assurance Agreement South~~. Upon becoming a Member, any entity that is a Load Serving Entity in the ~~MAA~~PJM Control Region ~~Zone~~ and that wishes to become a Market Buyer shall also simultaneously execute the Reliability Assurance Agreement. ~~Any entity that is a~~

Load Serving Entity in the PJM West Region and that wishes to become a Market Buyer shall also simultaneously execute the Reliability Assurance Agreement West. ~~Any entity that is a Load Serving Entity in the PJM South Region and that wishes to become a Market Buyer shall also simultaneously execute the Reliability Assurance Agreement South.~~

(c) An entity that wishes to become a party to this Agreement shall apply, in writing, to the President setting forth its request, its qualifications for membership, its agreement to supply data as specified in this Agreement, its agreement to pay all costs and expenses in accordance with Schedule 3, and providing all information specified pursuant to the Schedules to this Agreement for entities that wish to become Market Participants. Any such application that meets all applicable requirements shall be approved by the President within sixty (60) days.

(d) Nothing in this Section 11 is intended to remove, in any respect, the choice of participation by other utility companies or organizations in the operation of the PJM Region through inclusion in the System of a Member.

(e) An entity whose application is accepted by the President pursuant to Section 11.6(c) shall execute a supplement to this Agreement in substantially the form prescribed in Schedule 4, which supplement shall be countersigned by the President. The entity shall become a Member effective on the date the supplement is countersigned by the President.

(f) Entities whose applications contemplate expansion or rearrangement of the PJM Region may become Members promptly as described in Sections 11.6(c) and 11.6(e) above, but the integration of the applicant's system into all of the operation and accounting provisions of this Agreement and the Reliability Assurance Agreement, ~~or, as applicable, the Reliability Assurance Agreement West or the Reliability Assurance Agreement South,~~ shall occur only after completion of all required installations and modifications of metering, communications, computer programming, and other necessary and appropriate facilities and procedures, as determined by the Office of the Interconnection. The Office of the Interconnection shall notify the other Members when such integration has occurred.

(g) Entities that become Members will be listed in Schedule 12 of this Agreement.

(h) In accordance with the MAAC Agreement, a Member serving load in the MAAC Control Zone shall be a member of MAAC and any other Member may be a member of MAAC.

## 12. TRANSFERS OF MEMBERSHIP INTEREST

The rights and obligations created by this Agreement shall inure to and bind the successors and assigns of such Member; provided, however, that the rights and obligations of any Member hereunder shall not be assigned without the approval of the Members Committee except as to a successor in operation of a Member's electric operating properties by reason of a merger, consolidation, reorganization, sale, spin-off, or foreclosure, as a result of which substantially all such electric operating properties are acquired by such a successor, and such successor becomes a Member.

## 13. INTERCHANGE

### 13.1 Interchange Arrangements with Non-Members.

Any Member may enter into interchange arrangements with others that are not Members with respect to the delivery or receipt of capacity and energy to fulfill its obligations hereunder or for any other purpose, subject to the standards and requirements established in or pursuant to this Agreement.

### **1.3.13 Maximum Generation Emergency.**

"Maximum Generation Emergency" shall mean an Emergency declared by the Office of the Interconnection in which the Office of the Interconnection anticipates requesting one or more Generation Capacity Resources or ~~Available Capacity Resources~~ to operate at its maximum net or gross electrical power output, subject to the equipment stress limits for such Generation Capacity Resource, in order to manage, alleviate, or end the Emergency.

### **1.3.14 Minimum Generation Emergency.**

"Minimum Generation Emergency" shall mean an Emergency declared by the Office of the Interconnection in which the Office of the Interconnection anticipates requesting one or more generating resources to operate at or below Normal Minimum Generation, in order to manage, alleviate, or end the Emergency.

### **1.3.14A NERC Interchange Distribution Calculator.**

"NERC Interchange Distribution Calculator" shall mean the NERC mechanism that is in effect and being used to calculate the distribution of energy, over specific transmission interfaces, from energy transactions.

### **1.3.15 Network Resource.**

"Network Resource" shall have the meaning specified in the PJM Tariff.

### **1.3.16 Network Service User.**

"Network Service User" shall mean an entity using Network Transmission Service.

### **1.3.17 Network Transmission Service.**

"Network Transmission Service" shall mean transmission service provided pursuant to the rates, terms and conditions set forth in Part III of the PJM Tariff, or transmission service comparable to such service that is provided to a Load Serving Entity that is also a Transmission Owner.

### **1.3.18 Normal Maximum Generation.**

"Normal Maximum Generation" shall mean the highest output level of a generating resource under normal operating conditions.

### **1.3.19 Normal Minimum Generation.**

"Normal Minimum Generation" shall mean the lowest output level of a generating resource under normal operating conditions.

### **1.3.20 Offer Data.**

"Offer Data" shall mean the scheduling, operations planning, dispatch, new resource, and other data and information necessary to schedule and dispatch generation resources and Demand Resource(s)

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(b) An applicant that is a Load Serving Entity or that will purchase on behalf of or for ultimate delivery to a Load Serving Entity shall establish to the satisfaction of the Office of the Interconnection that the end-users that will be served through energy and related services purchased in the PJM Interchange Energy Market, are located electrically within the PJM Region, or will be brought within the PJM Region prior to any purchases from the PJM Interchange Energy Market. Such applicant shall further demonstrate that:

- i) The Load Serving Entity for the end users is obligated to meet the requirements of the Reliability Assurance Agreement; ~~Reliability Assurance Agreement-West, or Reliability Assurance Agreement-South, as applicable, and~~
- ii) The Load Serving Entity for the end users has arrangements in place for Network Transmission Service or Point-To-Point Transmission Service for all PJM Interchange Energy Market purchases.

(c) An applicant that is not a Load Serving Entity or purchasing on behalf of or for ultimate delivery to a Load Serving Entity shall demonstrate that:

- i) The applicant has obtained or will obtain Network Transmission Service or Point-to-Point Transmission Service for all PJM Interchange Energy Market purchases; and
- ii) The applicant's PJM Interchange Energy Market purchases will ultimately be delivered to a load in another Control Area that is recognized by NERC and that complies with NERC's standards for operating and planning reliable bulk electric systems.

(d) An applicant shall not be required to obtain transmission service for purchases from the PJM Interchange Energy Market to cover quantity deviations from its sales in the Day-ahead Energy Market.

(e) All applicants shall demonstrate that:

- i) The applicant is capable of complying with all applicable metering, data storage and transmission, and other reliability, operation, planning and accounting standards and requirements for the operation of the PJM Region and the PJM Interchange Energy Market;
- ii) The applicant meets the creditworthiness standards established by the Office of the Interconnection, or has provided a letter of credit or other form of security acceptable to the Office of the Interconnection; and
- iii) The applicant has paid all applicable fees and reimbursed the Office of the Interconnection for all unusual or extraordinary costs of processing and evaluating its application to become a Market Buyer, and has agreed in its application to subject any disputes arising from its application to the PJM Dispute Resolution Procedures.

(f) The applicant shall become a Market Buyer upon a final favorable determination on its application by the Office of the Interconnection as specified below, and execution by the applicant of counterparts of this Agreement.

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#### **1.4.2 Submission of Information.**

The applicant shall furnish all information reasonably requested by the Office of the Interconnection in order to determine the applicant's qualification to be a Market Buyer. The Office of the Interconnection may waive the submission of information relating to any of the foregoing criteria, to the extent the information in the Office of the Interconnection's possession is sufficient to evaluate the application against such criteria.

#### **1.4.3 Fees and Costs.**

The Office of the Interconnection shall require all applicants to become a Market Buyer to pay a uniform application fee, initially in the amount of \$1,500, to defray the ordinary costs of processing such applications. The application fee shall be revised from time to time as the Office of the Interconnection shall determine to be necessary to recover its ordinary costs of processing applications. Any unusual or extraordinary costs incurred by the Office of the Interconnection in processing an application shall be reimbursed by the applicant.

#### **1.4.4 Office of the Interconnection Determination.**

Upon submission of the information specified above, and such other information as shall reasonably be requested by the Office of the Interconnection, the Office of the Interconnection shall undertake an evaluation and investigation to determine whether the applicant meets the criteria specified above. As soon as practicable, but in any event not later than 60 days after submission of the foregoing information, or such later date as may be necessary to satisfy the requirements of the Reliability Assurance Agreement, ~~Reliability Assurance Agreement West, or Reliability Assurance Agreement South,~~ the Office of the Interconnection shall notify the applicant and the members of the Members Committee of its determination, along with a written summary of the basis for the determination. The Office of the Interconnection shall respond promptly to any reasonable and timely request by a Member for additional information regarding the basis for the Office of the Interconnection's determination, and shall take such action as it shall deem appropriate in response to any request for reconsideration or other action submitted to the Office of the Interconnection not later than 30 days from the initial notification to the Members Committee.

#### **1.4.5 Existing Participants.**

Any entity that was qualified to participate as a Market Buyer in the PJM Interchange Energy Market under the Operating Agreement of PJM Interconnection L.L.C. in effect immediately prior to the Effective Date shall continue to be qualified to participate as a Market Buyer in the PJM Interchange Energy Market under this Agreement.

#### **1.4.6 Withdrawal.**

(a) An Internal Market Buyer that is a Load Serving Entity may withdraw from this Agreement by giving written notice to the Office of the Interconnection specifying an effective date of withdrawal not earlier than the effective date of (i) its withdrawal from the Reliability Assurance Agreement, ~~Reliability Assurance Agreement West, or Reliability Assurance Agreement South,~~ or (ii) the assumption of its obligations under the Reliability Assurance Agreement, ~~Reliability Assurance Agreement West, or Reliability Assurance Agreement South~~ by an agent that is a Market Buyer.

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## **1.6 Office of the Interconnection.**

### **1.6.1 Operation of the PJM Interchange Energy Market.**

The Office of the Interconnection shall operate the PJM Interchange Energy Market in accordance with this Agreement.

### **1.6.2 Scope of Services.**

The Office of the Interconnection shall, on behalf of the Market Participants, perform the services pertaining to the PJM Interchange Energy Market specified in this Agreement, including but not limited to the following:

- i) Administer the PJM Interchange Energy Market as part of the PJM Region, including scheduling and dispatching of generation resources, accounting for transactions, rendering bills to the Market Participants, receiving payments from and disbursing payments to the Market Participants, maintaining appropriate records, and monitoring the compliance of Market Participants with the provisions of this Agreement, all in accordance with applicable provisions of the Office of the Interconnection Agreement, and the Schedules to this Agreement;
- ii) Review and evaluate the qualification of entities to be Market Buyers, Market Sellers, or Economic Load Response Participants under applicable provisions of this Agreement;
- iii) Coordinate, in accordance with applicable provisions of this Agreement, the Reliability Assurance Agreement, ~~the Reliability Assurance Agreement West, the Reliability Assurance Agreement South,~~ and the Consolidated Transmission Owners Agreement, maintenance schedules for generation and transmission resources operated as part of the PJM Region;
- iv) Provide or coordinate the provision of ancillary services necessary for the operation of the PJM Region or the PJM Interchange Energy Market;
- v) Determine and declare that an Emergency is expected to exist, exists, or has ceased to exist, in all or any part of the PJM Region, or in another directly or indirectly interconnected Control Area and serve as a primary point of contact for interested state or federal agencies;
- vi) Enter into (a) agreements for the transfer of energy in conditions constituting an Emergency in the PJM Region or in an interconnected Control Area, and the mutual provision of other support in such Emergency conditions with other interconnected Control Areas, and (b) purchases of Emergency energy offered by Members from resources that are not Capacity Resources in conditions constituting an Emergency in the PJM Region;

### **1.7.9 Delivery to an External Market Buyer.**

A purchase of Spot Market Energy by an External Market Buyer shall be delivered to a bus or buses at the electrical boundaries of the PJM Region specified by the Office of the Interconnection, or to load in such area that is not served by Network Transmission Service, using Point-to-Point Transmission Service paid for by the External Market Buyer. Further delivery of such energy shall be the responsibility of the External Market Buyer.

### **1.7.10 Other Transactions.**

(a) Market Participants may enter into bilateral contracts for the purchase or sale of electric energy to or from each other or any other entity, subject to the obligations of Market Participants to make Generation Capacity Resources available for dispatch by the Office of the Interconnection. Bilateral arrangements that contemplate the physical transfer of energy to or from a Market Participant shall be reported to and coordinated with the Office of the Interconnection in accordance with this Schedule.

(b) Market Participants shall have Spot Market Backup with respect to all bilateral transactions that are not dynamically scheduled pursuant to Section 1.12 and that are curtailed or interrupted for any reason (except for curtailments or interruptions through active load management for load located within the PJM Region).

(c) To the extent the Office of the Interconnection dispatches a Generating Market Buyer's generation resources, such Generating Market Buyer may elect to net the output of such resources against its hourly Equivalent Load. Such a Generating Market Buyer shall be deemed a buyer from the PJM Interchange Energy Market to the extent of its PJM Interchange Imports, and shall be deemed a seller to the PJM Interchange Energy Market to the extent of its PJM Interchange Exports.

(d) A Market Seller may self-supply Station Power for its generation facility in accordance with the following provisions:

- (i) A Market Seller may self-supply Station Power for its generation facility during any month (1) when the net output of such facility is positive, or (2) when the net output of such facility is negative and the Market Seller during the same month has available at other of its generation facilities positive net output in an amount at least sufficient to offset fully such negative net output. For purposes of this subsection (d), "net output" of a generation facility during any month means the facility's gross energy output, less the Station Power requirements of such facility, during that month. The determination of a generation facility's or a Market Seller's monthly net output under this subsection (d) will apply only to determine whether the Market Seller self-supplied Station Power during the month and will not affect the price of energy sold or consumed by the Market Seller at any bus during any hour during the month. For

(b) The Office of the Interconnection shall obtain and maintain for each Synchronized Reserve Zone an amount of Synchronized Reserve equal to the Synchronized Reserve objective for such Synchronized Reserve Zone, as specified in the PJM Manuals.

(c) The Synchronized Reserve capability of a generation resource and Demand Resource shall be the increase in energy output or load reduction achievable by the generation resource and Demand Resource within a continuous 10-minute period.

(d) A generation unit capable of automatic energy dispatch that also is providing Synchronized Reserve shall have its energy dispatch range reduced by the amount of the Synchronized Reserve provided. The amount of Synchronized Reserve provided by a generation unit shall serve to redefine the Normal Maximum Generation energy limit of that generation unit in that the amount of Synchronized Reserve provided shall be subtracted from its Normal Maximum Generation energy limit.

#### **1.7.20 Communication and Operating Requirements.**

(a) Market Participants. Each Market Participant shall have, or shall arrange to have, its transactions in the PJM Interchange Energy Market subject to control by a Market Operations Center, with staffing and communications systems capable of real-time communication with the Office of the Interconnection during normal and Emergency conditions and of control of the Market Participant's relevant load or facilities sufficient to meet the requirements of the Market Participant's transactions with the PJM Interchange Energy Market, including but not limited to the following requirements as applicable.

(b) Market Sellers selling from generation resources and/or Demand Resources within the PJM Region shall: report to the Office of the Interconnection sources of energy and Demand Resources available for operation; supply to the Office of the Interconnection all applicable Offer Data; report to the Office of the Interconnection generation resources and Demand Resources that are self-scheduled; with respect to generation resources, report to the Office of the Interconnection bilateral sales transactions to buyers not within the PJM Region; confirm to the Office of the Interconnection bilateral sales to Market Buyers within the PJM Region; respond to the Office of the Interconnection's directives to start, shutdown or change output levels of generation units, or change scheduled voltages or reactive output levels of generation units, or reduce load from Demand Resources; continuously maintain all Offer Data concurrent with on-line operating information; and ensure that, where so equipped, generating equipment and Demand Resources are operated with control equipment functioning as specified in the PJM Manuals.

(c) Market Sellers selling from generation resources outside the PJM Region shall: provide to the Office of the Interconnection all applicable Offer Data, including offers specifying amounts of energy available, hours of availability and prices of energy and other services; respond to Office of the Interconnection directives to schedule delivery or change delivery schedules; and communicate delivery schedules to the Market Seller's Control Area.

(d) Market Participants that are Load Serving Entities or purchasing on behalf of Load Serving Entities shall: respond to Office of the Interconnection directives for load management steps; report to the Office of the Interconnection Generation Capacity Resources to satisfy capacity obligations that are available for pool operation; report to the Office of the Interconnection all bilateral purchase transactions; respond to other Office of the Interconnection directives such as those required during Emergency operation.

adequately resolved, or discloses a need for changes in standards or policies established in or pursuant to the Operating Agreement, any of the foregoing parties may make a written request for review of the matter by the Members Committee, and shall include with the request the forwarding party's recommendation and such data or information (subject to confidentiality or other non-disclosure requirements) as would enable the Members Committee to assess the matter and the recommendation. The Members Committee shall take such action on the recommendation as it shall deem appropriate.

(d) Subject to the right of a Market Participant to obtain correction of accounting or billing errors, the LLC or a Market Participant shall not be entitled to actual, compensatory, consequential or punitive damages, opportunity costs, or other form of reimbursement from the LLC or any other Market Participant for any loss, liability or claim, including any claim for lost profits, incurred as a result of a mistake, error or other fault by the Office of the Interconnection in the selection, scheduling or dispatch of resources.

### **1.9 Prescheduling.**

The following procedures and principles shall govern the prescheduling activities necessary to plan for the reliable operation of the PJM Region and for the efficient operation of the PJM Interchange Energy Market.

#### **1.9.1 Outage Scheduling.**

The Office of the Interconnection shall be responsible for coordinating and approving requests for outages of generation and transmission facilities as necessary for the reliable operation of the PJM Region, in accordance with the PJM Manuals. The Office of the Interconnection shall maintain records of outages and outage requests of these facilities.

#### **1.9.2 Planned Outages.**

(a) A Generator Planned Outage shall be included in Generator Planned Outage schedules established prior to the scheduled start date for the outage, in accordance with standards and procedures specified in the PJM Manuals.

(b) The Office of the Interconnection shall conduct Generator Planned Outage scheduling for Generation Capacity Resources in accordance with the Reliability Assurance Agreement, ~~the Reliability Assurance Agreement-West, the Reliability Assurance Agreement-South,~~ and the PJM Manuals and in consultation with the Members owning or controlling the output of ~~Capacity such Resources.~~ A Market Participant shall not be expected to submit offers for the sale of energy or other services, or to satisfy delivery obligations, from all or part of a generation resource undergoing an approved Generator Planned Outage. If the Office of the Interconnection determines that approval of a Generator Planned Outage would significantly affect the reliable operation of the PJM Region, the Office of the Interconnection may withhold approval or withdraw a prior approval. Approval for a Generator Planned Outage of a Generation Capacity Resource shall be withheld or withdrawn only as necessary to ensure the adequacy of reserves or the reliability of the PJM Region in connection with anticipated implementation or avoidance of Emergency procedures. If the Office of the Interconnection withholds or withdraws approval, it shall coordinate with the Market Participant owning or controlling the resource to reschedule the

Generator Planned Outage of the Generation Capacity Resource at the earliest practical time. The Office of the Interconnection shall if possible propose alternative schedules with the intent of minimizing the economic impact on the Market Participant of a Generator Planned Outage.

(c) The Office of the Interconnection shall conduct Transmission Planned Outage scheduling in accordance with procedures specified in, the Consolidated Transmission Owners Agreement, and the PJM Manuals, and in accordance with the following procedures:

- (i) Transmission Owners shall submit Transmission Planned Outage schedules one year in advance for all outages that are expected to exceed five working days duration or that are anticipated to result in significant system impacts, with regular (at least monthly) updates as new information becomes available.
- (ii) Transmission Owners shall submit notice of all Transmission Planned Outages to the Office of the Interconnection by the first day of the month preceding the month the outage will commence, with updates as new information becomes available.
- (iii) If notice of a Transmission Planned Outage is not provided by the first day of the month preceding the month the outage will commence, and if such outage is determined by the Office of the Interconnection to have the potential to cause transmission system congestion, then the Office of the Interconnection may require the Transmission Owner to implement an alternative outage schedule to reduce or avoid the congestion. The Office of the Interconnection shall perform this analysis and notify the Transmission Owner in a timely manner if it will require rescheduling of the outage.
- (iv) The Office of the Interconnection shall post notice of Transmission Planned Outages on OASIS upon receipt of such notice from the Transmission Owner; provided, however, that the Office of the Interconnection shall not post on OASIS notice of any component of a Transmission Planned Outage to the extent such component shall directly reveal a generator outage. In such cases, the Transmission Owner, in addition to providing notice to the Office of Interconnection as required above, concurrently shall inform the affected Generation Owner of such outage, limiting such communication to that necessary to describe the outage and to coordinate with the Generation Owner on matters of safety to persons, facilities, and equipment. The Transmission Owner shall not notify any other Market Participant of such outage and shall arrange any other necessary coordination through the Office of the Interconnection.

In addition, if the Office of the Interconnection determines that transmission maintenance schedules proposed by one or more Members would significantly affect the efficient and reliable operation of the PJM Region, the Office of the Interconnection may establish alternative schedules, but

such alternative shall minimize the economic impact on the Member or Members whose maintenance schedules the Office of the Interconnection proposes to modify.

(d) The Office of the Interconnection shall coordinate resolution of outage or other planning conflicts that may give rise to unreliable system conditions. The Members shall comply with all maintenance schedules established by the Office of the Interconnection.

### **1.9.3 Generator Maintenance Outages.**

A Market Participant may request approval for a Generator Maintenance Outage of any Generation Capacity Resource from the Office of the Interconnection in accordance with the timetable and other procedures specified in the PJM Manuals. The Office of the Interconnection shall approve requests for Generator Maintenance Outages for such a Generation Capacity Resource unless the outage would threaten the adequacy of reserves in, or the reliability of, the PJM Region. A Market Participant shall not be expected to submit offers for the sale of energy or other services, or to satisfy delivery obligations, from a generation resource undergoing an approved full or partial Generator Maintenance Outage.

### **1.9.4 Forced Outages.**

(a) Each Market Seller that owns or controls a pool-scheduled resource, or a Generation Capacity Resource whether or not pool-scheduled, shall: (i) advise the Office of the Interconnection of a Generator Forced Outage suffered or anticipated to be suffered by any such resource as promptly as possible; (ii) provide the Office of the Interconnection with the expected date and time that the resource will be made available; and (iii) make a record of the events and circumstances giving rise to the Generator Forced Outage. A Market Seller shall not be expected to submit offers for the sale of energy or other services, or satisfy delivery obligations, from a generation resource undergoing a Generator Forced Outage. A Generation Capacity Resource that does not deliver all or part of its scheduled energy shall be deemed to have experienced a Generator Forced Outage with respect to such undelivered energy, in accordance with standards and procedures for full and partial Generator Forced Outages specified in the Reliability Assurance Agreement, ~~the Reliability Assurance Agreement~~ ~~West, the Reliability Assurance Agreement South,~~ and the PJM Manuals.

(b) The Office of the Interconnection shall receive notification of Forced Transmission Outages, and information on the return to service, of Transmission Facilities in the PJM Region in accordance with standards and procedures specified in, as applicable, the Consolidated Transmission Owners Agreement and the PJM Manuals.

### **1.9.4A Transmission Outage Acceleration.**

(a) Planned Transmission Outages and Forced Transmission Outages otherwise scheduled pursuant to sections 1.9.2 and 1.9.4 respectively of this Schedule may be accelerated or rescheduled at the request of a Generation Owner or other Market Participant in accordance with the terms and conditions of this section 1.9.4A and the PJM Manuals.

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shall provide detailed data justifying such transmission facility ratings when directed by the Office of the Interconnection.

(b) In addition to the seasonal verification of all ratings, each Transmission Owner shall submit to the Operations Planning Department (or successor Department) of the Office of the Interconnection updates to its transmission facility ratings as soon as such Transmission Owner is aware of any changes. Such Transmission Owner shall provide the Office of the Interconnection with detailed data justifying all such transmission facility ratings changes.

(c) All Transmission Owners shall submit to the Operations Planning Department (or successor Department) of the Office of the Interconnection formal documentation of any procedure for changing facility ratings under specific conditions, including: the detailed conditions under which such procedures will apply, detailed explanations of such procedures, and detailed calculations justifying such pre-established changes to facility ratings. Such procedures must be updated twice each year consistent with the provisions of this Section.

### **1.9.9 Office of the Interconnection Responsibilities.**

(a) The Office of the Interconnection shall perform seasonal operating studies to assess the forecasted adequacy of generating reserves and of the transmission system, in accordance with the procedures specified in the PJM Manuals.

(b) The Office of the Interconnection shall maintain and update tables setting forth Operating Reserve and other reserve objectives as specified in the PJM Manuals and as consistent with the Reliability Assurance Agreement, ~~Reliability Assurance Agreement West, and Reliability Assurance Agreement South.~~

(c) The Office of the Interconnection shall receive and process requests for firm and non-firm transmission service in accordance with procedures specified in the PJM Tariff.

(d) The Office of the Interconnection shall maintain such data and information relating to generation and transmission facilities in the PJM Region as may be necessary or appropriate to conduct the scheduling and dispatch of the PJM Interchange Energy Market and PJM Region.

(e) The Office of the Interconnection shall maintain an historical database of all transmission facility ratings, and shall review, and may modify or reject, any submitted change or any submitted procedure for pre-established transmission facility rating changes. Any dispute between a Transmission Owner and the Office of the Interconnection concerning transmission facility ratings shall be resolved in accordance with the dispute resolution procedures in schedule 5 to the Operating Agreement; provided, however, that the rating level determined by the Office of the Interconnection shall govern and be effective during the pendency of any such dispute.

(f) The Office of the Interconnection shall coordinate with other interconnected Control Area as necessary to manage, alleviate or end an Emergency.

### **1.10 Scheduling.**

#### **1.10.1 General.**

(a) The Office of the Interconnection shall administer scheduling processes to implement a Day-ahead Energy Market and a Real-time Energy market.



each such self-scheduled resource will disconnect or reduce output, or confirmation of the Market Buyer's intent not to reduce output.

(c) All Market Participants shall submit to the Office of the Interconnection schedules for any bilateral transactions involving use of generation or Transmission Facilities as specified below, and shall inform the Office of the Interconnection whether the transaction is to be included in the Day-ahead Energy Market. Any Market Participant that elects to include a bilateral transaction in the Day-ahead Energy Market may specify the price (such price not to exceed the maximum price that may be specified in the PJM Manuals), if any, at which it will be wholly or partially curtailed rather than pay Transmission Congestion Charges. The foregoing price specification shall apply to the price difference between the specified bilateral transaction source and sink points in the day-ahead scheduling process only. Any Market Participant that elects not to include its bilateral transaction in the Day-ahead Energy Market shall inform the Office of the Interconnection if the parties to the transaction are not willing to incur Transmission Congestion Charges in the Real-time Energy Market in order to complete any such scheduled bilateral transaction. Scheduling of bilateral transactions shall be conducted in accordance with the specifications in the PJM Manuals and the following requirements:

- i) Internal Market Buyers shall submit schedules for all bilateral purchases for delivery within the PJM Region, whether from generation resources inside or outside the PJM Region;
- ii) Market Sellers shall submit schedules for bilateral sales to entities outside the PJM Region from generation within the PJM Region that is not dynamically scheduled to such entities pursuant to Section 1.12; and
- iii) In addition to the foregoing schedules for bilateral transactions, Market Participants shall submit confirmations of each scheduled bilateral transaction from each other party to the transaction in addition to the party submitting the schedule, or the adjacent Control Area.

(d) Market Sellers wishing to sell into the Day-ahead Energy Market shall submit offers for the supply of energy (including energy from hydropower units), demand reductions, Regulation, Operating Reserves or other services for the following Operating Day. Offers shall be submitted to the Office of the Interconnection in the form specified by the Office of the Interconnection and shall contain the information specified in the Office of the Interconnection's Offer Data specification, as applicable. Market Sellers owning or controlling the output of a Generation Capacity Resource that was committed in an FRR Capacity Plan, self-supplied or offered and has not cleared in a Base Residual Auction or Incremental Auction as specified in Attachment DD of the PJM Tariff, and that has not been rendered unavailable by a Generation Planned Outage, a Generator Maintenance Outage, or a Generation Forced Outage shall submit offers for the available capacity of such Generation Capacity Resource, including any portion that is self-scheduled by the Generating Market Buyer ~~claiming the resource as a Capacity Resource~~. The submission of offers for resource increments that ~~are not Capacity Resources~~ have not cleared in a Base Residual Auction or an Incremental Auction, or were not committed in an FRR Capacity Plan shall be optional, but any such offers must contain the information specified in the Office of the Interconnection's Offer Data specification, as applicable. Energy offered from generation resources that ~~are not have not cleared a Base Residual Auction or an Incremental Auction, or were not committed in an FRR Capacity Plan, Capacity Resources~~ shall not be supplied from resources that are included in or otherwise committed

to supply the Operating Reserves of a Control Area outside the PJM Region. The foregoing offers:

- i) Shall specify the ~~g~~Generation Capacity ~~r~~Resource or Demand Resource and energy for each hour in the offer period;
- ii) Shall specify the amounts and prices for the entire Operating Day for each resource component offered by the Market Seller to the Office of the Interconnection;
- iii) If based on energy from a specific generating unit, may specify start-up and no-load fees equal to the specification of such fees for such unit on file with the Office of the Interconnection, if based on reductions in demand from a Demand Resource may specify shutdown costs;
- iv) Shall set forth any special conditions upon which the Market Seller proposes to supply a resource increment, including any curtailment rate specified in a bilateral contract for the output of the resource, or any cancellation fees;
- v) May include a schedule of offers for prices and operating data contingent on acceptance by the deadline specified in this Schedule, with a second schedule applicable if accepted after the foregoing deadline;
- vi) Shall constitute an offer to submit the resource increment to the Office of the Interconnection for scheduling and dispatch in accordance with the terms of the offer, which offer shall remain open through the Operating Day for which the offer is submitted;
- vii) Shall be final as to the price or prices at which the Market Seller proposes to supply energy or other services to the PJM Interchange Energy Market, such price or prices being guaranteed by the Market Seller for the period extending through the end of the following Operating Day; and
- viii) Shall not exceed an energy offer price of \$1,000/megawatt-hour.

(e) A Market Seller that wishes to make a resource available to sell Regulation service shall submit an offer for Regulation that shall specify the MW of Regulation being offered, the Regulation Zone for which such regulation is offered, the price of the offer in dollars per MWh, and such other information specified by the Office of the Interconnection as may be necessary to evaluate the offer and the resource's opportunity costs. The price of the offer shall not exceed \$100 per MWh in the case of regulation offered for all Regulation Zones, except that offers for Regulation by American Electric Power Company and Virginia Electric Power Company and/or their respective affiliates for the Regulation Zone comprised of the ECAR Control Zone(s), MAIN Control Zone(s), or the VACAR Control Zone shall be cost-based consisting of the following components:

- i. The costs (in \$/MW) of the fuel cost increase due to the heat rate increase resulting from operating the unit at lower MW output incurred from the provision of Regulation;

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- ii. The cost increase (in \$/MW) in variable operating and maintenance costs resulting from operating the unit at lower MW output incurred from the provision of Regulation; and
- iii. An adder of up to \$7.50 per MW of Regulation provided.

Qualified Regulation capability must satisfy the verification tests specified in the PJM Manuals.

(f) Each Market Seller owning or controlling the output of a Generation Capacity Resource shall submit a forecast of the availability of each such Generation Capacity Resource for the next seven days. A Market Seller (i) may submit a non-binding forecast of the price at which it expects to offer a generation resource increment to the Office of the Interconnection over the next seven days, and (ii) shall submit a binding offer for energy, along with start-up and no-load fees, if any, for the next seven days or part thereof, for any generation resource with minimum notification or start-up requirement greater than 24 hours.

(g) Each offer by a Market Seller of a Generation Capacity Resource shall remain in effect for subsequent Operating Days until superseded or canceled.

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(h) The Office of the Interconnection shall post on the PJM Open Access Same-time Information System the total hourly loads scheduled in the Day-ahead Energy Market, as well as, its estimate of the combined hourly load of the Market Buyers for the next four days, and peak load forecasts for an additional three days.

(i) Except for Economic Load Response Participants, all Market Participants may submit Increment Bids and/or Decrement Bids that apply to the Day-ahead Energy Market only. Such bids must comply with the requirements set forth in the PJM Manuals and must specify amount, location and price, if any, at which the Market Participant desires to purchase or sell energy in the Day-ahead Energy Market. The Office of the Interconnection may require that a market participant shall not submit in excess of 3000 bid/offer segments in the Day-ahead Energy Market, when the Office of the Interconnection determines that such limit is required to avoid or mitigate significant system performance problems related to bid/offer volume. Notice of the need to impose such limit shall be provided prior to 10:00 a.m. EPT on the day that the Day-ahead Energy Market will clear. For purposes of this provision, a bid/offer segment is each pairing of price and megawatt quantity submitted as part of an Increment Bid or Decrement Bid.

(j) A Market Seller that wishes to make a generation resource or Demand Resource available to sell Synchronized Reserve shall submit an offer for Synchronized Reserve that shall specify the megawatts of Synchronized Reserve being offered, the price of the offer in dollars per megawatt hour, and such other information specified by the Office of the Interconnection as may be necessary to evaluate the offer and the energy used by the generation resource to provide the Synchronized Reserve and the generation resource's unit specific opportunity costs. The price of the offer shall not exceed the variable operating and maintenance costs for providing Synchronized Reserve plus seven dollars and fifty cents.

(k) An Economic Load Response Participant that wishes to participate in the Day-ahead Energy Market by reducing demand shall submit an offer to reduce demand to the Office of the Interconnection. The offer shall specify: (i) the amount of the offered curtailment in minimum increments of .1 megawatts; (ii) the Day-ahead Locational Marginal Price above which the end-use customer will reduce load; and (iii) at the Economic Load Response Participant's option, start-up costs associated with reducing load, including direct labor and equipment costs, opportunity costs, and/or a minimum of number of contiguous hours for which the load reduction must be committed.

(l) Market Sellers owning or controlling the output of a Demand Resource that was committed in an FRR Capacity Plan, self-supplied or offered and cleared in the Base Residual Auction or one of the Incremental Auctions, or owning or controlling the output of an ILR resource which was certified as specified in Attachment DD of the PJM Tariff, may submit demand reduction bids for the available load reduction capability of the Demand Resource or ILR resource. The submission of demand reduction bids for resource increments that have not cleared in the Base Residual Auction or in one of the Incremental Auctions, or for ILR resources that were not certified, or were not committed in an FRR Capacity Plan, shall be optional, but any such bids must contain the information specified in the PJM Economic Load Response Program to be included in such bids. A Demand Resource that was committed in an FRR Capacity Plan, self-supplied or offered and cleared in a Base Residual Auction or an Incremental Auction may submit a demand reduction bid in the Day-ahead Energy Market as specified in the Economic Load Response Program, provided however, that in the event of an Emergency, PJM shall require Demand Resources and ILR resources to reduce load notwithstanding that the Zonal LMP at the time such Emergency is declared is below the price identified in the demand reduction bid

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**1.10.2 Pool-scheduled Resources.**

Pool-scheduled resources are those resources for which Market Participants submitted offers to sell energy in the Day-ahead Energy Market and offers to reduce demand in the Day-ahead Energy Market, which the Office of the Interconnection scheduled in the Day-ahead Energy Market as well as generators committed by the Office of the Interconnection subsequent to the Day-ahead Energy Market. Such resources shall be committed to provide energy in the real-time dispatch unless the schedules for such units are revised pursuant to Sections 1.10.9 or 1.11. Pool-scheduled resources shall be governed by the following principles and procedures.

(a) Pool-scheduled resources shall be selected by the Office of the Interconnection on the basis of the prices offered for energy and demand reductions and related services, start-up, no-load and cancellation fees, and the specified operating characteristics, offered by Market Sellers to the Office of the Interconnection by the offer deadline specified in Section 1.10.1A.

(b) A resource that is scheduled by a Market Participant to support a bilateral sale, or that is self-scheduled by a Generating Market Buyer, shall not be selected by the Office of the Interconnection as a pool-scheduled resource except in an Emergency.

(c) Market Sellers offering energy from hydropower or other facilities with fuel or environmental limitations may submit data to the Office of the Interconnection that is sufficient to enable the Office of the Interconnection to determine the available operating hours of such facilities.

(d) The Market Seller of a resource selected as a pool-scheduled resource shall receive payments or credits for energy, demand reductions or related services, or for start-up and no-load fees, from the Office of the Interconnection on behalf of the Market Buyers in accordance with Section 3 of this Schedule 1. Alternatively, the Market Seller shall receive, in lieu of start-up and no-load fees, its actual costs incurred, if any, up to a cap of the resource's start-up cost, if the Office of the

Interconnection cancels its selection of the resource as a pool-scheduled resource and so notifies the Market Seller before the resource is synchronized.

(e) Market Participants shall make available their pool-scheduled resources to the Office of the Interconnection for coordinated operation to supply the Operating Reserves needs of the applicable Control Zone.

### **1.10.3 Self-scheduled Resources.**

Self-scheduled resources shall be governed by the following principles and procedures.

(a) Each Generating Market Buyer shall use all reasonable efforts, consistent with Good Utility Practice, not to self-schedule resources in excess of its Equivalent Load.

(b) The offered prices of resources that are self-scheduled, or otherwise not following the dispatch orders of the Office of the Interconnection, shall not be considered by the Office of the Interconnection in determining Locational Marginal Prices.

(c) Market Participants shall make available their self-scheduled resources to the Office of the Interconnection for coordinated operation to supply the Operating Reserves needs of the applicable Control Zone, by submitting an offer as to such resources.

(d) A Market Participant self-scheduling a resource in the Day-ahead Energy Market that does not deliver the energy in the Real-time Energy Market, shall replace the energy not delivered with energy from the Real-time Energy Market and shall pay for such energy at the applicable Real-time Price.

### **1.10.4 Capacity Resources.**

(a) A Generation Capacity Resource that is selected as a pool-scheduled resource shall be made available for scheduling and dispatch at the direction of the Office of the Interconnection. Such a Generation Capacity Resource that does not deliver energy as scheduled shall be deemed to have experienced a Generator Forced Outage to the extent of such energy not delivered. A Market Participant offering such Generation Capacity Resource in the Day-ahead Energy Market shall replace the energy not delivered with energy from the Real-time Energy Market and shall pay for such energy at the applicable Real-time Price.

(b) Energy from a Generation Capacity Resource that has not been scheduled in the Day-ahead Energy Market may be sold on a bilateral basis by the Market Seller, may be self-scheduled, or may be offered for dispatch during the Operating Day in accordance with the procedures specified in this Schedule. Such A Generation Capacity Resource that has not been scheduled in the Day-ahead Energy Market and that has been sold on a bilateral basis must be made available upon request to the Office of the Interconnection for scheduling and dispatch during the Operating Day if the Office of the Interconnection declares a Maximum Generation Emergency. Any such resource so scheduled and dispatched shall receive the applicable Real-time Price for energy delivered.

(c) A Generation Capacity Resource that has been self-scheduled shall not receive payments or credits for start-up or no-load fees.

#### **1.10.5 External Resources.**

(a) External Resources may submit offers to the PJM Interchange Energy Market, in accordance with the day-ahead and real-time scheduling processes specified above. An External Resource selected as a pool-scheduled resource shall be made available for scheduling and dispatch at the direction of the Office of the Interconnection, and except as specified below shall be compensated on the same basis as other pool-scheduled resources. External Resources that are not capable of dynamic dispatch shall, if selected by the Office of the Interconnection on the basis of the Market Seller's Offer Data, be block loaded on an hourly scheduled basis. Market Sellers shall offer External Resources to the PJM Interchange Energy Market on either a resource-specific or an aggregated resource basis. A Market Participant whose pool-scheduled resource does not deliver the energy scheduled in the Day-ahead Energy Market shall replace such energy not delivered as scheduled in the Day-ahead Energy Market with energy from the PJM Real-time Energy Market and shall pay for such energy at the applicable Real-time Price.

(b) Offers for External Resources from an aggregation of two or more generating units shall so indicate, and shall specify, in accordance with the Offer Data requirements specified by the Office of the Interconnection: (i) energy prices; (ii) hours of energy availability; (iii) a minimum dispatch level; (iv) a maximum dispatch level; and (v) unless such information has previously been made available to the Office of the Interconnection, sufficient information, as specified in the PJM Manuals, to enable the Office of the Interconnection to model the flow into the PJM Region of any energy from the External Resources scheduled in accordance with the Offer Data. If a Market Seller submits more than one offer on an aggregated resource basis, the withdrawal of any such offer shall be deemed a withdrawal of all higher priced offers for the same period.

(c) Offers for External Resources on a resource-specific basis shall specify the resource being offered, along with the information specified in the Offer Data as applicable.

#### **1.10.6 External Market Buyers.**

(a) Deliveries to an External Market Buyer not subject to dynamic dispatch by the Office of the Interconnection shall be delivered on a block loaded basis to the load bus or buses at the electrical boundaries of the PJM Region, or in such area with respect to an External Market Buyer's load within such area not served by Network Service, at which the energy is delivered to or for the External Market Buyer. External Market Buyers shall be charged or credited at either the Day-ahead Prices or Real-time Prices, whichever is applicable, for energy at the foregoing load bus or buses.

(b) An External Market Buyer's hourly schedules for energy purchased from the PJM Interchange Energy Market shall conform to the ramping and other applicable requirements of the interconnection agreement between the PJM Region and the Control Area to which, whether as an intermediate or final point of delivery, the purchased energy will initially be delivered.

output of pool-scheduled resource increments as necessary: (a) to maintain reliability, and subject to that constraint, to minimize the cost of supplying the energy, reserves, and other services required by the Market Buyers and the operation of the PJM Region; (b) to balance load and generation, maintain scheduled tie flows, and provide frequency support within the PJM Region; and (c) to minimize unscheduled interchange not frequency related between the PJM Region and other Control Areas.

### **1.11.2 Operating Basis.**

In carrying out the foregoing objectives, the Office of the Interconnection shall conduct the operation of the PJM Region in accordance with the PJM Manuals, and shall: (i) utilize available generating reserves and obtain required replacements; and (ii) monitor the availability of adequate reserves.

### **1.11.3 Pool-dispatched Resources.**

(a) The Office of the Interconnection shall implement the dispatch of energy from pool-scheduled resources with limited energy by direct request. In implementing mandatory or economic use of limited energy resources, the Office of the Interconnection shall use its best efforts to select the most economic hours of operation for limited energy resources, in order to make optimal use of such resources consistent with the dynamic load-following requirements of the PJM Region and the availability of other resources to the Office of the Interconnection.

(b) The Office of the Interconnection shall implement the dispatch of energy from other pool-dispatched resource increments, including generation increments from Capacity Resources the remaining increments of which are self-scheduled, by sending appropriate signals and instructions to the entity controlling such resources, in accordance with the PJM Manuals. Each Market Seller shall ensure that the entity controlling a pool-dispatched resource offered or made available by that Market Seller complies with the energy dispatch signals and instructions transmitted by the Office of the Interconnection.

### **1.11.3A Maximum Generation Emergency.**

If the Office of the Interconnection declares a Maximum Generation Emergency, all deliveries to load that is served by Point-to-Point Transmission Service outside the PJM Region from Generation Capacity Resources may be interrupted in order to serve load in the PJM Region.

### **1.11.4 Regulation.**

(a) A Market Buyer may satisfy its Regulation Obligation from its own generation resources and/or Demand Resources capable of performing Regulation service, by contractual arrangements with other Market Participants able to provide Regulation service, or by purchases from the PJM Interchange Energy Market at the rates set forth in Section 3.2.2.

(b) The Office of the Interconnection shall obtain Regulation service from the least-cost alternatives available from either pool-scheduled or self-scheduled generation resources and/or Demand Resources as needed to meet Regulation Zone requirements not otherwise satisfied by the Market Buyers. Generation resources or Demand Resources offering to sell Regulation shall be selected to provide Regulation on the



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#### **4. RATE TABLE**

##### **4.1 Offered Price Rates.**

Spot Market Energy, Regulation, Operating Reserve, and Transmission Congestion are based on offers to the Office of the Interconnection specified in this Agreement.

##### **4.2 Transmission Losses.**

Average loss factors shall be as specified in the PJM Tariff.

##### **4.3 Emergency Energy Purchases.**

The pricing for Emergency energy purchases will be determined by the Office of the Interconnection and: (a) an adjacent Control Area, in accordance with an agreement between the Office of the Interconnection and such adjacent Control Area, or (b) a Member, in accordance with arrangements made by the Office of Interconnection to purchase energy offered by such Member from resources that are not Capacity Resources.

#### **5. CALCULATION OF TRANSMISSION CONGESTION CHARGES AND CREDITS**

##### **5.1 Transmission Congestion Charge Calculation.**

###### **5.1.1 Calculation by Office of the Interconnection.**

When the transmission system is operating under constrained conditions, or as necessary to provide third-party transmission provider losses in accordance with Section 9.3, the Office of the Interconnection shall calculate Transmission Congestion Charges for each Network Service User, the PJM Interchange Energy Market, and each Transmission Customer.

###### **5.1.2 General.**

The basis for the Transmission Congestion Charges shall be the differences in the Locational Marginal Prices between points of delivery and points of receipt, as determined in accordance with Section 2 of this Schedule.

###### **5.1.3 Network Service User Calculation.**

Each Network Service User shall be charged for the increased cost of energy incurred by it during each constrained hour to deliver the output of its firm Generation Capacity Resources or other owned or contracted for resources, its firm bilateral purchases, and its non-firm bilateral purchases as to which it has elected to pay Transmission Congestion Charges. The Transmission Congestion Charge for deliveries from each such source shall be the Network Service User's hourly net bill less its hourly net PJM Interchange payments or sales as determined in accordance with Section 3.2.1 or Sections 3.3 and 3.3.1 of this Schedule.

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#### **7.4.3 Target Allocation of Auction Revenue Right Credits.**

A target allocation of Auction Revenue Right Credits for each entity holding an Auction Revenue Right shall be determined for each Auction Revenue Right. After each round of the annual Financial Transmission Right Auction, each Auction Revenue Right shall be divided by four and multiplied by the price differences for the receipt and delivery points associated with the Auction Revenue Right, calculated as the Locational Marginal Price at the delivery point(s) minus the Locational Marginal Price at the receipt point(s), where the price for the receipt and delivery point is determined by the clearing prices of each round of the annual Financial Transmission Right auction. The daily total target allocation for an entity holding the Auction Revenue Rights shall be the sum of the daily target allocations associated with all of the entity's Auction Revenue Rights.

#### **7.4.4 Calculation of Auction Revenue Right Credits.**

(a) Each day, the total of all the daily target allocations determined as specified above in Section 7.4.3 plus any additional Auction Revenue Rights target allocations applicable for that day shall be compared to the total revenues of all applicable monthly Financial Transmission Rights auction(s) (divided by the number of days in the month) plus the total revenues of the annual Financial Transmission Rights auction (divided by the number of days in the Planning Period). If the total of the target allocations is less than the total auction revenues, the Auction Revenue Right Credit for each entity holding an Auction Revenue Right shall be equal to its target allocation. All remaining funds shall be distributed as Excess Congestion Charges pursuant to Section 5.2.5.

(b) If the total of the target allocations is greater than the total auction revenues, each holder of Auction Revenue Rights shall be assigned a share of the total auction revenues in proportion to its Auction Revenue Rights target allocations for Auction Revenue Rights which have a positive Target Allocation value. Auction Revenue Rights which have a negative Target Allocation value are assigned the full Target Allocation value as a negative Auction Revenue Right Credit.

#### **7.5 Simultaneous Feasibility.**

The Office of the Interconnection shall make the simultaneous feasibility determinations specified herein using appropriate powerflow models of contingency-constrained dispatch. Such determinations shall take into account outages of both individual generation units and transmission facilities and shall be based on reasonable assumptions about the configuration and availability of transmission capability during the period covered by the auction that are not inconsistent with the determination of the deliverability of Generation Capacity Resources under the Reliability Assurance Agreement, ~~Reliability Assurance Agreement-West, or Reliability Assurance Agreement-South~~. The goal of the simultaneous feasibility determination shall be to ensure that there are sufficient revenues from Transmission Congestion Charges to satisfy all Financial Transmission Rights obligations for the auction period under expected conditions and to ensure that there are sufficient revenues from the annual Financial Transmission Right Auction to satisfy all Auction Revenue Rights obligations.

## REGISTRATION

Participants must complete the PJM Emergency Load Response Program Registration Form ("Emergency Registration Form") that is posted on the PJM web site ([www.pjm.com](http://www.pjm.com)). The following general steps will be followed:

1. The participant completes the Emergency Registration Form located on the PJM web site.  
PJM reviews the application and ensures that the qualifications are met, including verifying that the appropriate metering exists. PJM also confirms with the appropriate LSE and EDC whether the load reduction is under other contractual obligations. Other such obligations may not preclude participation in the program, but may require special consideration by PJM such that appropriate settlements are made within the confines of such existing contracts. The EDC and LSE have ten (10) business days to respond or PJM assumes acceptance.
2. PJM informs the requesting participant of acceptance into the program and notifies the appropriate LSE and EDC of the participant's acceptance into the program.  
Any end-use customer intending to run distributed generating units in support of local load for the purpose of participating in this program must represent in writing to PJM that it holds all applicable environmental and use permits for running those generators. Continuing participation in this program will be deemed as a continuing representation by the owner that each time its distributed generating unit is run in accordance with this program, it is being run in compliance with all applicable permits, including any emissions, run-time limit or other constraint on plant operations that may be imposed by such permits.

## EMERGENCY OPERATIONS

PJM will initiate the request for load reduction following the declaration of Maximum Emergency Generation and prior to the implementation of ~~ILR\_AIM~~ Steps 1 and 2. (Implementation of the Emergency Load Response Program can be used for regional emergencies.) It is implemented whenever generation is needed that is greater than the highest economic incremental cost. PJM posts the request for load reduction on the PJM web site, on the Emergency Conditions page, and on eData, and issues a burst email to the Emergency Load Response majordomo. A separate All-Call message is also issued.

Following PJM's request to reduce load, (i) participants in the Energy Only Option voluntarily may reduce load; and (ii) participants in the Full Program Option are required to reduce load unless they already have reduced load pursuant to the Economic Load Response Program. PJM will dispatch the resources of all Emergency Load Response Program participants (not already dispatched under the Economic Load Response Program) based on the Minimum Dispatch Prices specified in the participants' Emergency Registration Forms.

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Full Program Option participants that, prior to June 1, 2002, entered into contracts with LSEs or CSPs that enable participation in the Full Program Option, may participate in the Emergency Load Response program during Interruptible Load for Reliability (ILR) ~~ALM~~ events as long as the customer's ILR ~~ALM~~ contract explicitly excludes payment or credit for energy not consumed during ILR ~~ALM~~ events. If the LSE that submitted the Full Program Option participant for ILR ~~ALM~~ credit indicates that such participant is not eligible for simultaneous credit under the Emergency Load Response program and ILR ~~ALM~~ is called for concurrent with the Emergency Load Response program, then payments will be made to the participant according to the Emergency Load Response program only for the time during which ILR ~~ALM~~ obligations were not in effect. Any response in excess of the contracted ILR ~~ALM~~ amount will be

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## **SCHEDULE 5**

### **PJM DISPUTE RESOLUTION PROCEDURES**

#### **1. DEFINITIONS**

##### **1.1 Alternate Dispute Resolution Committee.**

"Alternate Dispute Resolution Committee" shall mean the Committee established pursuant to Section 5 of this Schedule.

##### **1.2 MAAC Dispute Resolution Committee.**

"MAAC Dispute Resolution Committee" shall mean the committee established by the Mid-Atlantic Area Council to administer its industry-specific mechanism for resolving certain types of wholesale electricity disputes.

##### **1.3 Related PJM Agreements.**

"Related PJM Agreements" shall mean this Agreement, the Consolidated Transmission Owners Agreement, and the Reliability Assurance Agreement, ~~the Reliability Assurance Agreement West, and the Reliability Assurance Agreement South.~~

#### **2. PURPOSES AND OBJECTIVES**

##### **2.1 Common and Uniform Procedures.**

The PJM Dispute Resolution Procedures are intended to establish common and uniform procedures for resolving disputes arising under the Related PJM Agreements. To the extent any of the foregoing agreements or the PJM Tariff contain dispute resolution provisions expressly applicable to disputes arising thereunder, however, this Agreement shall not supplant such provisions, which shall apply according to their terms.

##### **2.2 Interpretation.**

To the extent permitted by applicable law, the PJM Dispute Resolution Procedures are to be interpreted to effectuate the objectives set forth in Section 2.1. To the extent permitted by these PJM Dispute Resolution Procedures, the Alternate Dispute Resolution Committee shall coordinate with the established dispute resolution committee of an Applicable Regional Reliability Council, where appropriate, in order to conserve administrative resources and to avoid duplication of dispute resolution staffing.

## SCHEDULE 8

### DELEGATION OF PJM REGION CONTROL AREA RELIABILITY RESPONSIBILITIES

#### 1. DELEGATION

The following responsibilities shall be delegated to the Office of the Interconnection by the parties to the Reliability Assurance Agreement.

#### 2. NEW PARTIES

With regard to the addition, withdrawal or removal of a party to the Reliability Assurance Agreement, the Office of the Interconnection shall:

(a) Receive and evaluate the information submitted by entities that plan to serve loads within the PJM Control Area Region, including entities whose participation in the Agreement will expand the boundaries of the PJM Control Area Region, such evaluation to be conducted in accordance with the requirements of the Reliability Assurance Agreement; and

(b) Evaluate the effects of the withdrawal or removal of a party from the Reliability Assurance Agreement.

#### 3. IMPLEMENTATION OF RELIABILITY ASSURANCE AGREEMENT

With regard to the implementation of the provisions of the Reliability Assurance Agreement, the Office of the Interconnection shall:

(a) Receive all required data and forecasts from the parties to the Reliability Assurance Agreement and other owners or providers of Capacity Resources;

(b) Perform all calculations and analyses necessary to determine the Forecast Pool Requirement and the capacity obligations imposed under the Reliability Assurance Agreement, including periodic reviews of the capacity benefit margin for consistency with the Reliability Principles and Standards, as the foregoing terms are defined in the Reliability Assurance Agreement;

(c) Monitor the compliance of each party to the Reliability Assurance Agreement with its obligations under the Reliability Assurance Agreement;

(d) Keep cost records, and bill and collect any costs or charges due from the parties to the Reliability Assurance Agreement and distribute those charges in accordance with the terms of the Reliability Assurance Agreement;

(e) Assist with the development of rules and procedures for determining and demonstrating the capability of Capacity Resources;

(f) Establish the capability and deliverability of Capacity Resources consistent with the requirements of the Reliability Assurance Agreement;

(g) Collect and maintain generator availability data;

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(h) Perform any other forecasts, studies or analyses required to administer the Reliability Assurance Agreement;

(i) Coordinate maintenance schedules for generation resources operated as part of the PJM Control Area Region;

(j) Determine and declare that an Emergency exists or has ceased to exist in all or any part of the PJM Control Area Region or announce that an Emergency exists or ceases to exist in a Control Area interconnected with the PJM Control Area Region;

(k) Enter into agreements for (i) the transfer of energy in Emergencies in the PJM Control Area Region or in a Control Area interconnected with the PJM Control Area Region and (ii) mutual support in such Emergencies with other Control Areas interconnected with the PJM Control Area Region; and

(l) Coordinate the curtailment or shedding of load, or other measures appropriate to alleviate an Emergency, to preserve reliability in accordance with FERC, NERC or MAAC Applicable Regional Reliability Council principles, guidelines, standards and requirements and the PJM Manuals, and to ensure the operation of the PJM Control Area Region in accordance with Good Utility Practice.

**[Sheet Nos. 193 – 196 Reserved for Future Use]**  
**SCHEDULE 8A**

**DELEGATION OF PJM WEST REGION RELIABILITY RESPONSIBILITIES**

**1. DELEGATION**

The following responsibilities shall be delegated to the Office of the Interconnection by the parties to the Reliability Assurance Agreement–West.

**2. NEW PARTIES**

With regard to the addition, withdrawal or removal of a party to the Reliability Assurance Agreement–West, the Office of the Interconnection shall:

- (a) Receive and evaluate the information submitted by entities that plan to serve loads within the PJM West Region, including entities whose participation in the Agreement will expand the boundaries of the PJM Region, such evaluation to be conducted in accordance with the requirements of the Reliability Assurance Agreement–West; and
- (b) Evaluate the effects of the withdrawal or removal of a party from the Reliability Assurance Agreement–West.

**3. IMPLEMENTATION OF RELIABILITY ASSURANCE AGREEMENT–WEST**

With regard to the implementation of the provisions of the Reliability Assurance Agreement–West, the Office of the Interconnection shall:

- (a) Receive all required data and forecasts from the parties to the Reliability Assurance Agreement–West and other owners of Capacity Resources;
- (b) Perform all calculations and analyses necessary to determine the capacity obligations imposed under the Reliability Assurance Agreement–West;
- (c) Monitor the compliance of each party to the Reliability Assurance Agreement–West with its obligations under the Reliability Assurance Agreement–West;
- (d) Keep cost records, and bill and collect any costs or charges due from the parties to the Reliability Assurance Agreement–West and distribute those charges in accordance with the terms of the Reliability Assurance Agreement–West;
- (e) Assist with the development of rules and procedures for determining and demonstrating the capability of Capacity Resources;
- (f) Establish the capability and deliverability of Capacity Resources consistent with the requirements of the Reliability Assurance Agreement–West;
- (g) Collect and maintain generator availability data;
- (h) Perform any other forecasts, studies or analyses required to administer the Reliability Assurance Agreement–West;



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(i) Coordinate maintenance schedules for generation resources operated as part of the PJM West Region;

(j) Determine and declare that an Emergency exists or has ceased to exist in all or any part of the PJM West Region or announce that an Emergency exists or ceases to exist in a Control Area interconnected with the PJM West Region;

(k) Enter into agreements for (i) the transfer of energy in Emergencies in the PJM Region or in a Control Area interconnected with the PJM Region and (ii) mutual support in such Emergencies with other Control Areas interconnected with the PJM Region; and

(l) Coordinate the curtailment or shedding of load, or other measures appropriate to alleviate an Emergency, to preserve reliability in accordance with FERC, NERC or ECAR principles, guidelines, standards and requirements and the PJM Manuals, and to ensure the operation of the PJM West Region in accordance with Good Utility Practice.

## SCHEDULE 8B

### DELEGATION OF PJM SOUTH REGION RELIABILITY RESPONSIBILITIES

#### 1. ~~DELEGATION~~

The following responsibilities shall be delegated to the Office of the Interconnection by the parties to the Reliability Assurance-Agreement-South:

#### 2. ~~NEW PARTIES~~

With regard to the addition, withdrawal or removal of a party to the Reliability Assurance Agreement-South, the Office of the Interconnection shall:

(a) Receive and evaluate the information submitted by entities that plan to serve loads within the PJM South Region, including entities whose participation in the Agreement will expand the boundaries of the PJM South Region; such evaluation to be conducted in accordance with the requirements of the Reliability Assurance Agreement-South; and

(b) Evaluate the effects of the withdrawal or removal of a party from the Reliability Assurance Agreement-South.

#### 3. ~~IMPLEMENTATION OF RELIABILITY ASSURANCE AGREEMENT-SOUTH~~

With regard to the implementation of the provisions of the Reliability Assurance Agreement-South, the Office of the Interconnection shall:

(a) Receive all required data and forecasts from the parties to the Reliability Assurance Agreement-South and other owners of Capacity Resources;

(b) Perform all calculations and analyses necessary to determine the Forecast Pool Requirement and the capacity obligations imposed under the Reliability Assurance Agreement-South, including periodic reviews of the capacity benefit margin for consistency with the Reliability Principles and Standards, as the foregoing terms are defined in the Reliability Assurance Agreement-South;

(c) Monitor the compliance of each party to the Reliability Assurance Agreement-South with its obligations under the Reliability Assurance Agreement-South;

(d) Keep cost records, and bill and collect any costs or charges due from the parties to the Reliability Assurance Agreement-South and distribute those charges in accordance with the terms of the Reliability Assurance Agreement-South;

(e) ~~Assist with the development of rules and procedures for determining and demonstrating the capability of Capacity Resources;~~

(f) ~~Establish the capability and deliverability of Capacity Resources consistent with the requirements of the Reliability Assurance Agreement-South;~~

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- (g) collect and maintain generator availability data;
- (h) Perform any other forecasts, studies or analyses required to administer the Reliability Assurance Agreement-South;
- (i) Coordinate maintenance schedules for generation resources operated as part of the PJM South Region;
- (j) Determine and declare that an Emergency exists or has ceased to exist in all or any part of the PJM South Region or announce that an Emergency exists or ceases to exist in a Control Area interconnected with the PJM South Region;
- (k) Enter into agreements for (i) the transfer of energy in Emergencies in the PJM South Region or in a Control Area interconnected with the PJM South Region and (ii) mutual support in such Emergencies with other Control Areas interconnected with the PJM South Region; and
- (l) Coordinate the curtailment or shedding of load, or other measures appropriate to alleviate an Emergency, to preserve reliability in accordance with FERC, NERC or SERC principles, guidelines, standards and requirements and the PJM Manuals, and to ensure the operation of the PJM South Region in accordance with Good Utility Practice.

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## SCHEDULE 9

### PJM CONTROL AREA EMERGENCY PROCEDURE CHARGES

#### 1. EMERGENCY PROCEDURE CHARGE

1.1 Following an Emergency, the compliance of each Member with the instructions of the Office of the Interconnection shall be evaluated by the Office of the Interconnection. If, based on such evaluation, it is determined that a Member failed to comply with the instructions of the Office of the Interconnection to implement PJM emergency procedures, that Member shall demonstrate that it employed its best efforts to comply with such instructions. In the event a Member failed to employ its best efforts to comply with the instructions of the Office of the Interconnection, that Member shall pay (unless otherwise paid by the Member under the Reliability Assurance Agreement an emergency procedure charge as follows:

(a) For each megawatt of voltage reduction that was not implemented as directed, despite being capable of implementation, the Member shall pay 365 times the daily deficiency rate per megawatt set forth in Section A of Schedule 11 of the Reliability Assurance Agreement;

(b) For each megawatt of load that was not dropped as directed, the Member shall pay 730 times the daily deficiency rate per megawatt set forth in Section A of Schedule 11 of the Reliability Assurance Agreement; and

(c) For each megawatt of ALM (as defined in the Reliability Assurance Agreement) that was not implemented as directed and for each megawatt of a Capacity Resource that was not made available as directed despite being capable of producing energy at the time, and that is deliverable to the PJM Control Area in the case of a Capacity Resource located outside of the PJM Control Area, the Party shall pay 365 times the daily deficiency rate per megawatt set forth in Section A of Schedule 11 of the Reliability Assurance Agreement.

#### 2. DISTRIBUTION OF EMERGENCY PROCEDURE CHARGES

##### 2.1 Complying Parties.

Each Member that has complied with the emergency procedures imposed by this Agreement during an Emergency, without incurring an emergency procedure charge, shall share in any emergency procedure charges paid by any other Member that has failed to satisfy said obligation during such Emergency in an equitable manner to be determined by the PJM Board.

##### ~~2.2 All Parties.~~

~~In the event all of the Members have incurred emergency procedure charges with respect to an Emergency, the emergency procedure charges related to that Emergency shall be distributed in an equitable manner as directed by the PJM Board.~~

## SCHEDULE 9A

### PJM WEST REGION EMERGENCY PROCEDURE CHARGES

#### 1. EMERGENCY PROCEDURE CHARGE

1.1 Following an Emergency, the compliance of each Member with the instructions of the Office of the Interconnection shall be evaluated by the Office of the Interconnection. If, based on such evaluation, it is determined that a Member failed to comply with the instructions of the Office of the Interconnection to implement PJM emergency procedures, that Member shall demonstrate that it employed its best efforts to comply with such instructions. In the event a Member failed to employ its best efforts to comply with the instructions of the Office of the Interconnection, that Member shall pay (unless otherwise paid by the Member under the Reliability Assurance Agreement-West) an emergency procedure charge as follows:

(a) For each megawatt of voltage reduction that was not implemented as directed, despite being capable of implementation, the Member shall pay 365 times the daily deficiency rate per megawatt set forth in Section A of Schedule 11 of the Reliability Assurance Agreement-West;

(b) For each megawatt of load that was not dropped as directed, the Member shall pay 730 times the daily deficiency rate per megawatt set forth in Section A of Schedule 11 of the Reliability Assurance Agreement-West; and

(c) For each megawatt of ALM (as defined in the Reliability Assurance Agreement-West) that was not interrupted as directed and for each megawatt of a Capacity Resource that was not made available as directed despite being capable of producing energy at the time, and that is deliverable to the PJM West Region in the case of a Capacity Resource located outside of the PJM West Region, the Party shall pay 365 times the daily deficiency rate per megawatt set forth in Section A of Schedule 11 of the Reliability Assurance Agreement-West.

#### 2. DISTRIBUTION OF EMERGENCY PROCEDURE CHARGES

##### 2.1 Complying Parties.

Each Member that has complied with the emergency procedures imposed by this Agreement during an Emergency, without incurring an emergency procedure charge, shall share in any emergency procedure charges paid by any other Member that has failed to satisfy said obligation during such Emergency in an equitable manner to be determined by the PJM Board.

##### ~~2.2 All Parties.~~

~~In the event all of the Members have incurred emergency procedure charges with respect to an Emergency, the emergency procedure charges related to that Emergency shall be distributed in an equitable manner as directed by the PJM Board.~~

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SCHEDULE 11

PJM CAPACITY CREDIT MARKETS IN PJM REGION

**1. PURPOSES AND OBJECTIVES**

**1.1 PJM Capacity Credit Markets in PJM Region.**

This Schedule sets forth the procedures applicable to the operation of the PJM Capacity Credit Markets in the PJM Region. The PJM Capacity Credit Markets will allow Market Participants to buy and sell Capacity Credits at market clearing prices that are established by the PJM Capacity Credit Markets and made public by the Office of the Interconnection. The PJM Capacity Credit Markets shall be administered by the Office of Interconnection in accordance with the principles and procedures specified in this Schedule.

**1.2 [Reserved.]**

**1.3 Use of Capacity Credits.**

An entity may use Capacity Credits to meet all or part of its capacity obligations imposed under the Reliability Assurance Agreement, or Reliability Assurance Agreement-West, or Reliability Assurance Agreement-South. Such Capacity Credits may be used by themselves, or along with any other options for meeting capacity obligations imposed under the Reliability Assurance Agreement, Reliability Assurance Agreement-West, or Reliability Assurance Agreement-South.

**2. DEFINITIONS**

Unless the context otherwise specifies or requires, capitalized terms used in this Schedule shall have the respective meanings assigned herein or in the Agreement for all purposes of this Schedule (such definitions to be equally applicable to both the singular and the plural forms of the terms defined).

**2.1 Buy Bid.**

"Buy Bid" shall mean a bid to buy Capacity Credits in a PJM Capacity Credit Market.

**2.2 Capacity Credit.**

"Capacity Credit" shall mean an entitlement to a specified number of megawatts of Unforced Capacity from a Capacity Resource for the purpose of satisfying capacity obligations imposed under the Reliability Assurance Agreement, Reliability Assurance Agreement-West, or Reliability Assurance Agreement-South, such entitlement not to include any entitlement to the output of the Capacity Resource. Solely for purposes of the PJM Installed Capacity Credit Markets, the term Capacity Credit also shall refer to credits for Installed Capacity during the Interim Period for the ComEd Zone.

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**2.2A ComEd Zone.**

"ComEd Zone" shall have the meaning specified in Schedule 17 of the Reliability Assurance Agreement-West.

**2.3 Capacity Resources.**

"Capacity Resources" shall have the meaning specified in the Reliability Assurance Agreement, Reliability Assurance Agreement-West, or Reliability Assurance Agreement-South.

**2.4 Holiday.**

"Holiday" shall mean a federal or state holiday designated by the Office of the Interconnection for recognition in the conduct of PJM Daily Capacity Credit Markets.

**2.4A Installed Capacity.**

"Installed Capacity" shall have the meaning specified in Schedule 17 of the Reliability Assurance Agreement-West.

**2.4B Interim Period.**

"Interim Period" shall have the meaning specified in Schedule 17 of the Reliability Assurance Agreement-West.

**2.5 PJM Capacity Credit Market.**

"PJM Capacity Credit Market" shall mean the PJM-Daily Capacity Credit Market and the PJM Monthly Capacity Credit Market.

## **2.6 PJM Daily Capacity Credit Market.**

"PJM Daily Capacity Credit Market" shall mean a competitive market, administered by the Office of the Interconnection in accordance with the provisions of this Schedule, for the purchase and sale of Capacity Credits for the business day following the day on which the market is conducted or for an intervening weekend day or Holiday.

## **2.6A PJM Installed Capacity Credit Market.**

"PJM Installed Capacity Credit Market" shall mean a competitive market, administered by the Office of the Interconnection in accordance with the provisions of this Schedule, for the purchase and sale of credits for Installed Capacity for the Interim Period, or any month thereof, in the ComEd Zone.

## **2.7 PJM Monthly Capacity Credit Market.**

"PJM Monthly Capacity Credit Market" shall mean a competitive market, administered by the Office of the Interconnection in accordance with the provisions of this Schedule, for the purchase and sale of Capacity Credits for each or any of the twelve months following the month during which the market is conducted. Solely for purposes of the ComEd Zone during the Interim Period, PJM Monthly Capacity Credit Markets also shall refer to separate monthly PJM Installed Capacity Credit Markets.

## **2.8 Sell Offer.**

"Sell Offer" shall mean an offer to sell Capacity Credits in a PJM Capacity Credit Market.

## **2.9 Unforced Capacity.**

"Unforced Capacity" shall have the meaning specified in the Reliability Assurance Agreement, Reliability Assurance Agreement-West, and Reliability Assurance Agreement-South.

## **2.10 Up-To Block.**

"Up-To Block" shall mean a Sell Offer or Buy Bid for a quantity of Capacity Credits equal to or less than a specified quantity.

# **3. PARTICIPATION IN THE PJM CAPACITY CREDIT MARKET**

## **3.1 Eligibility.**

A Member shall become eligible to participate in any of the PJM Capacity Credit Markets by becoming a Market Buyer or a Market Seller, or both as may be appropriate, in accordance with the provisions of Schedule 1 of the Agreement. In order to participate in any of the PJM Capacity Credit Markets, a Market Buyer also either must be (a) an entity that is or will become a Load Serving Entity in the PJM Region and a party to the Reliability Assurance Agreement, Reliability Assurance Agreement-West, or Reliability Assurance Agreement-South, respectively, or (b) have a contractual obligation to sell capacity (including sales for resale) which will be used in the PJM Region. A Market Seller may participate in any PJM Capacity Credit Market only to the extent that it has Capacity Credits available to sell in excess of its capacity obligation imposed under the Reliability Assurance Agreement, Reliability Assurance Agreement-West, or Reliability Assurance Agreement-South and other contractual obligations to sell capacity (including sales for resale), as determined in accordance with Section 6.1.3.



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### **3.2 Effect of Withdrawal.**

Withdrawal from the Agreement shall not relieve a Market Participant of any obligation to furnish or pay for Capacity Credits incurred in connection with participation in a PJM Capacity Credit Market prior to such withdrawal, to pay its share of any fees and charges incurred or assessed by the Office of the Interconnection prior to the date of such withdrawal, or to fulfill any obligation to provide indemnification for the consequences of acts, omissions or events occurring prior to such withdrawal; and provided, further, that withdrawal from this

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Agreement shall not relieve any Market Participant of any obligations it may have under, or constitute withdrawal from, any Related PJM Agreement.

#### **4. RESPONSIBILITIES OF THE OFFICE OF THE INTERCONNECTION**

##### **4.1 Operation of the PJM Capacity Credit Market.**

The Office of the Interconnection shall operate the PJM Capacity Credit Markets in accordance with the provisions of this Schedule and applicable provisions of the Agreement, the Reliability Assurance Agreement, and the Reliability Assurance Agreement-West. Operation of the PJM Capacity Credit Markets shall include, but not be limited to, provision of the following services:

- i) Determining the qualification of entities to become Market Participants;
- ii) Administering the PJM Capacity Credit Markets;
- iii) Accounting for PJM Capacity Credit Market transactions, including but not limited to rendering bills to, receiving payments from, and disbursing payments to, participants in the PJM Capacity Credit Markets;
- iv) Maintaining such records of Sell Offers and Buy Bids, clearing price determinations, and other aspects of PJM Capacity Credit Market transactions, as may be appropriate to the administration of the PJM Capacity Credit Markets; and
- v) Monitoring compliance of participants in the PJM Capacity Credit Markets with the provisions of this Schedule and the Agreement.

##### **4.2 Records and Reports.**

The Office of the Interconnection shall prepare and maintain such records as are required for the administration of the PJM Capacity Credit Markets. For each day of operation of the PJM Capacity Credit Markets, the Office of the Interconnection shall publish, as specified below: (i) the price, if determined, at which the PJM Capacity Credit Market cleared; (ii) the total volume of Capacity Credits purchased; and (iii) such other PJM Capacity Credit Market data as may be appropriate to the efficient and competitive operation of the PJM Capacity Credit Markets, consistent with preservation of the confidentiality of commercially sensitive or proprietary information. Publication of the foregoing information shall be by posting on the PJM web site. Such information shall remain available on the PJM web site for twelve months from the date of posting. The Office of the Interconnection shall not disclose commercially sensitive or proprietary information in any report or web site posting.

#### **5. GENERAL PROVISIONS**

##### **5.1 — Market Sellers.**

Only Market Sellers shall be eligible to submit Sell Offers. Market Sellers shall comply with the terms and conditions of all Sell Offers, as established by the Office of the Interconnection in accordance with this Schedule and the Agreement.

##### **5.2 — Market Buyers.**

Only Market Buyers shall be eligible to submit Buy Bids. Market Buyers shall comply with the terms and conditions of all Buy Bids, as established by the Office of the Interconnection in accordance with this Schedule and the Agreement.

### **5.3 Agents.**

A Market Participant may participate in the PJM Capacity Credit Markets through an agent, provided that the Market Participant informs the Office of the Interconnection in advance in writing of the appointment of such agent. A Market Participant participating in the PJM Capacity Credit Markets through an agent shall be bound by all of the acts or representations of such agent with respect to transactions in the PJM Capacity Credit Markets, and shall ensure that any such agent complies with the requirements of this Schedule and the Agreement.

### **5.4 General Obligations of Market Participants.**

Each Market Participant shall comply with all laws and regulations applicable to the operation of the PJM Capacity Credit Markets and the use of Capacity Credits, and shall comply with all applicable provisions of this Schedule, the Agreement, and the Reliability Assurance Agreement, the Reliability Assurance Agreement-West, and all procedures and requirements for the operation of the PJM Capacity Credit Markets and the PJM Region established by the Office of the Interconnection in accordance with the foregoing.

### **5.5 Relationship of Capacity Credits to Capacity Obligations Imposed under the Reliability Assurance Agreement, Reliability Assurance Agreement-West, or Reliability Assurance Agreement-South.**

A megawatt of Capacity Credit shall satisfy a megawatt of capacity obligation imposed under the Reliability Assurance Agreement or Reliability Assurance Agreement-West. Capacity Credits purchased from a PJM Capacity Credit Market shall not be adjusted for forced outages or other reasons. Because Capacity Credits are based on Capacity Resources, no further capability or deliverability demonstrations beyond those for the related Capacity Resource shall be required.

### **5.6 Deficiency Charges.**

If the Office of the Interconnection determines that the first Market Seller in a PJM Capacity Credit Market of a Capacity Credit did not have sufficient Unforced Capacity (or Installed Capacity, in the case of the ComEd Zone during the Interim Period) to support the Capacity Credit transaction at the time for which the Capacity Credit was applicable, any such deficiency shall be satisfied through payment of deficiency charges by such first Market Seller calculated as specified in the Reliability Assurance Agreement, Reliability Assurance Agreement-West, and Reliability Assurance Agreement-South. Any amounts collected from such deficiency charges shall be distributed in accordance with the Reliability Assurance Agreement, Reliability Assurance Agreement-West, and Reliability Assurance Agreement-South.

### **5.7 Financial Transmission Rights.**

~~Acquisition of a Capacity Credit shall not entitle the holder to a Financial Transmission Right.~~

### **5.8 Confidentiality.**

~~The following information submitted to the Office of the Interconnection in connection with any PJM Capacity Credit Market shall be deemed confidential information for purposes of Section 18.17 of the Agreement: (i) the terms and conditions of all Sell Offers and Buy Bids; and (ii) the terms and conditions of any bilateral transactions for capacity or Capacity Credits.~~

## 6. OPERATION OF THE PJM CAPACITY CREDIT MARKETS

### 6.1 Content of Sell Offers.

#### 6.1.1 Specifications.

Sell Offers shall specify:

- i) The quantity of Capacity Credits offered, in increments of 0.1 megawatt;
- ii) The minimum price, in dollars and cents per megawatt per day, that will be accepted by the seller;
- iii) For a PJM Daily Capacity Credit Market conducted on a Friday or the day before a Holiday, the dates on which the offered Capacity Credits may be used; and
- iv) For a PJM Monthly Capacity Credit Market, the month or months for which the offered Capacity Credits may be used.

#### 6.1.2 Market-based Offers.

A Market Seller that is authorized by FERC to sell electric generating capacity at market-based prices, or that is not required to have such authorization, may submit Sell Offers to PJM Capacity Credit Markets that specify market-based prices.

#### 6.1.3 Availability of Capacity Credits for Sale.

- i) The Office of the Interconnection shall determine the maximum megawatts of Capacity Credits each Market Seller may offer in a PJM Capacity Credit Market, through verification of the availability of megawatts of capacity from: (a) Capacity Resources owned by or under contract to the Market Seller; (b) rights obtained in bilateral transactions; (c) the results of prior PJM Capacity Credit Markets; and (d) such other information as may be available to the Office of the Interconnection. The Office of the Interconnection may reject Sell Offers or portions of Sell Offers for Capacity Credits determined by it not to be available for sale.
- ii) The Office of the Interconnection shall determine the maximum amount of Capacity Credits available for sale in a PJM Capacity Credit Market as of the beginning of the period during which Buy Bids and Sell Offers are accepted for each market. To enable the Office of the Interconnection to make this determination, no bilateral transactions for capacity or Capacity Credits applicable to the period covered by a PJM Capacity Credit Market will be processed from the beginning of the period for submission of Sell Offers and Buy Bids for that market until completion of the clearing determination for that market. Processing of such bilateral transactions will recommence once all sales for that market are deemed final as specified below.

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- iii) In order for a bilateral transaction for the purchase and sale of a Capacity Credit to be processed by the Office of the Interconnection, both parties to the transaction must notify the Office of the Interconnection of the transfer

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of the Capacity Credit from the seller to the buyer in accordance with procedures established by the Office of the Interconnection.

## 6.2 Content of Buy Bids.

Buy Bids shall specify:

- i) The quantity of Capacity Credits desired, in increments of 0.1 megawatt;
- ii) The maximum price, in dollars and cents per megawatt per day, that will be paid by the buyer;
- iii) For a PJM Daily Capacity Credit Market conducted on a Friday or the day before a Holiday, the dates for which Capacity Credits are desired; and
- iv) For a PJM Monthly Capacity Credit Market, the month or months for which Capacity Credits are desired.

## 6.3 Submission of Sell Offers and Buy Bids.

The submission of Sell Offers and Buy Bids shall be subject to the following requirements:

- i) A Sell Offer or Buy Bid that fails to specify price or quantity, or the date or months for which Capacity Credits are to be used if applicable, shall be rejected by the Office of the Interconnection.
- ii) All Sell Offers and Buy Bids are for an Up-To Block.
- iii) All Sell Offers and Buy Bids for a PJM Daily Capacity Market must be received by the Office of the Interconnection during a specified period, as determined by the Office of the Interconnection. A Sell Offer or Buy Bid may be withdrawn by a notification of withdrawal received by the Office of the Interconnection at any time during the foregoing period, but may not be withdrawn after that period.
- iv) Sell Offers or Buy Bids for a PJM Daily Capacity Credit Market conducted on a Monday, Tuesday, Wednesday, or Thursday that is not the day before a Holiday shall be for capacity credits applicable to the following day.
- v) Sell Offers or Buy Bids for a PJM Daily Capacity Credit Market conducted on a Friday or the day before a Holiday shall designate the date, to and including the next business day, to which the Capacity Credits are applicable. A separate PJM Daily Capacity Credit Market shall be conducted on such Friday or day before a Holiday for Capacity Credits applicable to each following day, to and including the next business day.
- vi) Sell Offers and Buy Bids for a PJM Monthly Capacity Credit Market must be received by the Office of the Interconnection during a specified period, as determined by the Office of the Interconnection for the conduct of a PJM Monthly Capacity Credit Market. A Sell Offer or Buy Bid may be withdrawn by a notification of withdrawal received by the Office of the Interconnection at any time during the foregoing period, but may not be withdrawn after that period.

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- vii) Sell Offers and Buy Bids shall be submitted or withdrawn via the Internet site designated by the Office of the Interconnection; provided, however, that if that Internet site cannot be accessed at any time during the period specified in the foregoing paragraph, a Sell Offer or Buy Bid may be submitted or withdrawn by a facsimile transmitted to the number specified by the Office of the Interconnection.

**6.4 Conduct of PJM Capacity Credit Markets.**

**6.4.1 PJM Daily Capacity Credit Markets.**

Each business day, following the submission of Sell Offers and Buy Bids in accordance with the specified deadline for PJM Daily Capacity Credit Markets, a PJM Daily Capacity Credit Market(s)

will be conducted. A PJM Daily Capacity Credit Market will clear Sell Offers and Buy Bids for Capacity Credits for use the next business day, and on Fridays or the day before a Holiday, a separate Daily Capacity Credit Market(s) for each intervening weekend day or Holiday shall clear Sell Offers and Buy Bids for Capacity Credits for such days..

#### **6.4.2 PJM Monthly Capacity Credit Markets.**

Following the submission of Sell Offers and Buy Bids in accordance with the specified deadline for PJM Monthly Capacity Credit Markets, a PJM Monthly Capacity Credit Market will be conducted. Each such PJM Monthly Capacity Credit Market will clear Sell Offers and Buy Bids for Capacity Credits for use in each of the following twelve months.

#### **6.5 Market Clearing Procedures.**

- i) For purposes of the rank ordering and market clearing procedures described below, the Office of the Interconnection will: (a) evaluate all Sell Offers for an Up-To Block at the same price as one Sell Offer for an Up-to Block, with the quantity equal to the total quantity of the equally-priced Sell Offers; and (b) evaluate all Buy Bids for an Up-To Block at the same price as one Buy Bid for an Up-to Block, with the quantity equal to the total quantity of the equally-priced Buy Bids.
- ii) The Office of the Interconnection will rank order all Sell Offers and Buy Bids by price. Sell Offers will be ranked by lowest price first and then ranked in ascending price order. Buy Bids will be ranked by highest price first and then ranked in descending price order. In the event that a Market Participant enters one or more Buy Bids with a price higher than the lowest offer price of that Market Participant's Sell Offers, then all of the Market Participant's Buy Bids priced higher than its lowest priced Sell Offer shall be rejected.
- iii) The Office of the Interconnection will determine the largest quantity of Sell Offers and Buy Bids for which the price of the marginal Sell Offer is equal to or less than the price of the marginal Buy Bid. The market will clear at price specified in the marginal Sell Offer.
- iv) If a marginal Sell Offer or Buy Bid is a combination of Sell Offers or Buy Bids deemed to be a single Sell Offer or Buy Bid for an Up-To Block as specified above, the quantity purchased or sold will be allocated among the combined Sell Offers or Buy Bids in proportion to the quantities offered in each of the combined Sell Offers or Buy Bids.
- v) If all Sell Offers remaining in the rank order are at prices higher than the highest price of any Buy Bid remaining in the rank order, the market will be cleared with no transactions, and a market clearing price will not be determined.

#### **6.6 Settlement Procedures.**

Upon determination of the market clearing price as specified above: (a) all Sell Offers at a price equal to or less than the market clearing price and not removed from the rank ordering and for which there is sufficient Buy Bid demand at or above the market clearing price will be deemed sold at the market clearing price, and all Buy Bids at a price equal to or greater than the market clearing price and not removed from the rank ordering and for which there is sufficient Sell Offer supply at or below the market clearing price will be deemed satisfied at the market clearing price, with any Up-To Blocks split and pro-rated as may be appropriate; and (b) the



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accounts of Market Sellers and Market Buyers will be credited or debited accordingly. The foregoing determinations shall be made, and all sales and purchases shall be deemed final, as of specified times, as designated by the Office of the Interconnection, on the day on which each PJM Capacity Market is conducted.

**6.7 Billing.**

The Office of the Interconnection shall prepare a billing statement for each Market Participant in accordance with the charges and credits specified in this Schedule, and showing the net amount to be paid or received by each Market Participant. Billing statements for PJM Daily Capacity Markets shall be rendered following the end of each month for Capacity Credits bought and sold in the month just ended. Billing statements for PJM Monthly Capacity Credit Markets shall be rendered following the end of the month for which the Capacity Credit applies. Billing statements shall provide sufficient detail, as specified in the PJM Manuals, to allow verification of the billing amounts and completion of the Market Participant's internal accounting. Payment of statements shall be made in accordance with the Agreement.

**6.8 Time Standard.**

All deadlines for the submission or withdrawal of Sell Offers or Buy Bids, or for other purposes specified in this Schedule, shall be determined by the time observed in the Eastern time zone.

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

**Tab 3**  
**Proposed Letter Order**

**PROPOSED LETTER ORDER**

**FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426**

**In Reply Refer To:  
Docket Nos. ER05-1410-000 and -001  
and EL05-148-000 and -001**

Barry S. Spector  
Paul M. Flynn  
Wright & Talisman, P.C.  
1200 G Street, N.W.  
Suite 600  
Washington, D.C. 20005

Dear Mr. Spector and Mr. Flynn:

1. On September 29, 2006, on behalf of the Settling Parties in Docket Nos. ER05-1410-000 and -001, and EL05-148-000 and -001, you filed a settlement agreement, which included revisions to the PJM Open Access Transmission Tariff ("PJM Tariff"), Operating Agreement, and Reliability Assurance Agreement ("RAA"), which resolves all of the issues in such dockets. Comments in this proceeding were filed by \_\_\_\_ on October 19, 2006. Reply comments were filed by \_\_\_\_ on November 20, 2006.

2. The settlement agreement is in the public interest and is hereby accepted. The Commission's acceptance of the settlement agreement does not constitute approval of, or precedent regarding, any principle or issue in this proceeding. The Commission retains the right to investigate the rates, terms and conditions under the just and reasonable and not unduly discriminatory or preferential standard of Section 206 of the Federal Power Act, 16 U.S.C. § 824c.

3. The rate schedule designations are in compliance with Designation of Electric Rate Schedule Sheets, Order No. 614 (FERC Statutes and Regulations, Regulations Preambles July 1996-December 2000 ¶ 31,096 (2000)) and are accepted for filing as designated and made effective on June 1, 2007. The Commission grants waiver of section 35.3(a) of its regulations to permit such effective date.

By direction of the Commission.

Secretary

Enclosure

cc: To All Parties

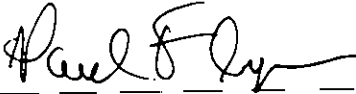
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**ER05-1410**  
**September 29, 2006**

**Tab 4**  
**Certificate of Service**

### CERTIFICATE OF SERVICE

I hereby certify that pursuant to Rules 602(d) and 2010 (18 C.F.R. §§ 385.602(d) & 2010), I have served, either by paper or electronic service, the foregoing documents 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.

Dated at Washington, D.C., this 29<sup>th</sup> day of September 2006.

  
Paul M. Flynn