15.3 Rate Schedule 3 - Payments for Regulation Service

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This Rate Schedule applies to Suppliers that provide Regulation Service to the ISO. Transmission Customers will purchase Regulation Service from the ISO under the ISO OATT.

15.3.1 Obligations of the ISO and Suppliers

15.3.1.1 The ISO shall:

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(a) Establish Regulation Service criteria and requirements in the ISO Procedures to ensure that Suppliers follow changes in Load consistent with the Reliability Rules;

(b) Provide RTD Base Point Signals and AGC Base Point Signals to Suppliers providing Regulation Service to direct their output;

(c) Establish criteria in the ISO Procedures that Suppliers must meet to qualify, or re-qualify, to supply Regulation Service;

(d) Establish minimum metering requirements and telecommunication capability required for a Supplier to be able to respond to AGC Base Point Signals and RTD Base Point Signals sent by the ISO;

(e) Select Suppliers to provide Regulation Service in the Day-Ahead Market and Real-Time Market and establish Regulation Service schedules, in MWs of Regulation Capacity, for each scheduled Regulation Supplier in the Day-Ahead and Real-Time Markets, as described in Section 15.3.2 of this Rate Schedule;

(f) Pay Suppliers for providing Regulation Service as described in ~~Sections 15.3.4, 15.3.5, 15.3.6 and 15.3.7 of~~ this Rate Schedule; and

(g) Monitor Suppliers' performance to ensure that they provide Regulation Service as required, as described in Section 15.3.3 of this Rate Schedule.

15.3.1.2 Each Supplier shall:

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(a) Register with the ISO the Regulation ~~e~~Capacity its resources are qualified to bid in the Regulation Services market;

(b) Provide the ISO with the Resource's Regulation Capacity Response Rate and the Resource's Regulation Movement Response Rate;

(c) Offer only Resources that are; (i) ISO-Committed Flexible or Self-Committed Flexible, provided however that Demand Side Resources shall be offered as ISO-Committed Flexible; within the dispatchable portion of their operating range, and; (ii) able to respond to AGC Base Point Signals sent by the ISO pursuant to the ISO Procedures, to provide Regulation Service;

(~~e~~d) Not use, contract to provide, or otherwise commit ~~Capability~~ Regulation Capacity that is selected by the ISO to provide Regulation Service to provide Energy or Operating Reserves to any party other than the ISO;

(~~d~~e) Pay any charges imposed under this Rate Schedule ~~including, if they are re-instituted the charges described in Section 15.3.8 of this Rate Schedule~~;

(~~e~~f) Ensure that all of its Resources that are selected to provide Regulation Service comply with Base Point Signals issued by the ISO at all times pursuant to the ISO Procedures; and ensure that all of its Resources that are selected to provide

Regulation Service comply with all criteria and ISO Procedures that apply to providing Regulation Service.

~~(f) Provide a regulation response rate that does not exceed the lowest normal energy response rate provided for the facility.~~

15.3.2 Selection of Suppliers in the Day-Ahead Market and the Real-Time Market

(a) The ISO shall select Suppliers~~,~~ in the Day-Ahead Market~~,~~ to provide Regulation Service for each hour in the following Dispatch Day and~~,~~ in the Real-Time Market to provide Regulation Service for each interval in the Dispatch Day, from those that have Bid to provide Regulation Service from Resources and that meet the qualification standards and criteria established in Section 15.3.1 of this Rate Schedule and in the ISO Procedures.

(b) ~~Real-Time Market: The ISO shall establish a Real-Time Market for Regulation Service and will establish a real-time Regulation Service market clearing price in each interval. During any period when the ISO suspends Resources' obligation to follow the AGC Base Point Signals sent to Regulation Service providers, pursuant to Section 15.3.9 of this Rate Schedule, the Real-Time Market clearing price for Regulation Service shall automatically be set at zero, which shall be the price used for real-time balancing and settlement purposes. The ISO shall select Suppliers for Regulation Service from those that have Bid to provide Regulation Service from Resources that meet the qualification standards and criteria established in the ISO Procedures.~~ In order to schedule Suppliers in the Day-Ahead Market to provide Regulation Service for each hour in the following

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Dispatch Day, the ISO shall use, as each Supplier's Regulation Service Bid price, the sum of: a) the Supplier's Day-Ahead Regulation Capacity Bid Price and b) the product of the Supplier's Day-Ahead Regulation Movement Bid Price and the applicable Regulation Movement Multiplier.

(c) In order to schedule Suppliers in the Real-Time Market to provide Regulation Service for each interval in the Dispatch Day the ISO shall use, as each Supplier's Regulation Service Bid price, the sum of: a) the Supplier's Real-Time Regulation Capacity Bid Price and b) the product of the Supplier's Real-Time Regulation Movement Bid Price and the applicable Regulation Movement Multiplier.

(d) The ISO shall establish separate Regulation Capacity ~~m~~Market ~~clearing p~~Prices ~~for Regulation Service~~ in the Day-Ahead Market and the Real-Time Market under Sections 15.3.4, 15.3.5 and 15.3.7 of this Rate Schedule and shall establish a Real-Time Regulation Movement Market Price under Section 15.3.5.3 of this Rate Schedule. The ISO shall also compute Regulation Revenue Adjustment Payments and Regulation Revenue Adjustment Charges under Section 15.3.6 of this Rate Schedule.

15.3.2.1 Bidding Process

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(a) A Supplier may submit a Bid in the Day- Ahead Market or the Real-Time Market to provide Regulation Service from eligible Resources, provided, however, that Bids submitted by Suppliers that are attempting to re-qualify to provide Regulation Service, after being disqualified pursuant to Section 15.3.3 of this Rate Schedule 3, may be limited by the ISO pursuant to ISO Procedures.

(b) 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.

(c) Each Bid shall contain the following information: (i) the maximum amount of ~~C~~capability (in MW) that the Resource is willing to provide ~~for~~as Regulation ~~Service~~ Capacity; (ii) ~~the Resource's regulation response rate (in MW/Minute), which must be sufficient to permit that Resource to provide the Regulation Service (in MW) offered within an RTD interval; provided, however, that the regulation response rate shall be less than or equal to its lowest normal energy response rate; (iii)~~ the the Supplier's ~~Availability~~ Bid Price (in $/MW) for Regulation Capacity; (iii) the Suppliers Bid Price (in $/MW) for Regulation Movement; and (iv) the physical location and name or designation of the Resource.

(d) Regulation Service Offers from Limited Energy Storage Resources: The ISO may reduce the real-time Regulation Service offer (in MWs) from a Limited Energy Storage Resource to account for the Energy storage capacity of such Resource.

15.3.3 Monitoring Regulation Service Performance and Performance Related Payment Adjustments

(a) The ISO shall establish (i) Resource performance measurement criteria; (ii) procedures to disqualify Suppliers whose Resources consistently fail to meet those criteria; and (iii) procedures to re-qualify disqualified Suppliers, which may include a requirement to first demonstrate acceptable performance for a time.

(b) The ISO shall establish and implement a Performance Tracking System to monitor the performance of Suppliers that provide Regulation Service. The ISO shall develop performance indices, which may vary with Control Performance, 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 Suppliers serving Load within the NYCA as set forth in the ISO Procedures.~~ The ISO shall use the~~se~~ values provided by the Performance Tracking System to adjust settlements for real-time Regulation ~~Service~~ Movement ~~schedules~~ pursuant to Section 15.3.5.5.1 and to compute a performance charge to apply to real-time Regulation Service providers pursuant to Section 15.3.5.5.2 of this Rate Schedule.

(c) Resources that consistently fail to perform adequately may be disqualified by the ISO, pursuant to ISO Procedures.

15.3.4 Regulation Service Settlements - Day-Ahead Market

15.3.4.1 Calculation of Day-Ahead Market ~~Clearing~~ Prices

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The ISO shall calculate a Day-Ahead ~~Market clearing p~~Price ~~for~~ Regulation ~~Service~~Capacity Market Price for each hour of the following day. The Day-Ahead Regulation Capacity Market ~~clearing p~~Price for each hour shall equal the Day-Ahead Shadow Price of the ISO's Regulation Service constraint for that hour, which shall be established under the ISO Procedures, minus the product of i) the Day-Ahead Regulation Movement Bid Price of the marginal Resource selected to provide Regulation Service; and ii) the applicable Regulation Movement Multiplier. Day-Ahead Shadow Prices will be calculated by the ISO's SCUC. Each hourly Day-Ahead Shadow Price shall equal the marginal Bid cost of scheduling Resources to

provide additional Regulation Service in that hour, including any impact on the Bid Production Cost of procuring Energy or Operating Reserves that would result from procuring an increment of Regulation Service in that hour, as calculated during the fifth SCUC pass described in Section 17.1.3 of Attachment B to this ISO Services Tariff. As a result, the Shadow Price shall include the Day-Ahead Regulation Service Bids of the marginal Resource selected to provide Regulation Service, plus any margins on the sale of Energy or Operating Reserves in the Day-Ahead Market that the Resource would forego if scheduling it to provide additional Regulation Service would lead to it being scheduled to provide less Energy or Operating Reserves (or the applicable price on the Regulation Service Demand Curve during shortage conditions). Shadow Prices consistent with the Regulation Service Demand Curves described in Section 15.3.7 of this Rate Schedule will ensure that Regulation Service is not scheduled by SCUC at a cost greater than the Regulation Service Demand Curve.

Each Supplier that is scheduled Day-Ahead to provide Regulation Service shall be paid the Day-Ahead Regulation Capacity Market ~~clearing p~~Price in each hour, multiplied by the amount of Regulation ~~Service~~Capacity that it is scheduled Day-Ahead to provide in that hour.

15.3.4.2 Other Day-Ahead Payments

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A Supplier that bids on behalf of a Generator that provides Regulation Service may be eligible for a Day-Ahead Bid Production Cost guarantee payment pursuant to Section 4.6.6 and Attachment C of this ISO Services Tariff.

No payments shall be made to any Supplier providing Regulation Service in excess of the amount of Regulation Service scheduled by the ISO in the Day-Ahead Market, except to the extent that a Supplier is directed to provide the excess amount by the ISO.

15.3.5 Regulation Service Settlements - Real-Time Market

15.3.5.1 Calculation of Real-Time Market ~~Clearing~~ Prices

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The ISO shall calculate a Real-Time Regulation Capacity Market ~~clearing p~~Price ~~for Regulation Service~~ and a Real-Time Regulation Movement Market Price for every RTD interval, except as noted in Section 15.3.9 of this Rate Schedule. Except when the circumstances described below in Section 15.3.5.2 apply, the Real-Time Regulation Capacity Market ~~clearing p~~Price for each interval shall equal the real-time Shadow Price for the ISO's Regulation Service constraint for that RTD interval, which shall be established under the ISO Procedures, minus the product of: i) the real-time Regulation Movement Bid of the marginal Resource selected to provide Real-Time Regulation Service; and ii) the applicable Regulation Movement Multiplier. Real-time Shadow Prices will be calculated by the ISO's RTD. Each Real-Time Shadow Price in each RTD interval shall equal the marginal Bid cost of scheduling Resources to provide additional Regulation Service in that interval, including any impact on the Bid Production Cost of procuring Energy or Operating Reserves that would result from procuring an increment of Regulation Service in that interval. As a result, the Shadow Price shall include the Real-Time Regulation Service Bids of the marginal Resource selected to provide Regulation Service, plus any margins on the sale of Energy or Operating Reserves in the Real-Time Market that Resource would forego if scheduling it to provide additional Regulation Service would lead to it being scheduled to provide less Energy or Operating Reserves (or the applicable price on the Regulation Service Demand Curve during shortage conditions). Shadow Prices consistent with the Regulation Service Demand Curves described in Section 15.3.7 of this Rate Schedule will ensure that Regulation Service is not scheduled at a cost greater than the Demand Curve indicates.

During any period when the ISO sets Resources' Regulation Service Schedules to zero, pursuant to Section 15.3.9 of this Rate Schedule, the Real-Time Regulation Capacity Market Price and the Real-Time Regulation Movement Market Price shall automatically be set to zero, which shall be the price used for real-time balancing and settlement purposes.

The ISO shall calculate a Real-Time Regulation Movement Market Price for every RTD interval. The Real-Time Regulation Movement Market Price shall be the Regulation Movement Bid of the marginal Resource selected to provide Regulation Service in that interval.

15.3.5.2 Calculation of Real-Time Market ~~Clearing~~ Prices for Regulation ~~Service~~ Capacity During EDRP/SCR Activations

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During any interval in which the ISO is using scarcity pricing rule "A" or "B" to calculate LBMPs under Sections 17.1.2.2 or 17.1.2.3 of Attachment B to this ISO Services Tariff, the real-time Regulation ~~Service~~ Capacity ~~m~~Market ~~clearing p~~Price may be recalculated in light of the ~~Availability~~ Regulation Capacity Bids of Suppliers and Lost Opportunity Costs of Generators scheduled to provide Regulation Service in real-time.

Specifically, when either scarcity pricing rule is applicable, the real-time Regulation ~~Service~~ Capacity ~~clearing m~~Market ~~p~~Price shall be set to the higher of: (i) the highest total ~~Availability~~ Regulation Capacity Bid and Lost Opportunity Cost of any Regulation Service provider scheduled by RTD; and (ii) the ~~m~~Market ~~clearing p~~Price~~s~~ calculated under Section 15.3.5.1 of this Rate Schedule.

15.3.5.3 Real-Time Regulation ~~Service~~ Capacity Balancing Payments, Regulation Movement Payments and Performance Charges

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Any deviation from a Supplier's Day-Ahead schedule to provide Regulation Service shall be settled pursuant to the following rules. In addition, Suppliers scheduled to provide Regulation Service in real-time shall be settled pursuant to the following rules.

(a) When the Supplier's real-time Regulation ~~Service~~ Capacity schedule~~, adjusted pursuant to Section 15.3.3(b) of this Rate Schedule,~~ is less than its Day-Ahead Regulation ~~Service~~ Capacity schedule, the Supplier shall pay a charge for the imbalance equal to the product of: (i) the Real-Time Regulation Capacity Market ~~clearing~~ Price ~~for Regulation Service~~; and (ii) the difference between the Supplier's Day-Ahead Regulation ~~Service~~ Capacity schedule and its real-time ~~adjusted~~ Regulation ~~Service~~ Capacity schedule.

(b) When the Supplier's real-time Regulation ~~Service~~Capacity schedule~~, adjusted pursuant to Section 15.3.3(b) of this Rate Schedule,~~ is greater than its Day-Ahead Regulation ~~Service~~Capacity schedule, the ISO shall pay the Supplier an amount to compensate it for the imbalance equal to the product of: (i) the Real-Time Regulation Capacity ~~m~~Market ~~clearing p~~Price ~~for Regulation Service~~; and (ii) the difference between the Supplier's real-time ~~adjusted~~ Regulation ~~Service~~Capacity schedule and its Day-Ahead Regulation ~~Service~~Capacity schedule.

(c) The ISO shall pay Suppliers with real-time Regulation Capacity schedules a real-time payment for Regulation Movement provided in each interval. The payment amount shall equal the product of: (a) the Real-Time Regulation Movement Market Price in that interval; (b) the Regulation Movement instructed during the

interval, and (c) the performance factor calculated for that Regulation Service provider in that interval pursuant to Section 15.3.5.5.1.

(d) The ISO shall assess a performance charge, pursuant to Section 15.3.5.5.2 to all Suppliers of Regulation Service with real-time Regulation Service schedules.

(e) No payments shall be made to any Supplier providing Regulation Service in excess of the amount of Regulation Service scheduled by the ISO in the Real Time Market, except to the extent that a Supplier is directed to provide the excess amount by the ISO.

15.3.5.4 Other Real-Time Regulation Service Payments

A Supplier that bids on behalf of a Regulation Service provider ~~Generator that provides Regulation Service~~ may be eligible for a real-time Bid Production Cost guarantee payment pursuant to Section 4.6.6 and Attachment C of this ISO Services Tariff.

A Supplier that bids on behalf of a Regulation Service provider ~~provides Regulation Service~~ may also be eligible for a Day-Ahead Margin Assurance Payment pursuant to Section 4.6.5 and Attachment J of this ISO Services Tariff.

15.3.5.5 ~~Payments and~~ Performance-Based Adjustment~~s~~ to Payments for Regulation Service Providers and Performance Based Charges

15.3.5.5.1 Performance-Based Adjustment to Payments for Regulation Service Providers

~~Each Supplier that is scheduled in real-time to provide Regulation Service shall be paid in accordance with the following formula.~~ The amount paid to each Supplier for providing

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Regulation ~~Service~~ Movement in each RTD interval, pursuant to Section 15.3.5.3 shall be reduced to reflect the Supplier's performance using a performance factor developed as follows~~:~~

~~Total Payment = Σ_i(Total Payment$_i$ * (s_i/3600))~~

~~Where:~~

~~Total Payment$_i$ = (DAMCPreg$_i$ x DARcap$_i$) + ((RTRcap$_i$ x K$_i$) - DARcap$_i$) x RTMCPreg$_i$~~

~~DAMCPreg$_i$ is the applicable market clearing price for Regulation Service (in $/MW), in the Day-Ahead Market, as established by the ISO pursuant to Section 15.3.4.1 of this Rate Schedule for the hour that includes RTD interval i;~~

~~DAR*cap*$_i$ is the Regulation Service Capability (in MW) offered by the Resource and selected by the ISO in the Day-Ahead Market in the hour that includes RTD interval i;~~

~~RTMCPreg$_i$ is the applicable market clearing price for Regulation Service (in $/MW), in the Real-Time Market as established by the ISO under Section 15.3.5.1 of this Rate Schedule in RTD interval i;~~

~~RTRcap$_i$ is the Regulation Service Capability (in MW) offered by the Resource and selected by the ISO in the Real-Time Market in RTD interval i;~~

~~s_i is the number of seconds in interval i; and~~

~~K$_i$ is a factor, with a value between 0.0 and 1.0 inclusive, derived from each Supplier's Regulation Service performance, as measured by the performance indices set forth in the ISO Procedures and determined~~ pursuant to the following equation:

$$K_{PIi} = (PI_i - PSF) / (1 - PSF)$$

Where:

K_{PIi} is the performance factor derived from the Regulation Service Performance index for the Resource for interval i;

PI_i is the performance index of the Resource for interval i, with a value between 0.0 and 1.0 inclusive, derived from each Supplier's Regulation Service performance, as measured by the performance indices set forth in the ISO Procedures; and

PSF is the payment scaling factor, established pursuant to ISO Procedures. The PSF shall be set between 0 and the minimum performance index required for payment ~~of~~for ~~Availability~~ Regulation Service ~~payments~~.

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The PSF is established to reflect the extent of ISO compliance with the standards established by NERC, NPCC or Good Utility Practice for Control Performance and System Security. The PSF is set initially at zero. Should the ISO's compliance with these measures deteriorate, in a manner that can be improved if regulation performance improves, the PSF will be increased. Resources providing Regulation Service will be required to increase their performance index to obtain the same total Regulation Service payment as they received during periods of good ISO performance, as measured by these standards. ~~The factor K_{PI} shall initially be set at 1.0 for Limited Energy Storage Resources. No payments shall be made to any Supplier providing Regulation Service in excess of the amount of Regulation Service scheduled by the ISO in the Real-Time Market, except to the extent that a Supplier is directed to provide the excess amount by the ISO.~~

15.3.5.5.2 Performance-Based Charge to Suppliers of Regulation Service

In addition, each Supplier that is scheduled in real-time to provide Regulation Service shall be assessed a performance charge for interval *i* in accordance with the following formula.

$$\text{Performance Charge}_i = (((1 - K_{PI_i}) * \text{RTRinccap}_i * -1.1 * \text{RTMPreg}_i) + (((1 - K_{PI_i}) * (\text{RTRcap}_i - \text{RTRinccap}_i) * -1.1) * \text{Max}(\text{DAMPreg}_i, \text{RTMPreg}_i))) * (s_i / 3600)$$

DAMPreg_i is the applicable Regulation Capacity Market Price (in $/MW), in the Day-Ahead Market, as established by the ISO pursuant to Section 15.3.4.1 of this Rate Schedule for the hour that includes RTD interval i;

DAMRcap_i is the Regulation Capacity (in MW) offered by the Resource and selected by the ISO in the Day-Ahead Market for the hour that includes interval i;

RTMPreg_i is the applicable Regulation Capacity Market Price (in $/MW), in the Real-Time Market as established by the ISO under Section 15.3.5.1 of this Rate Schedule in RTD interval i;

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$RTRcap_i$ is the Regulation Capacity (in MW) offered by the Resource and selected by the ISO in the Real-Time Market in RTD interval i;

$RTRinccap_i$ is the incremental Regulation Capacity (in MW) offered by the Resource and selected by the ISO in the Real-Time Market in the RTD interval i which is in excess of Regulation Capacity offered and selected by the ISO in the Day ahead market for the hour that includes interval i;

s_i is the number of seconds in interval i; and

K_{PIi} is the performance factor for the Resource for interval *i* as defined in Section 15.3.5.5.1.

15.3.6 Energy Settlement Rules for Generators Providing Regulation Service

15.3.6.1 Energy Settlements

A. For any interval in which a Generator that is not a Limited Energy Storage Resource is providing Regulation Service, it shall receive a settlement payment for Energy consistent with a real-time Energy injection equal to the lower of its actual generation or its AGC Base Point Signal. Demand Side Resources providing Regulation Service shall not receive a settlement payment for Energy.

B. For any hour in which a Limited Energy Storage Resource has injected or withdrawn Energy, pursuant to an ISO schedule to do so, it shall receive a settlement payment (if the amount calculated below is positive) or charge (if the amount calculated below is negative) for Energy pursuant to the following formula:

$$\text{Energy Settlement}_h = \text{Net MWHR}_h * \text{LBMP}_h$$

Where:

Net MWHR_h = the amount of Energy injected by the Limited Energy Storage Resource in hour h minus the amount of Energy withdrawn by that Limited Energy Storage Resource in hour h

LBMP_h = the time-weighted average LBMP in hour h calculated for the location of that Limited Energy Storage Resource

15.3.6.2 Additional Payments/Charges ~~When AGC Base Point Signals Exceed RTD Base Point Signals~~

For any interval in which a Generator that is providing Regulation Service receives an AGC Base Point Signal that ~~is higher than~~differs from its RTD Base Point Signal, it shall receive or pay a Regulation Revenue Adjustment Payment ("RRAP") or Regulation Revenue Adjustment Charge ("RRAC") calculated under the terms of this subsection, provided however no RRAP shall be payable and no RRAC shall be charged to a Limited Energy Storage Resource.

15.3.6.2.1 Additional Payments/Charges When AGC Base Point Signals Exceed RTD Base Point Signals

For any interval in which a Generator that is providing Regulation Service receives an AGC Base Point Signal that is higher than its RTD Base Point Signal, it shall receive or pay a RRAP or RRAC calculated under the terms of this subsection. If the Energy Bid Price of such a Generator is higher than the LBMP at its location in that interval, the Generator shall receive a RRAP. Conversely, for any interval in which such a Generator's Energy Bid Price is lower than the LBMP at is location at that interval, the Generator shall be assessed a RRAC. RRAPs and RRACs shall be calculated using the following formula:

$$\text{Payment/Charge} = \int_{\text{RTD Base Point Signal}}^{\max(\text{RTD Base Point Signal},\min(\text{AGC Base Point Signal},\text{Actual Output}))} [\text{Bid} - \text{LBMP}] \quad * \text{ s/3600}$$

Where:

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s is the number of seconds in the RTD interval;

If the result of the calculation is positive then the Generator shall receive a RRAP. If it is negative then the Generator shall be subject to a RRAC. For purposes of applying this formula, whenever the Generator's actual Bid exceeds the applicable LBMP the "Bid" term shall be set at a level equal to the lesser of the Generator's actual Bid or its reference Bid plus $100/MWh. Demand Side Resources providing Regulation Service shall not be eligible for a RRAP and not liable for an RRAC.

15.3.6.~~3~~2.2 Additional Charges/Payments When AGC Base Point Signals Are Lower than RTD Base Point Signals

For any interval in which a Generator that is providing Regulation Service receives an AGC Base Point Signal that is lower than its RTD Base Point Signal, it shall receive or pay a RRAP or RRAC calculated under the terms of this subsection. If the Energy Bid Price of such a Generator is higher than the LBMP at its location in that interval, the Generator shall be assessed a RRAC. Conversely, for any interval in which such a Generator's Energy Bid Price is lower than the LBMP at its location in that interval, the Generator shall receive a RRAP. RRAPs and RRACs shall be calculated using the following formula:

$$\text{Payment/Charge} = \int_{\min(\text{RTD Base Point Signal}, \max(\text{AGC Base Point Signal}, \text{Actual Output}))}^{\text{RTD Base Point Signal}} -[\text{Bid} - \text{LBMP}] \quad * s/3600$$

Where:

s is the number of seconds in the RTD interval;

If the result of the calculation is positive then the Generator shall receive a RRAP. If it is negative then the Generator shall be subject to a RRAC. For purposes of this formula, whenever

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the Generator's actual Bid is lower than the applicable LBMP the "Bid" term shall be set at a level equal to the higher of the Generator's actual Bid or its reference Bid minus $100/MWh.

Demand Side Resources providing Regulation Service shall not be eligible for a RRAP and not liable for an RRAC.

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15.3.7 Regulation Service Demand Curve

The ISO shall establish a Regulation Service Demand Curve that will apply to both the Day-Ahead and real-time Regulation ~~Service markets~~Capacity payments. The ~~m~~Regulation Capacity Market ~~clearing p~~Prices ~~for Regulation Service~~ calculated pursuant to Sections 15.3.4.1 and 15.3.5.1 of this Rate Schedule shall take account of the demand curve established in this Section so that Regulation Capacity is not ~~purchased~~ scheduled by SCUC, ~~or~~ RTC, or RTD at a cost higher than the demand curve indicates should be paid in the relevant market.

The ISO shall establish and post a target level of Regulation Service for each hour, which will be the number of MW of Regulation Service that the ISO would seek to maintain as its Regulation Service requirement in that hour. The ISO will then define a Regulation Service demand curve for that hour as follows:

For quantities of Regulation Service that are less than or equal to the target level of Regulation Service minus 80 MW, the price on the Regulation Service demand curve shall be $400/MW.

For quantities of Regulation Service that are less than or equal to the target level of Regulation Service minus 25 MW but that exceed the target level of Regulation Service minus 80 MW, the price on the Regulation Service demand curve shall be $180/MW.

For quantities of Regulation Service that are less than or equal to the target level of Regulation Service but that exceed the target level of Regulation Service minus 25 MW, the price on the Regulation Service demand curve shall be $80/MW.

For all other quantities, the price on the Regulation Service demand curve shall be $0/MW. However, the ISO shall not schedule more Regulation Service than the target level for the requirement for that hour.

In order to respond to operational or reliability problems that arise in real-time, the ISO may procure Regulation Service at a quantity and/or price point different than those specified above. The ISO shall post a notice of any such purchase as soon as reasonably possible and shall report on the reasons for such purchases at the next meeting of its Business Issues Committee. The ISO shall also immediately initiate an investigation to determine whether it is necessary to modify the quantity and price points specified above to avoid future operational or reliability problems. The ISO will consult with its Market Monitoring Unit when it conducts this investigation.

If the ISO determines that it is necessary to modify the quantity and/or price points specified above in order to avoid future operational or reliability problems it may temporarily modify them for a period of up to ninety days. If circumstances reasonably allow, the ISO will consult with its Market Monitoring Unit, the Business Issues Committee, the Commission, and the PSC before implementing any such modification. In all circumstances, the ISO will consult with those entities as soon as reasonably possible after implementing a temporary modification.

Not later than 90 days after the implementation of the Regulation Service Demand Curve the ISO, in consultation with its Advisor, shall conduct an initial review in accordance with the

ISO Procedures. The scope of the review shall be upward or downward in order to optimize the economic efficiency of any, or all, the ISO-Administered Markets. The ISO and the Market Advisor shall perform additional quarterly reviews, subject to the same scope requirement, during the remainder of the first year that this Section 15.3.7 is in effect. After the first year, the ISO shall perform periodic reviews, subject to the same scope requirement, and the Market Monitoring Unit shall be given the opportunity to review and comment on the ISO's periodic reviews of the Regulation Service Demand Curve.

The responsibilities of the Market Monitoring Unit that are addressed in the above section of Rate Schedule 3 to the Services Tariff are also addressed in Section 30.4.6.4.1 of Attachment O.

~~**15.3.8 Reinstating Performance Charges**~~

~~The ISO will monitor, on a real-time hourly or daily basis, as appropriate, its compliance with the standards established by NERC and NPCC and with the standards of Good Utility Practice for Control Performance, area control error, disturbance control standards, reserve pickup performance and system security. Should it appear to the ISO that degradation in performance threatens compliance with one or more of the established standards for these criteria or compromises reliability, and that reinstating the performance charges that were originally part of the ISO's market design, would assist in improving compliance with established standards for these criteria, or would assist in re-establishing reliability, the ISO may require Suppliers of Regulation Service, as well as Suppliers not providing Regulation Service, to pay a performance charge. Any reinstatement of Regulation penalties pursuant to this Section shall not override previous Commission-approved settlement agreements that exempt a particular unit from such penalties. The ISO shall provide notice of its decision to reinstate performance charges to the~~

~~Commission, to each Customer and to the Operating Committee and the Business Issues Committee no less than seven days before it re-institutes the performance charges.~~

~~If the ISO determines that performance charges are necessary, Suppliers of Regulation Service shall pay a performance charge per interval to the ISO as follows:~~

~~Performance Charge = Energy Deviation x MCP_{reg} x (Length of Interval/60 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 RTD interval; and~~

~~MCP_{reg} is the market clearing price ($/MW) which applies to the RTD interval for this Service in the Real-Time Market or the Day-Ahead Market, if appropriate.~~

~~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.~~

15.3.9 Temporary Suspension of Regulation Service Markets During Reserve Pickups and Maximum Generation

During any period in which the ISO has activated its RTD-CAM software and called for a "large event" or "small event" reserve or maximum generation pickup, as described in Article 4.4.4.1 of this ISO Services Tariff, the ISO will set all Regulation Service schedules to zero ~~suspend Generators' (other than LESRs') obligation to follow the AGC Base Point Signals sent to Regulation Service providers, freeing them to provide Energy and will suspend the real-time Regulation Service market.~~ The ISO will ~~not procure any Regulation Service and will~~ establish ~~a~~ real-time Regulation ~~Service m~~Market ~~clearing p~~Prices for Regulation Capacity and Regulation Movement of zero for settlement and balancing purposes. The ISO will ~~resume sending AGC Base Point Signals and~~ restore ~~the~~ real-time Regulation Service ~~market~~schedules as soon as possible after the end of the reserve or maximum generation pickup.