

## **Rate Schedule 1**

### **Market Administration and Control Area Services Charge**

#### **1. Parties to Which Charges Apply**

The ISO shall charge and each Customer taking service under the ISO Services Tariff shall pay the Market Administration and Control Area Services charge on all services provided under the Tariff. Each Market Participant that sells or purchases Energy, including Demand Side Resources, sells or purchases Capacity, or provides Ancillary Services in the ISO Administered Markets utilizes Market Services and must enter into a Service Agreement under the Tariff, as set forth in Attachment A; and each entity that withdraws Energy to supply Load within the NYCA or provides Installed Capacity to an LSE serving Load within the NYCA utilizes the Control Area Services provided by the ISO and benefits from the reliability achieved as a result of ISO Control Area Services, and must enter into a Service Agreement under this Tariff, as set forth in Attachment A.

#### **2. Billing**

The ISO shall charge each Customer based on the product of: (i) the Market Administration and Control Area Services charge rate; and (ii) the Customer's billing units for the month. The billing units will be based on the Actual Energy Withdrawals for all Transactions to supply Load in the NYCA and all other purchases from the LBMP Markets to supply Load

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outside the NYCA.

### **3. Computation of Rate**

The Market Administration and Control Area Services charge shall be computed on a monthly basis based on information available from the prior month. The charge shall equal the quotient of the ISO's monthly costs and expenses that are charged to the ISO Services Tariff divided by the total amount of Actual Energy Withdrawals to supply Load in the NYCA and all other purchases from the LBMP Markets to supply Load outside the NYCA, adjusted for revenues related to Installed Capacity deficiency penalties.

### **4. ISO Costs**

ISO costs to be recovered through this charge shall include costs incurred by the ISO that are directly assignable to the services provided by the ISO under the Tariff and are not recoverable under Rate Schedule 1 of the ISO OATT. Costs recoverable under this charge shall include costs related to: the ISO's administration of the LBMP Markets; the ISO's administration of Installed Capacity requirements and an Installed Capacity Market; the ISO's administration of Control Area Services, other than Ancillary Services provided under the ISO OATT; the ISO's administration of the Market Power Monitoring Program; other activities related to the maintenance of reliability in the NYCA; and costs related to any indemnification of or by the ISO pursuant to Section 12.4 of this Tariff.

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In addition, fifty percent of the costs associated with the start-up and formation of the ISO, plus interest, is also recoverable under this charge. Such costs will equal \$27.45 million, plus interest, less one-half of the start-up costs already collected by the ISO under the ISO OATT . These costs will be amortized over a period from September 1, 2000 through December 31, 2004.

Where costs or expenses or receipts are incurred on a basis other than a monthly basis, the ISO shall use reasonable judgment consistent with commonly accepted accounting practices to develop the monthly components.

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## **Rate Schedule 2**

### **Payments for Supplying Voltage Support Service**

This rate schedule applies to payments to Suppliers who provide Voltage Support Service to the ISO. Transmission Customers will purchase Voltage Support Service from the ISO under the ISO OATT.

The embedded cost calculation methodology provided in this rate schedule shall be used to calculate payments to all eligible Suppliers providing Voltage Support Service as applied on a resource-specific basis. The ISO shall calculate and make payments monthly.

#### **1.0 Responsibilities**

The ISO shall coordinate the Voltage Support Service provided by Suppliers that qualify to provide such services as described in Section 1. 1 of this Rate Schedule. The ISO shall also establish methods and procedures for Reactive Power (MVar) capability testing.

#### **1.1 Suppliers**

To qualify for payments, Suppliers of Voltage Support Service shall provide a resource that has an AVR and has successfully performed Reactive Power (MVar) capability testing in

accordance with the ISO procedures and prevailing industry standards. The ISO may direct Suppliers to operate their resources within these demonstrated reactive capability limits. Suppliers of Voltage Support Service will test their resources and provide these services in accordance with ISO Procedures.

Voltage Support Service includes the ability to produce or absorb Reactive Power within the resource's tested reactive capability, and the ability to maintain a specific voltage level under both steady-state and post-contingency operating conditions subject to the limitations of the resource's stated reactive capability.

## **2.0 Payments**

Suppliers whose resource(s) meet the requirements to supply Installed Capacity, as described in Article 5 of the ISO Services Tariff, and are under contract to supply Installed Capacity shall receive one-twelfth the annual embedded cost payment for Voltage Support Service except as noted below with respect to Non-Utility Generators. To the extent Suppliers of Installed Capacity are electrically located outside the NYCA, payments for Voltage Support Service will be subject to criteria established by the ISO.

Suppliers whose Generators are not under contract to supply Installed Capacity and Suppliers with synchronous condensers shall receive one-twelfth the annual embedded cost payment pro-rated by the number of hours that Generator or synchronous condenser operated in

that month, as recorded by the ISO.

For Non-Utility Generators that are operating under existing power purchase agreements, the entity that is purchasing Energy and/or Capacity under such agreement or providing Transmission Service under that agreement shall be contacted by the ISO when the ISO requires Voltage Support Service from the contracted Resource. The ISO shall pay holders of the contracts for such resources, which are operating under existing power purchase agreements, the product of the average \$/MVA<sub>r</sub> rate for the ISO and the MVA<sub>r</sub> capacity of the Non-Utility Generator as described below, except that the ISO shall pay this amount to the Non-Utility Generator if the purchaser under the existing power purchase agreements agrees to stipulate that the Non-Utility Generator should receive such payments. At such time as the existing power purchase agreements are terminated or expire, the Non-Utility Generators may then supply the required embedded cost data to the ISO and then receive payments under this rate schedule.

**(a) Formula for Determining the Payment for Voltage Support Service**

Payments to Generators and synchronous condensers eligible to provide Voltage Support Service will be based upon amounts filed in FERC Form 1 (or equivalent) according to the following formula:

$$\text{Annual VSCP} = \text{AFCR} \times \text{VCAPCOST} + \text{VOM}$$

Where:

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- Annual VSCP* = Annual Voltage Support Service payment to resources
- AFCR* = Annual fixed charge rate associated with resource capital investment
- VCAPCOST* = Current capital investment of the resource allocated for supplying Voltage Support Service.
- VOM* = Operating and maintenance (O&M) expenses for supervision and engineering allocated for supplying Voltage Support Service:
- (1) for Generators: O&M expenses (from FERC Form 1, Account #500 and 510, 517 and 528, 535 and 541, or 546 and 551) multiplied by 30% x (1-PF) as defined below.
- (2) for synchronous condensers: O&M expenses (from applicable FERC Form 1 Accounts or equivalent).

*VCAPCOST* is defined as:

- (1) for Generators:

$$VCAPCOST = [(1-PF) \times 30\% \times VTG] + [10\% \times VACC] + 0.2\% \times TOTREM$$

- (2) for synchronous condensers:

*VCAPCOST* = Current capital investment of synchronous condenser equipment in Commission generation accounts or their equivalent (which are not already



included in transmission rate base).

Where:

*PF* = Generator's tested Power Factor for producing Reactive Power (MVA<sub>r</sub>) at its normal maximum operating capability or 90% of its DMNC, whichever is greater.

*VTG* = Current capital investment of Generator's turbine-generator equipment from FERC Form 1, Account #314, 323, 333, or 344.

*VACC* = Current capital investment of Generator's accessory electrical equipment from FERC Form 1, Account #315, 324, 334, or 345.

*TOTREM* = Current total capital investment of production equipment (from FERC Form 1 (or equivalent), Account #310 through 346) Less ((1-PF) x 30% x VTG)  
Less (10% x VACC).

NOTE: The last term in the equation above (02% x TOTREM) is to account for Real Power Losses in the Generator step-up transformer associated with the production of full Reactive Power (MVA<sub>r</sub>) output.

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## Method for Calculating Charge for Reactive Supply and Voltage Support Service

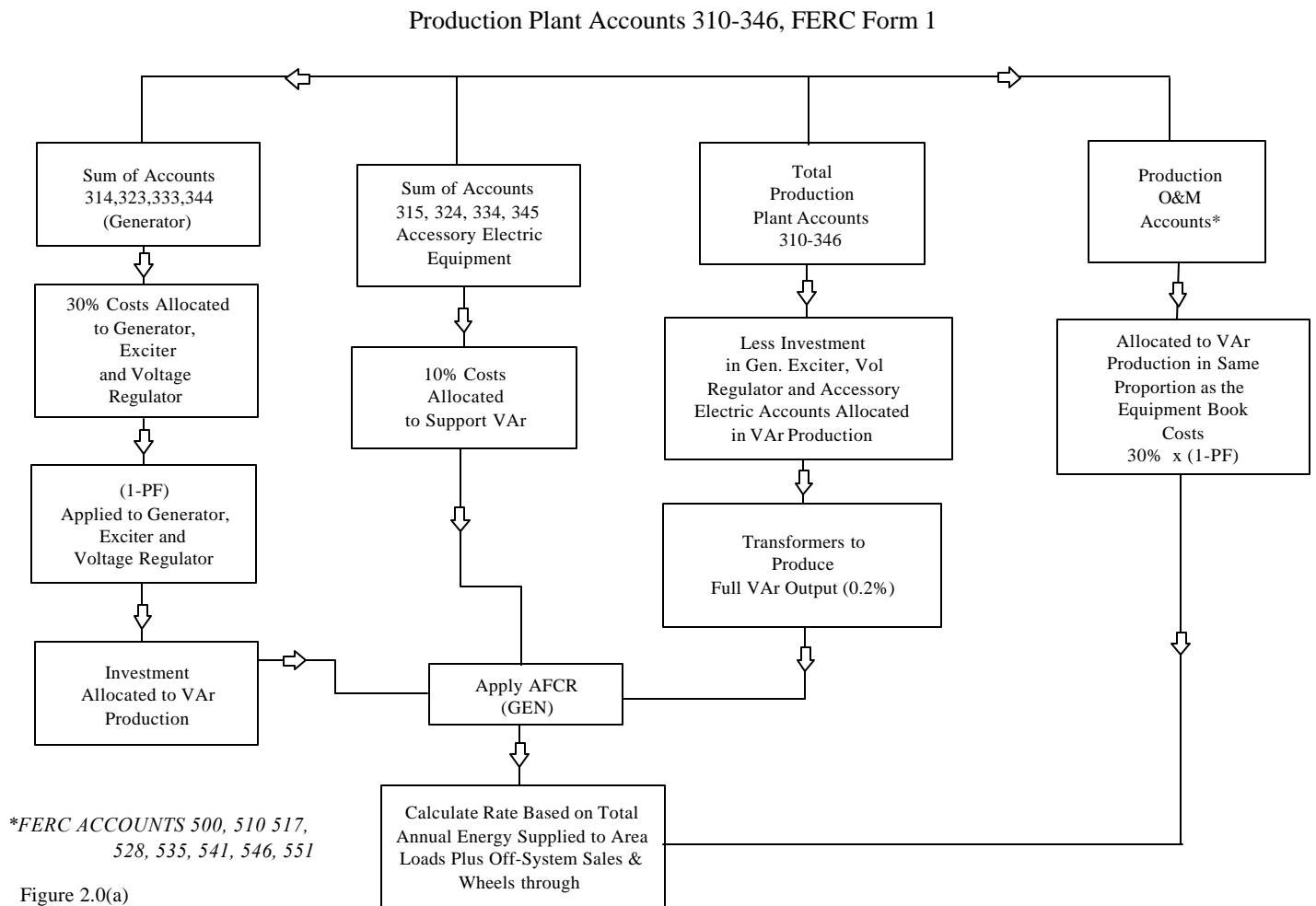


Figure 2.0(a)

Figure 2.0(a) illustrates the method for calculating the charge for Voltage Support Service using

FERC Form 1 data.

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**(b) Lost Opportunity Costs**

A Supplier of Voltage Support Service from a Generator that is being dispatched by the ISO shall also receive a payment for Lost Opportunity Costs (“LOC”) when the ISO directs the resource to reduce its real power (MW) output below its schedule in order to allow the resource to produce or absorb more Reactive Power (MVA<sub>r</sub>). The Lost Opportunity Cost payment shall be calculated as the product of: (a) the MW of output reduction; (b) the time duration of reduction in hours or fractions thereof; and (c) the Real-Time LBMP at the Generator bus minus the Generator’s Energy Bid for the reduced output of the Generator. The details of the Lost Opportunity Cost payments are as follows:

The formula below describes the calculation of LOC as applied to each Resource supplying Voltage Support Service.

$$LOC = P_{RT} (D_1 - D_2) - \int_{D_2}^{D_1} Bid$$

Where:

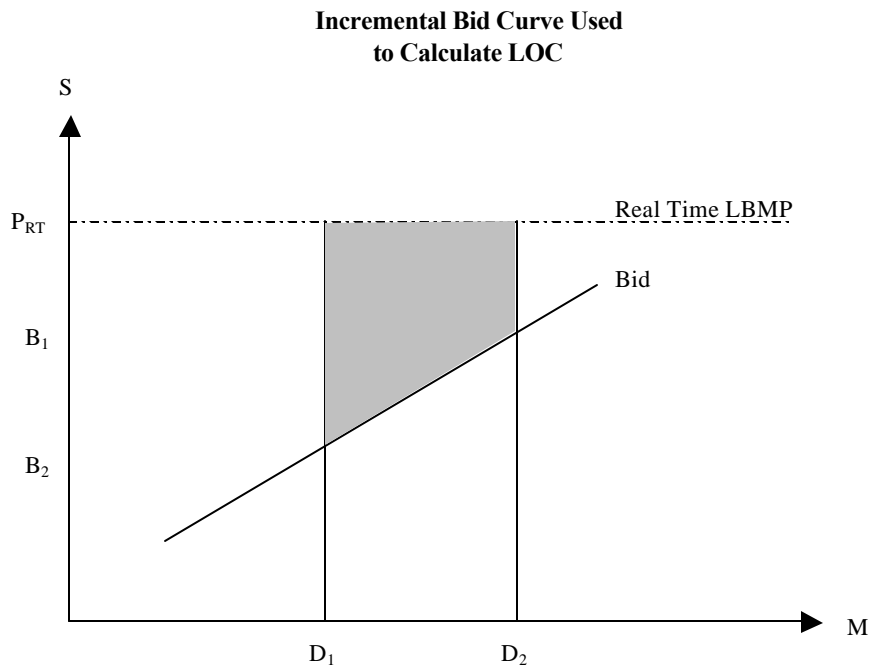
$P_{RT}$  = Real-Time LBMP

$D_1$  = Original dispatch point

$D_2$  = New dispatch point

Bid = Bid curve or Generation supplying Voltage Support Service

Figure 2.0(b) below graphically portrays the calculation of the LOC for a Generator which reduced its MW output to allow it to produce or absorb more Reactive Power (MVar).



**(c) Payments for Voltage Support Services Provided by Non-Utility Generators**

The ISO shall compute the rate used to calculate the payments to holders of power purchase agreements from Non-Utility Generators which provide Voltage Support Service based on forecast data using the following equation:

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$$Rate_{VSS} = \frac{\sum^{All} NYISO_{VSSPayments} + PYA_{VSS}}{\sum^{All} RPCAP_{VSSPayments}}$$

Where:

$Rate_{VSS}$  = Average Annual \$/MVA<sub>r</sub> rate for ISO Payments to Suppliers of Voltage Support Service

$\sum^{All} RPCAP_{VSSPayments}$  = The sum of the tested Reactive Power production capability for those resources providing Voltage Support Service to the ISO.

$\sum^{All} NYISO_{VSSPayments}$  = The sum of the projected ISO payments to Suppliers providing Voltage Support Service including; (1) total annual embedded costs eligible for payment as defined in paragraph 2(a) of this Rate Schedule; (2) any applicable LOC to provide Voltage Support Service as defined in paragraph 2(b) of this Rate Schedule.

$PYA_{VSS}$  = Total of prior year payments to Suppliers of Voltage Support Service less the total of payments received by the ISO from Transmission Customers and LSEs in the prior year for Voltage Support Service (including all payments for penalties).

The ISO shall pay each holder of a contract for a Non-Utility Generator operating under

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an existing power purchase agreement which provides Voltage Support Service the product of:

(a) one-twelfth of the Average Annual \$/MVA<sub>r</sub> rate for ISO payments to Suppliers of Voltage Support Service; (b) the lesser of the tested Reactive Power production capability (MVA<sub>r</sub>) of the Non-Utility Generator or the contract MVA<sub>r</sub> capability; and (c) for only those Non-Utility Generators that are not providing Installed Capacity under contract, the number of hours in the month the Non-Utility Generator provided Voltage Support Service divided by the number of hours in the month; and for those Non-Utility Generators that are under contract for Installed Capacity, (d) shall not apply. The ISO shall calculate and make payments monthly.

**(d) Failure to Perform by Suppliers**

A resource will have failed to provide voltage support if it:

- (1) fails at the end of 10 minutes to be within 5% (+/-) of the requested Reactive Power (MVA<sub>r</sub>) level of production or absorption as requested by the ISO or applicable Transmission Owner for levels below the resource's Normal Operating limit which must be at least 90% of its Dependable Maximum Net Capability (DMNC).
- (2) fails at the end of 10 minutes to be at 95% or greater of the resource's demonstrated Reactive Power capability (tested at its Normal Operating Limit or at 90% of its DMNC, whichever is greater in MW) in the

appropriate lead or lag direction when requested to go to maximum  
lead or lag reactive capability by the ISO or applicable Transmission  
Owner.

Whether the resource has failed to provide Voltage Support in a Contingency shall be defined by ISO Procedures. Suppliers of Voltage Support Service that fail to comply with the ISO Procedures will be assessed charges by the ISO as follows:

**(e) Failure to Respond to ISO's Request for Steady-State Voltage Control**

Initial Failure: If a resource fails to comply with the ISO's request for steady-state voltage control, the ISO shall withhold Voltage Support Service payments from the non-complying Supplier equivalent to one-twelfth (1/12th) of the annual embedded cost payment for that specific resource (or an amount equal to the last month's voltage support payment made to that resource, if the resource is not an Installed Capacity provider). The Supplier shall also be liable for any additional cost in procuring replacement Voltage Support Service including LOC incurred by the ISO as a direct result of the Supplier's non-performance.

Repeated Failures: For each instance of failure to perform, the non-complying Supplier will be subject to the charges described herein. If a resource fails to comply

with the ISO's request on three (3) separate days, within a thirty (30) day period, then upon the third occurrence, the non-complying Supplier will no longer be eligible for Voltage Support Service payments for service provided by that resource. The ISO may reinstate payments once the Supplier complies with the following conditions to the ISO's satisfaction:

- (1) the Supplier's resource must successfully perform a Reactive Power (MVar) capability test, and
- (2) the resource must provide Voltage Support Service for thirty (30) consecutive days without any compliance failures. No payments for Voltage Support Service or LOC will be made to the Supplier during this period.

**(f) Failure to Provide Voltage Support Service When a Contingency Occurs on the NYS Power System**

If a Supplier's resource fails to respond to a contingency, based on ISO review and analysis, the ISO shall withhold Voltage Support Service payments from the non-complying Supplier as follows:

Initial Failure: The ISO will withhold from the Supplier one-twelfth (1/12th) of the annual embedded cost payment for the specific resource (or an amount equal to the last month's voltage support payment made to that resource, if the resource is not



an Installed Capacity provider).

Second Failure within the same thirty (30) day period: The ISO shall withhold from the Supplier one-fourth (1/4th) of the annual embedded cost payment for the specific resource (or an amount equal to the last three (3) months' voltage support payments made to that resource, if the resource is not an Installed Capacity provider). In addition, the Supplier that is in violation shall be prohibited from receiving Voltage Support Service payments for the non-complying resource until the Supplier complies with the following conditions to the ISO's satisfaction:

- (1) the Supplier's resource shall successfully perform a Reactive Power (MVar) capability test, and
- (2) the resource shall provide Voltage Support Service for thirty (30) consecutive days without any compliance failures. No payments for Voltage Support Service, or LOC shall be made to the Supplier during this period.

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### **Rate Schedule 3**

#### **Payments for Regulation Service**

This Rate Schedule applies to Suppliers who provide Regulation Service to the ISO.

Transmission Customers will purchase Regulation Service from the ISO under the ISO OATT.

#### **1.0 Obligations of the ISO and Suppliers**

##### **1.1 The ISO shall:**

- (a) Establish regulation and frequency response criteria and requirements in the ISO Procedures to ensure that Generators follow changes in Load consistent with the Reliability Rules;
- (b) Provide SCD Base Point Signals and AGC Base Point Signals to Generators providing this Service to direct the Generator's output;
- (c) Establish criteria in the ISO Procedures that Generators must meet to qualify to supply this Service;
- (d) Establish minimum metering requirements and telecommunication capability required for a Generator to be able to respond to AGC Base Point Signals and SCD Base Point Signals sent by the ISO;
- (e) Select Suppliers to provide this Service in the Day-Ahead Market and during the Dispatch Day ("Real-Time Market"), as described in Section 2.0 of this Rate

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Schedule;

- (f) Pay Suppliers for providing this Service as described in Section 4.0 of this Rate

Schedule; and

- (g) Monitor the Suppliers' performance to ensure that they provide Regulation Service as required, as described in Section 3.0 of this Rate Schedule.

**1.2 Suppliers shall:**

- (a) Use Generators that are able to respond to AGC Base Point Signals sent by the ISO pursuant to the ISO Procedures;
- (b) Not use, contract to provide, or otherwise commit the capability that is designated to provide Regulation Service to provide Energy or spinning reserve to any party other than the ISO; and
- (c) Pay all charges due under Sections 2(f) and 4.1 of this Rate Schedule.

**1.3 Generators shall:**

- (a) Comply with SCD Base Point Signals issued by the ISO at all times pursuant to the ISO Procedures; and
- (b) Comply with the ISO Procedures that apply to providing Regulation Service

**2.0 Selection of Suppliers in the Day-Ahead and Real-Time Market (Dispatch Day)**

- (a) The ISO shall select Suppliers, in the Day-Ahead Market, to provide Regulation

Service for each hour in the following Dispatch Day, from those that have Bid to provide Regulation Service from Generators that meet the qualification standards and criteria established in the ISO Procedures.

- (b) Real-Time Market: The ISO shall establish a Real-Time Market to provide an alternate supply for Regulation Service during the Dispatch Day where (i) Suppliers scheduled in the Day-Ahead Market are inadequate (e.g., insufficient Suppliers Bid into the Day-Ahead Market for Regulation Service), (ii) a scheduled Supplier is unable to provide Regulation Service (e.g., the Generator tripped), or (iii) the demand for Regulation Service increases beyond the scheduled supply. The ISO shall select Suppliers in the Real-Time Market, during the Dispatch Day, to provide Regulation Service for each hour in which an insufficient supply of Regulation Service exists. The ISO shall select Suppliers for Regulation Service from those that have Bid to provide Regulation Service from Generators that meet the qualification standards and criteria established in the ISO Procedures.
- (c) The ISO shall establish separate Availability market clearing prices for Regulation Service in the Day-Ahead and Real-Time Market.
- (d) Bidding Process: (i) Any qualified Supplier may submit a Bid in the Day- Ahead Market to provide this Service; (ii) Bids rejected by the ISO may be modified and

resubmitted by the Supplier to the ISO in accordance with the terms of the ISO Tariff;  
and (iii) Bids in the Day-Ahead Market that are not accepted by the ISO shall be automatically considered for the Real-Time Market, unless withdrawn by the Supplier.

- (e) Each Bid shall contain the following information: (i) the Generator capability (in MW) that the Supplier will provide for Regulation Service; (ii) the Generator's regulation response rate (in MW/Minute) which must be sufficient to permit that Generator to provide the offered amount of Regulation Service within an SCD interval of normal length (initially, SCD intervals will normally be five (5) minutes long); (iii) the Supplier's Bid Price (in \$/MW); and (iv) the physical location and name or designation of the Generator.
- (f) The ISO shall, if a Generator providing Regulation Service trips off line, immediately attempt to re-establish a supply for the remainder of that Generator's commitment. Any additional cost incurred by the ISO as a result of covering the defaulting Generator's remaining commitment shall be reimbursed to the ISO by the defaulting Supplier. If the Availability payment for the replacement Regulation Service decreases, the ISO shall not pay the defaulting Supplier the difference in cost.

- (g) If a Generator reduces its Capacity bid subsequent to being scheduled to provide Regulation or Operating Reserves (either Day-Ahead or in a Supplemental Commitment), and if it, as a result, can no longer provide both the amount of Energy it was scheduled to provide Day-Ahead and the amount of Regulation and Operating Reserves it was scheduled to provide, the ISO will first reduce the amount of Operating Reserves it is scheduled to provide, and then will reduce the amount of Regulation it is scheduled to provide, until the total amount of Energy, Regulation and Operating Reserves it is scheduled to provide is equal to its Capacity (or until it is no longer scheduled to provide Regulation or Operating Reserves).

### **3.0 Monitoring Suppliers and Generators**

- (a) The ISO shall establish (i) Generator performance measurement criteria and (ii) procedures to disqualify Suppliers using Generators that consistently fail to meet such criteria.
- (b) The ISO shall establish and implement a Performance Tracking System to monitor the performance of Generators that provide Regulation Service. The ISO shall develop performance indices as part of the ISO Procedures. The Performance Tracking System shall compute the difference between the Energy

actually supplied and the Energy scheduled by the ISO for all Generators serving Load within the NYCA as set forth in the ISO Procedures. The ISO shall use these values to compute Settlements.

- (c) Payments by the ISO to each Supplier of Regulation Service will be based in part on the Generator's performance with respect to the performance indices.

#### **4.0 Payments to Suppliers of Regulation Services**

- (a) The ISO shall pay Suppliers of this Service (i) an Availability payment (for reserving capability to provide Regulation Service), and (ii) an Energy payment, as described below.
- (b) The Availability payment, for each hour or fraction thereof in which Regulation Service is provided, is equal to the following:

$$\textit{Availability Payment} = MCP_{reg} \times R_{cap}$$

Where:

$MCP_{reg}$  is the applicable regulation market clearing price for regulation capability (in MW), in either the Day-Ahead or Real-Time Market, as appropriate, as established by the ISO; and  $R_{cap}$  is the regulation capability (in MW) offered by the Supplier and selected by the ISO for either the Day-Ahead or Real-Time Market.

If Suppliers are scheduled in the Real-Time Market to begin providing Regulation



Service at some point within an hour, the market clearing price determined in the Real-Time Market may change during the hour. All Suppliers scheduled in the Real-Time Market to provide Regulation Service during the portion of any such hour preceding the price change will be paid the market clearing price determined in the Real-Time Market for the portion of the hour preceding the price change. All Suppliers scheduled in the Real-Time Market to provide Regulation Service during the portion of any such hour following the price change will be paid the market clearing price determined in the Real-Time Market for the portion of the hour following the price change.

The Energy payment is equal to the following:

- (i) Each Supplier shall receive Day-Ahead Market payments for Energy consistent with that Supplier's Day-Ahead schedule.
- (ii) At times when the AGC Base Point Signals exceeds the SCD Base Point Signals sent to a Supplier's resource, that Supplier shall be paid the Real-Time LBMP at that resource's bus for all Energy produced by that resource, up to the amount of Energy scheduled by the AGC Base Point Signals, minus the amount of Energy scheduled Day-Ahead to be produced by that resource.
- (iii) At times when the SCD Base Point Signals exceeds the AGC Base Point

Signals sent to a Supplier's Generator, each Supplier shall be paid the Real-Time LBMP at the Generator's bus for X MW minus the amount of Energy scheduled Day-Ahead to be produced by that Generator, where X is defined as:

$$X = \begin{aligned} &ACT, \text{ if } ACT < AGC - (SCD - AGC); \\ &AGC - (SCD - AGC) + 2(ACT - (AGC - (SCD - AGC))), \\ &\text{if } ACT \geq AGC - (SCD - AGC) \text{ and } ACT \leq AGC; \\ &SCD, \text{ if } ACT > AGC; \end{aligned}$$

where *ACT* is the amount of Energy actually produced by the Generator; *AGC* is the AGC Base Point Signal sent to the Generator; and *SCD* is the SCD Base Point Signal sent to the Generator.

- (iv) Notwithstanding the preceding clauses, whenever the ISO announces a reserve pick-up, each Supplier located in the area affected by that reserve pick-up shall be paid the Real-Time LBMP for all Energy it produces, minus the amount of Energy scheduled to be produced Day-Ahead by that Generator, if that Supplier was either scheduled to operate in BME or subsequently has been directed to operate by the ISO.

### **Regulation Market Clearing Price**

The ISO shall determine a regulation market clearing price to be paid to Suppliers for resource Availability (in MW) reserved to provide Regulation Service in the Day- Ahead or Real-Time Markets. The ISO shall stack Bids submitted by qualified Suppliers from lowest Bid (\$/MW) to highest Bid. The ISO shall select Bids to provide Regulation Service starting with the lowest Bids. The Bid associated with the last Supplier selected to supply Regulation Service shall set the  $MCP_{reg}$ . All Suppliers selected in the same market (i.e., Day-Ahead or Real-Time) will receive an Availability payment calculated with the corresponding  $MCP_{reg}$ .

#### **4.1 Payments by Suppliers**

Suppliers shall pay to the ISO a charge as follows:

$$\text{Supplier Charge} = \text{Energy Deviation} \times \text{MCP} \times (\text{Length of SCD Interval}/60 \text{ minutes})$$

where: Energy Deviation (in MW) is the absolute difference between the actual Energy supplied by the Supplier and the Energy required by the AGC Base Point Signals, whether positive or negative, averaged over each SCD interval; MCP is the market clearing price (\$/MW) which applies to the SCD interval for this Service in the Real-Time Market or the Day-Ahead Market if no Real-Time Market applies.

The method used by the ISO to calculate the Energy Deviation will permit Suppliers a

certain period of time to respond to AGC Base Point Signals. Initially this time period will be thirty (30) seconds, although the ISO will have the authority to change its length. If the Supplier's output at any point in time is between the largest and the smallest of the AGC Base Points sent to that Supplier within the preceding thirty (30) seconds (or such other time period length as the ISO may define), the Supplier's Energy Deviation at that point in time will be zero.

Otherwise, the Supplier may have a positive Energy Deviation. However, in cases in which responding to the AGC Base Point within that time period would require a Supplier to change output at a rate exceeding the amount of Regulation it has been scheduled to provide, the Supplier will have a zero Energy Deviation if it changes output at the rate equal to the amount of Regulation it is scheduled to provide.

#### **4.2 Payments by Generators not providing Regulation Service**

Generators that sell Energy through the LBMP Markets or supply Bilateral Transactions that serve Load in the NYCA, but do not provide Regulation Service, shall pay to the ISO a charge for Regulation Service equivalent to the following:

$$\text{Generator Charge} = \text{Energy Difference} \times \text{MCP} \times \text{Length of SCD Interval}/60 \text{ minutes}$$

where: Energy Difference (in MW) is the absolute difference between the actual Energy supplied by the Generator and the Energy required by the SCD Base Point Signals, whether positive or negative, averaged over each SCD interval; MCP is the Market Clearing Price (\$/MW) which

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applies to the SCD interval for which Regulation Service in the Real-Time Market, or the Day-Ahead Market if no Real-Time Market applies. In cases in which the Energy Difference that would be calculated using the procedure described above is less than a tolerance level to be defined by the ISO, the ISO shall set the Energy Difference for that SCD interval equal to zero.

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## **Rate Schedule 4**

### **Payments for Supplying Operating Reserves**

This Rate Schedule applies to payments to Suppliers who provide Operating Reserves to the ISO. Transmission Customers will purchase Operating Reserves from the ISO under the ISO OATT.

The ISO shall provide procedures to establish adequate Operating Reserves that comply with the Reliability Rules. Operating Reserves are classified as follows:

- (1) Spinning Reserve: Operating Reserves provided by generation facilities and Interruptible Load Resources located within the NYCA that are already synchronized to the NYS Power System and can respond to instructions to change output level within ten (10) minutes;
- (2) 10-Minute Non-Synchronized Reserve ("10-Minute NSR"): Operating Reserves provided by generation facilities that can be started, synchronized and loaded within ten (10) minutes; and
- (3) 30-Minute Reserve: Operating Reserves provided by generation facilities and Interruptible Load Resources that can respond to instructions to change output or consumption level within thirty (30) minutes.

The ISO shall satisfy at least fifty (50) percent of the applicable 10-Minute Reserve

requirements with Spinning Reserve. If the ISO satisfies all of the 10-Minute Reserve requirement through Spinning Reserve, it does not have to maintain 10-Minute NSR. The ISO shall establish additional categories of Operating Reserves if necessary to ensure reliability.

## **1.0 General Requirements**

The ISO shall ensure that providers of Operating Reserves are properly located electrically so that transmission constraints resulting from either commitment or dispatch of units do not limit the ability to deliver Energy to Loads in the case of a Contingency. The ISO will ensure that Capacity counted toward meeting Operating Reserve requirements is not also counted toward meeting Regulation and Frequency Response Service requirements.

## **2.0 Spinning Reserve-Requirements and Responsibilities**

### **2.1 Day-Ahead Market for Spinning Reserve**

Suppliers offering Generator or Demand Side Resources to provide Spinning Reserve in the Day- Ahead commitment shall submit Availability Bids for each hour of the upcoming day. For Spinning Reserves Suppliers located east of the Central East constraint not subject to a requirement to submit Availability Bids shall be limited to zero plus each Spinning Reserves Supplier's verifiable fuel commitment costs for providing Spinning Reserves for each hour. The ISO shall select Spinning Reserve Suppliers for each hour of the upcoming day through its Day-Ahead commitment, using Bids and/or schedules provided by the Suppliers, including



Availability Bids by both Class A Unit and Class B Unit Suppliers, and Energy Bids by Class A Unit Suppliers. The ISO shall notify each Supplier of Spinning Reserve that has been selected in the Day-Ahead Schedule of the amount of Spinning Reserve it has been scheduled to provide. Suppliers of Spinning Reserve scheduled Day-Ahead shall either provide Spinning Reserve or shall generate Energy when requested by the ISO to do so, in all hours for which they have been selected to provide Spinning Reserve.

## **2.2 Real-Time Market for Spinning Reserve**

During each Dispatch Day, Suppliers whose Generators have not been scheduled to provide Spinning Reserve and which still have Capacity that has not been committed for use in any other way may submit Availability Bids to provide Spinning Reserve to the ISO.

These real-time Availability Bids may differ from Availability Bids that were made by those Suppliers in the Day-Ahead commitment, except that for Spinning Reserves Suppliers located east of the Central East constraint not subject to a requirement to submit Availability Bids at a lower level, Availability Bids shall be limited to zero plus each hour. If the ISO anticipates that it will require additional Spinning Reserves in an hour, it shall select additional Suppliers of Spinning Reserve from among those Suppliers that have submitted Real-Time Availability Bids to it for that hour. It shall make this selection with the objective of minimizing the cost of meeting Load and providing all necessary Ancillary Services in that hour. The ISO shall notify

each Supplier of Spinning Reserve that has been selected in the Real-Time dispatch of the amount of Spinning Reserve it must provide. Any previously uncommitted Class A Unit whose Bid to provide Spinning Reserve is accepted by the ISO will be treated as a Generator on dispatch.

### **2.3 Suppliers' Responsibilities**

All Generators selected by the ISO as Suppliers of Spinning Reserve must be located within the NYCA and must be under ISO Operational Control. All Suppliers of Spinning Reserves selected by the ISO shall ensure that their Generators maintain and deliver the appropriate quantity of Energy when called upon by the ISO in all hours in which they have been selected to provide Spinning Reserve. Each Generator bidding to supply Spinning Reserve must be able to provide Energy consistent with the Reliability Rules and the ISO Procedures when called upon by the ISO and shall specify in its Bid the amount of time for which it can supply such Energy.

Class A Units may not contract to provide, or otherwise commit any Capacity that has been scheduled to operate or to provide Operating Reserves, in either the Day-Ahead commitment or any supplemental commitment conducted by the ISO. They also may not increase the Energy Bids made for the portions of those Generators that have been scheduled Day-Ahead to provide Spinning Reserve.

They may enter into alternate sales arrangements

utilizing any Capacity that has not been scheduled to operate or to provide Operating Reserves. Class B Units may not use, contract to provide or otherwise commit any Capacity that has been scheduled to provide Spinning Reserve, in either the Day-Ahead commitment or in any subsequent commitment by the ISO. Subject to the limitations on Installed Capacity Suppliers, if applicable, they may enter into alternate sales arrangements utilizing any Capacity that has not been scheduled to provide Spinning Reserve.

#### **2.4 Spinning Reserve Service in Real-Time Operation**

The ISO shall, if necessary, reduce the output on Class A Units via SCD from otherwise economic loading to provide Spinning Reserve capability. When reserve is activated, the ISO shall measure actual performance against expected performance and shall charge financial penalties, as detailed in Section 5 of this Rate Schedule to Suppliers of Spinning Reserve which fail to perform in accordance with their accepted bids.

### **3.0 10-Minute NSR and 30-Minute Reserve Requirements and Responsibilities**

#### **3.1 Day-Ahead Market for 10-Minute NSR and 30-Minute Reserve**

Suppliers offering Generators or Demand Side Resources to provide 10-Minute NSR and/or 30-Minute Reserve in the Day-Ahead commitment shall submit Availability Bids for each hour of the upcoming day. For Suppliers located east of the Central-East constraint, Day-Ahead Availability Bids to provide 10-Minute NSR for each hour shall be limited to the incremental costs associated with the provision of 10-Minute NSR, not to exceed \$2.52/MW in each hour. The ISO shall select Suppliers of 10-Minute NSR and 30-Minute Reserve for each hour of the upcoming day through the Day-Ahead commitment, using Bids and/or schedules provided by the Suppliers. The ISO shall notify each Supplier of 10-Minute NSR and/or 30-Minute Reserve that has been selected in the Day-Ahead schedule of the amount of 10-Minute NSR and/or 30-Minute Reserve it has been scheduled to provide.

Suppliers of 10-Minute NSR and/or 30-Minute Reserve scheduled Day-Ahead shall provide 10-Minute NSR and/or 30-Minute Reserve for all hours in which they have been scheduled to provide 10-Minute and/or 30-Minute Reserve.

#### **3.2 Real-Time Markets for 10-Minute NSR and 30-Minute Reserve**

During the day, Suppliers that have not been scheduled to provide 10-Minute NSR or 30-Minute Reserve and which still have Capacity that has not been committed for use in any other way may submit Availability Bids to provide 10-Minute NSR and/or 30-Minute Reserve to the

ISO. These Real-Time Availability Bids may differ from Availability Bids that were made by those Suppliers in the Day-Ahead commitment, except that for Suppliers located east of the Central-East constraint, Real-Time Availability Bids to provide 10-Minute NSR for each hour shall be limited to the incremental costs associated with the provision of 10-Minute NSR, not to exceed \$2.52/MW in each hour. If the ISO anticipates that additional Suppliers of 10-Minute NSR or 30-Minute Reserve are needed in an hour, it shall select additional Suppliers of 10-Minute NSR or 30-Minute Reserve from among those Suppliers that have supplied Real-Time Availability Bids to it for that hour. It shall make this selection with the objective of minimizing the cost of meeting Load and providing all necessary Ancillary Services in that hour.

The ISO may perform multiple selections of Suppliers of 10-Minute NSR or 30-Minute Reserve for any given hour. Suppliers bidding to supply 10-Minute NSR or 30-Minute Reserve that have not already been scheduled to provide 10-Minute NSR or 30-Minute Reserve may change their Real-Time Bids from one hour to the next, except that for Suppliers located east of the Central-East Constraint, Real-Time Availability Bids to provide 10-Minute NSR for each hour shall be limited to the incremental costs associated with the provision of 10-Minute NSR, not to exceed \$2.52/MW in each hour. The ISO shall notify each Supplier of 10-Minute NSR or 30-Minute Reserve that has been scheduled in the Real-Time dispatch of the amount of 10-Minute NSR or 30-Minute Reserve it must provide. Any Supplier whose Bid to provide 10-

Minute NSR or 30-Minute Reserve is accepted by the ISO in the Real-Time dispatch must make its Generators or Demand Side Resources available for dispatch by the ISO.

### **3.3 Suppliers' Responsibilities**

Subject to the ISO's locational requirements, Suppliers of 10-Minute NSR or 30-Minute Reserve may use Generators located within the NYCA or outside the NYCA. In order for a Supplier to provide 10-Minute NSR or 30-Minute Reserve using a Generator located outside the NYCA, the operator of that Generator's Control Area must have agreed to modify the DNI between the NYCA and that Control Area instantaneously upon notification by the ISO that the ISO is initiating a reserve pick-up for the area including that Generator. The amount of a 10-Minute NSR provided by Generators within any given External Control Area cannot exceed the maximum amount by which the operator of that Control Area will change the DNI from that Control Area into the NYCA within ten (10) minutes of the initiation of a reserve pick-up by the ISO.

Likewise, the amount of 30-Minute Reserve provided by Generators within any given external Control Area cannot exceed the maximum amount by which the operator of that Control Area will change the DNI from that Control Area into the NYCA within thirty (30) minutes of the initiation of a reserve pick-up by the ISO. All Generators selected by the ISO as Suppliers of 10-Minute NSR or 30-Minute Reserve shall ensure that their Generators maintain and deliver the appropriate quantity of Energy when called upon by the ISO in all hours in which they have

been scheduled to provide 10-Minute NSR or 30-Minute Reserve.

Suppliers may not use, contract to provide or otherwise commit any Capacity on any Generator that has been scheduled to provide 10-Minute NSR or 30-Minute Reserve in the Day-Ahead commitment or in the Real-Time dispatch. Subject to the limitations on Installed Capacity Suppliers, if applicable, they may enter into alternate sales arrangements utilizing any Capacity that has not been scheduled to provide 10-Minute NSR or 30-Minute Reserve in either the Day-Ahead commitment or in the Real-Time dispatch.

### **3.4 10-Minute NSR and 30-Minute Reserve Service in Real-Time Operation**

Suppliers of 10-Minute NSR and 30-Minute Reserve shall respond to direction by the ISO to activate. When reserve is activated, the ISO shall measure actual performance against expected performance and shall charge financial penalties as detailed in Section 5 of this Rate Schedule, to Suppliers of 10-Minute NSR or 30-Minute Reserve which fail to perform in accordance with their accepted Bids.

### **4.0 Payments to Suppliers of Spinning Reserve**

#### **Availability Payments**

Each Supplier which the ISO has scheduled Day-Ahead to provide Spinning Reserve shall be paid the Day-Ahead Availability price for Spinning Reserve in each hour, multiplied by the amount of Spinning Reserve that Supplier is scheduled to provide in each hour. The Day-

Ahead Availability price for Spinning Reserve for each hour shall be equal to the highest Day-Ahead Availability Bid made by a Supplier that has been scheduled Day-Ahead to provide Spinning Reserve in that hour.

Subject to the limitation in Section 4.3 below, each Supplier whose Generator(s) provides more Spinning Reserve in an hour than it was scheduled Day-Ahead to provide in that hour shall be paid the Real-Time Availability price for Spinning Reserve in that hour, multiplied by the amount of Spinning Reserve that Supplier provided in that hour that was in excess of the amount scheduled to be provided Day-Ahead, if any. The ISO shall calculate separate Real-Time Availability prices for Spinning Reserve for each hour. The Real-Time Availability price for Spinning Reserve for each hour shall be equal to the highest Real-Time Availability Bid made by a Supplier providing Spinning Reserve in that hour that is providing more Spinning Reserve in that hour than it had been scheduled to provide in that hour in the Day-Ahead schedule.

Real-Time Availability prices for Spinning Reserve may change within an hour, if additional Suppliers are scheduled to begin providing this Service within an hour. In such cases, the price changes will apply only to the remaining portion of that hour. All Suppliers providing Spinning Reserve that receive the Real-Time Availability price for Spinning Reserve will be paid the Real-Time Availability price applicable to the portion of the hour preceding the price change



for all Spinning Reserve provided before the price change. All Suppliers providing Spinning Reserve that receive the Real-Time Availability price for Spinning Reserve will be paid the Real-Time Availability price applicable to the portion of the hour following the price change for all Spinning Reserve provided after the price change.

Acceptance of any Spinning Reserve Bid in the Real-Time Market shall not affect the Availability price for Spinning Reserve that was determined Day-Ahead.

### **Lost Opportunity Cost Payments**

A Class A Supplier of Spinning Reserve that produces less Energy in the real-time dispatch than it would have been economic for it to produce because of its selection to provide 10-Minute Spinning Reserve will be paid for Lost Opportunity Costs ("LOC"). The Lost Opportunity Cost Payment ("LOCP") that each such Supplier receives in each SCD interval shall be computed by multiplying the following: (i) the LOC of that Supplier in that interval, in \$/MW; (ii) the number of MW of Spinning Reserve supplied by that Supplier in that interval; and (iii) the length of the SCD interval, in hours. LOC in each SCD interval shall be calculated as follows:

$$LOC = \max ( P_i - B_i , 0 )$$

where:

$B_i$  = Energy Bid by Generator  $i$  at the level at which it is dispatched. For units scheduled to provide Spinning Reserve both Day-Ahead and hour-ahead, the Bid is the higher of the Day-Ahead or real-time bid. For units scheduled only hour-ahead, it is the real-time Energy Bid. If Bids lower than zero are submitted,  $B_i$  shall equal zero.

$P_i$  = Real-Time LBMP at Generator  $i$ 's location in that interval.

Suppliers with Class B Units scheduled for Spinning Reserve shall not receive LOC payments for Capacity that was not available to be scheduled to generate Energy.

### **Other Payments**

The ISO shall pay the Real-Time LBMP for all Energy generated in accordance with the ISO's instructions. (Suppliers of Spinning Reserve shall be paid for Energy produced during reserve pick-ups in accordance with the provisions of Article 4 of the Tariff relative to real-time Settlements.) Real-Time LBMPs shall be computed under the assumption that all Energy generated by Class B Units supplying Spinning Reserve are fixed injections.

As provided in Article 4 of the Tariff, each Generator providing Spinning Reserves shall also be compensated by the ISO if its Bid Production Cost to provide the Energy and Ancillary Services the ISO has scheduled it to supply in the Day-Ahead Market, including start-up costs, minimum Load costs, and Availability Bids exceeds the revenues it receives from the sale of

Energy at LBMP prices, and ancillary services, including real-time opportunity costs for ancillary services scheduled Day-Ahead. On any day that Long Island reserve constraints are binding, the NYISO reserves the right to allocate to Long Island customers the net incremental bid production cost guarantee charges for Long Island units that have been committed for either Energy or Operative Reserves, if it is determined that a Long Island Reserve constraint caused those units to be committed.

#### **4.1 Payments to Suppliers of 10-Minute Non-Synchronized Reserve**

##### **Availability Payments**

Each Supplier which the ISO has scheduled Day-Ahead to provide 10-Minute NSR shall be paid the Day-Ahead Availability price for 10-Minute NSR in each hour, multiplied by the amount of 10-Minute NSR that Generator is scheduled to provide in each hour. The Day-Ahead Availability price for 10-Minute NSR for each hour shall be equal to the highest Day-Ahead Availability Bid made by a Supplier that has been scheduled Day-Ahead to provide 10-Minute NSR in that hour.

Subject to the limitation in Section 4.3 below, each Supplier which provides more 10-Minute NSR than it was scheduled Day-Ahead to provide in that hour shall be paid the Real-Time Availability price for 10-Minute NSR, multiplied by the amount of 10-Minute NSR that Generator provided in that hour that was in excess of the amount scheduled to be provided Day-

Ahead, if any. The ISO shall calculate separate Real-Time Availability prices for 10-Minute NSR for each hour. The Real-Time Availability price for 10-Minute NSR for each hour shall be equal to the highest Real-Time Availability Bid made by a Supplier providing 10-Minute NSR in that hour that is providing more 10-Minute NSR in that hour than it had been scheduled to provide in that hour in the Day-Ahead schedule.

Real-Time Availability Prices for 10-Minute NSR may change within an hour, if additional Suppliers are scheduled to begin providing this Service within an hour. In such cases, the price changes will apply only to the remaining portion of that hour. All Suppliers providing 10-Minute NSR that receive the Real-Time Availability price for 10-Minute NSR will be paid the Real-Time Availability price applicable to the portion of the hour preceding the price change for all 10-Minute NSR provided before the price change. All Suppliers providing 10-Minute NSR that receive the Real-Time Availability Price for 10-Minute NSR will be paid the Real-Time Availability price applicable to the portion of the hour following the price change for all 10-Minute NSR provided after the price change.

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### Lost Opportunity Cost Payments

A Supplier of 10-Minute NSR which produces less Energy in the real-time Dispatch than it would have been economic for it to produce because it has been selected (in the Day-Ahead or Real-Time Markets) to provide 10-Minute NSR will be paid for LOC. The LOC payment that each such Supplier receives in each SCD interval shall be computed by multiplying the following: (i) the LOC of that Supplier in that interval, in \$/MW; (ii) the amount of generation that would have been scheduled had the Supplier not provided reserve; and (iii) the length of the SCD interval, in hours. LOC in each SCD interval shall be calculated as follows:

$$LOC_1 = \max ( P_i - B_i , 0 )$$

where:

I = the interval duration;

$B_i$  = Energy Bid by Generator  $i$  at the level at which it is dispatched. For units scheduled to provide 10-Minute NSR Day-Ahead and hour-ahead, the Bid is the higher of the Day-Ahead or real-time Bid. For units scheduled only hour-ahead, it is the real-time Energy Bid. If Bids less than zero are submitted,  $B_i$  shall be equal to zero.

$P_i$  = For the interval and for units scheduled to provide reserve both Day-Ahead and hour-ahead, this shall be the Day-Ahead LBMP at Generator's location unless the resultant LOC is less than or equal to zero, in which case it shall be the Real-Time LBMP at the Generator location. For the interval and for units scheduled to provide reserve hour-ahead, this shall be Real-Time LBMP at Generator's location.

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### **Other Payments**

The ISO shall pay the Real-Time LBMP for all Energy generated by Suppliers of 10-Minute NSR in accordance with the ISO's instructions. (Suppliers of 10-Minute NSR shall be paid for Energy produced during reserve pick-ups in accordance with the provisions of Article 4 related to Real-Time Market Settlement.)

As provided in Article 4 of the Tariff, each 10-Minute NSR Supplier shall also be compensated by the ISO if its Bid Production Cost to produce the Energy the ISO has requested it to generate, including start-up costs, exceeds the revenues it receives from ancillary service Availability payments and the sale of Energy at LBMP prices.

## **4.2 Payments to Suppliers of 30-Minute Reserve**

### **Availability Payments**

Each Supplier scheduled Day-Ahead to provide 30-Minute Reserve shall be paid the Day-Ahead Availability price for 30-Minute Reserve in each hour, multiplied by the amount of 30-Minute Reserve that the Supplier is scheduled to provide in each hour. The Day-Ahead Availability price for 30-Minute Reserve for each hour shall be equal to the highest Day-Ahead Availability Bid made by a Supplier that has been scheduled Day-Ahead to provide 30-Minute Reserve in that hour.

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Subject to the limitation in Section 4.3 below, each Supplier which provides more 30-Minute Reserve than it was scheduled Day-Ahead to provide in each hour shall be paid the Real-Time Availability price for 30-Minute Reserve, multiplied by the amount of 30-Minute Reserve that the Supplier provided in that hour that was in excess of the amount scheduled to be provided Day-Ahead, if any. The ISO shall calculate separate Real-Time Availability prices for 30-Minute Reserve for each hour. The Real-Time Availability price for 30-Minute Reserve for each hour shall be equal to the highest Real-Time Availability Bid made by a Supplier providing 30-Minute Reserve in that hour that is providing more 30-Minute Reserve in that hour than it had been scheduled to provide in that hour in the Day-Ahead schedule. Real-time Availability prices for 30-Minute Reserve may change within an hour, if additional Suppliers are scheduled to begin providing this service within an hour. In such cases, the price changes will apply only to the remaining portion of that hour. All Suppliers providing 30-Minute Reserve that receive the Real-Time Availability price for 30-Minute Reserve will be paid the Real-Time Availability price applicable to the portion of the hour preceding the price change for all 30-Minute Reserve provided before the price change. All Suppliers providing 30-Minute Reserve that receive the Real-Time Availability price for 30-Minute Reserve will be paid the Real-Time Availability price applicable to the portion of the hour following the price change for all 30-Minute Reserve

provided after the price change. Acceptance of any Bid to supply 30-Minute Reserve in the Real-Time Market shall not affect the Availability price for 30-Minute Reserve that was determined Day-Ahead.

### **Other Payments**

The ISO shall pay the Real-Time LBMP for all Energy generated in accordance with the ISO's instructions. (Suppliers of 30-Minute Reserve shall be paid for Energy produced during reserve pick ups in accordance with the provisions of Article 4 related to real-time Settlement.) As provided in Article 4 of the Tariff, each 30-Minute Reserve Supplier shall also be compensated by the ISO if its Bid Production Cost to produce the Energy the ISO has requested it to generate, including start-up costs, exceeds the revenues it receives from ancillary service Availability payments and the sale of Energy at LBMP prices. On any day that Long Island reserve constraints are binding, the ISO reserves the right to allocate to Long Island customers the net incremental bid production cost guarantee charges for Long Island units that have committed for either Energy or Operating Reserves if it is determined that a Long Island reserve constraint caused those units to be committed.

### **4.3 Exceptions**

Notwithstanding anything to the contrary in this Rate Schedule, no payments shall be made to any Supplier providing Operating Reserves for reserves provided by that Supplier in

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excess of the amount of Operating Reserves scheduled by the ISO either Day-Ahead or in any subsequent schedule. The market clearing price paid to Suppliers of any category of Operating Reserve shall not be determined by any Bid to supply Operating Reserve that has not been accepted by the ISO.

### **5.0 Failure to Provide Operating Reserves**

If a Supplier reduces its Capacity Bid subsequent to being scheduled to provide Regulation Service or Operating Reserves (either Day-Ahead or in a supplemental commitment), and if the ISO must, as a result, reduce the amount of Operating Reserves that Supplier is scheduled to provide in accordance with Rate Schedule 3 of this Tariff, the ISO will first reduce the amount of 30-Minute Reserve that Generator is scheduled to provide. If it is still necessary to reduce the amount of Operating Reserves that Supplier is scheduled to provide, the ISO will reduce the amount of 10-Minute NSR that Generator is scheduled to provide. Finally, if it is still necessary to reduce the amount of Operating Reserves that Supplier is scheduled to provide, the ISO will reduce the amount of Spinning Reserve that Generator is scheduled to provide.

If a Supplier scheduled Day-Ahead to provide Operating Reserves trips off-line and consequently is unable to provide Spinning Reserve, or if the amount of Operating Reserves a Supplier is scheduled to provide is decreased due to a reduction in that Supplier's Capacity, it

shall be charged the Real-Time Availability price at its location (or the Day-Ahead Availability price, if there is no Real-Time Availability price) in each hour for the relevant category of Operating Reserves applied to the reduction in the amount of Operating Reserves it was scheduled Day-Ahead to provide at that location.

If the ISO calls for a Supplier of any category of Operating Reserves (other than a Supplier that has previously tripped off-line) to generate Energy with part or all of the Capacity that the ISO has scheduled to provide any category of Operating Reserves, and that Supplier fails to provide the amount of Energy requested by the ISO within the time applicable for the scheduled Operating Reserves (ten (10) or thirty (30) minutes), the ISO shall:

- (1) not pay the non-performing Supplier for any shortfall in the amount of Energy provided;
- (2) charge the Supplier for any shortfall in the amount of Energy provided, at the Real-Time LBMP for Energy at that Supplier's location;
- (3) charge the Supplier a regulation penalty, as described in Rate Schedule 3; and
- (4) reduce any Availability payments for the scheduled Operating Reserves, and any Lost Opportunity Cost payments, if applicable, that the Supplier would otherwise have received for the 24-hour billing period in which that Supplier failed to

perform as scheduled. The Availability payments and the Lost Opportunity Cost payments, if applicable, that the Supplier would have received will be calculated by multiplying the average ratio of the amount of Energy supplied to the amount of Energy scheduled, during any activation of that Supplier during that 24-hour billing period by the applicable Availability payments and Lost Opportunity Cost payments, if applicable, that the Supplier would otherwise have received.

If a Generator providing Operating Reserves has repeatedly failed to provide Energy when called upon by the ISO, the ISO may preclude that Generator from providing Operating Reserves in the future. If a specific Generator has been precluded from supplying Operating Reserves, the ISO shall require that Generator to pass a re-qualification test before accepting any additional Bids to supply Operating Reserves from that Generator.

## **6.0 Self-Supply**

Transactions may be entered into to provide for Self-Supply of Operating Reserves. Except as noted in the next paragraph, Customers seeking to Self-Supply Operating Reserves must place the Generator(s) supplying any one of the Operating Reserves under ISO control. The Generator(s) must meet ISO rules for acceptability. The amount that any such Customer will be

charged for Operating Reserves will be reduced by the market value of the services provided by the specified Generator(s) as determined in the ISO Services Tariff.

Alternatively, Customers, including LSEs, may enter into Day-Ahead Bilateral financial Transactions, *e.g.*, contracts-for-differences, in order to hedge against price volatility in the Operating Reserves markets.

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FERC Electric Tariff  
Original Volume No. 2

Original Sheet Nos. 308 through 310

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## **Rate Schedule 5**

### **Payments For Black Start Capability**

This Rate Schedule applies to payments to Suppliers who provide Black Start Capability Service to the ISO. The ISO shall make Black Start Capability payments only to those selected Suppliers that have appropriate Black Start equipment installed and available for service at the request of the ISO.

#### **1.0 Requirements**

The ISO shall develop and periodically review a Black Start restoration plan for the NYS Power System. The ISO may amend this restoration plan and determine Black Start requirements to account for changes in system configuration if the ISO determines that additional Black Start resources are needed. The ISO shall have the flexibility to seek Bids for new resources when it amends the current plan. The ISO shall establish procedures for acquiring Black Start Capability and testing selected Generators providing this service. The ISO shall make Black Start Capability payments only to those selected Suppliers that have appropriate Black Start equipment installed and available for service at the request of the ISO.

The full restoration of the NYS Power System will require some additional Black Start

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Generators, which are located in local Transmission Owner areas and which are not presently listed in the ISO restoration plan. Although the ISO plan will restore a major portion of the NYS Power System there are portions of the NYS Power System that will remain under Transmission Owner restoration control. Where the Transmission Owner's restoration plan requires additional Black Start service, the ISO will make payments for local area Black Start Capability directly to the Generators that provide that service, under the terms of this Rate Schedule. The LSEs in those local Transmission Owner areas will be additionally charged for that Black Start service by the ISO under the ISO OATT. Generators, which are obligated to provide Black Start service as a result of divestiture contract agreements, will not receive ISO payments for that service if they are already compensated for such service as part of those divestiture contracts.

## **2.0 Payment for Black Start Capability**

By May 1<sup>st</sup> of each year, the following embedded cost information for Black Start equipment located at the Generators which were selected as essential for system restoration must be provided to the ISO based upon FERC Form No. 1 or equivalent data:

- Capital and fixed operation and maintenance costs associated with only those facilities within Generators that provide Black Start Capability; and
- Annual costs associated with training operators in system restoration.

Each Supplier will be paid on the basis of its costs filed with the ISO. The daily rate for

Black Start Capability will be determined by dividing the Generator's annual cost by the number of days in the year from May 1st through April 30th of the following year.

The ISO (and Transmission Owner, when applicable) shall conduct Black Start Capability tests for providers of Black Start Capability. Any Generator that is awarded Black Start Capability payments and fails a Black Start Capability test shall forfeit all Black Start Capability payments made to that Generator since its last successful test. Payments to that Generator shall not resume until it successfully passes the Black Start Capability test.

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