# Attachment II

## 2.1 Definitions - A

**Actual Demand Reductions:** Demand Reductions that are measured using a revenue-quality real-time meter.

**Actual Energy Injections:** Energy injections which are measured using a revenue-quality real-time meter.

**Actual Energy Withdrawals:** Energy withdrawals which are either: (1) measured with a revenue-quality real-time meter; (2) assessed (in the case of Load Serving Entities ("LSEs") serving retail customers where withdrawals are not measured by revenue-quality real-time meters) on the basis provided for in a Transmission Owner's retail access program; or (3) calculated (in the case of wholesale customers where withdrawals are not measured by revenue-quality real-time meters), until such time as revenue - quality real-time metering is available on a basis agreed upon by the unmetered wholesale customers. For purposes of the allocation of the ISO annual budgeted costs and the annual FERC fee pursuant to Rate Schedule 1 of the ISO OATT, withdrawals shall also include the absolute value of negative withdrawals by Load for behind the meter generation. For purposes of assessing TSC and NTAC, Actual Energy Withdrawals shall include the absolute value of negative injections by Energy Storage Resources in accordance with Section 2.7 of the OATT.

**Adjusted Actual Load:** Actual Load adjusted to reflect: (i) Load relief measures such as voltage reduction and Load Shedding; (ii) Load reductions provided by Demand Side Resources/Aggregations; (iii) normalized design weather conditions; (iv) Station Power delivered that is not being self supplied pursuant to Section 4.7 of the ISO Services Tariff; and (v) adjustments for Special Case Resources and EDRP Resources.

**Adjusted DMGC:** The value, in MW, of a BTM:NG Resource's capability in a Capability Period, as calculated pursuant to Section 5.12.6.1.1 of this Services Tariff.

**Adjusted Host Load ("AHL"):** The value, in MW, of a BTM:NG Resource's Load calculated pursuant to Section 5.12.6.1.2 of this Services Tariff for the purposes of determining the Resource's Capacity.

**Adjusted Installed Capacity:** The amount of installed Capacity a Resource may offer taking into account the Resource's applicable Duration Adjustment Factor.

**Advance Reservation:** (1) A reservation of transmission service over the Cross-Sound Scheduled Line that is obtained in accordance with the applicable terms of Schedule 18 and the Schedule 18 Implementation Rule of the ISO New England Inc. Transmission, Markets and Services Tariff, or in accordance with any successors thereto; or (2) A right to schedule transmission service over the Neptune Scheduled Line that is obtained in accordance with the rules and procedures established pursuant to Section 38 of the PJM Interconnection, L.L.C. Open Access Transmission Tariff and set forth in a separate service schedule under the PJM Interconnection, L.L.C. Open Access Transmission Tariff; or (3) A right to schedule transmission service over the Linden VFT Scheduled Line that is obtained in accordance with the rules and procedures established pursuant to Section 38 of the PJM Interconnection, L.L.C. Open

Access Transmission Tariff and set forth in a separate service schedule under the PJM Interconnection, L.L.C. Open Access Transmission Tariff; or (4) A right to schedule transmission service over the HTP Scheduled Line that is obtained in accordance with the rules and procedures established pursuant to Section 38 of the PJM Interconnection, L.L.C. Open Access Transmission Tariff and set forth in a separate service schedule under the PJM Interconnection, L.L.C. Open Access Transmission Tariff.

**Adverse Conditions:** Those conditions of the natural or man-made environment that threaten the adequate reliability of the NYS Power System, including, but not limited to, thunderstorms, hurricanes, tornadoes, solar magnetic flares and terrorist activities.

**Affiliate:** With respect to a person or entity, any individual, corporation, partnership, firm, joint venture, association, joint-stock company, trust or unincorporated organization, directly or indirectly controlling, controlled by, or under common control with, such person or entity. The term "Control" shall mean the possession, directly or indirectly, of the power to direct the management or policies of a person or an entity. A voting interest of ten percent or more shall create a rebuttable presumption of control.

**Aggregation:** A Resource, comprised of two or more individual Generators, Demand Side Resources, or Distributed Energy Resources, or one or more individual Demand Side Resources, at separate points of interconnection and that are grouped and dispatched as a single unit by the ISO, and for which Energy injections, withdrawals and Demand Reductions are modeled at a single Transmission Node. *See*, Services Tariff Sec. 4.1.10.

**Aggregator:** A Supplier that offers Capacity, Energy, and/or Ancillary Services for an Aggregation.

**Ancillary Services:** Services necessary to support the transmission of Energy from Generators to Loads, while maintaining reliable operation of the NYS Power System in accordance with Good Utility Practice and Reliability Rules. Ancillary Services include Scheduling, System Control and Dispatch Service; Reactive Supply and Voltage Support Service (or "Voltage Support Service"); Regulation Service; Energy Imbalance Service; Operating Reserve Service (including Spinning Reserve, 10-Minute Non-Synchronized Reserves and 30-Minute Reserves); and Black Start Capability.

**Application:** A request to provide or receive service pursuant to the provisions of the ISO Services Tariff, that includes all information reasonably requested by the ISO.

**Automatic Generation Control ("AGC"):** The **automatic** regulation of the power output of electric Generators and Aggregations within a prescribed range in response to a change in system frequency, or tie-line loading, to maintain system frequency or scheduled interchange with other areas within predetermined limits.

**Available Generating Capacity:** Generating Capacity that is on line to serve Load and/or provide Ancillary Services, or is capable of initiating start-up for the purpose of serving Transmission Customers or providing Ancillary Services, within thirty (30) minutes.

**Available Operating Capacity:** For purposes of determining a Scarcity Reserve Requirement, the capability of all Suppliers that are eligible to provide Operating Reserves and have submitted Energy Bids in the Real-Time Market to provide Energy in greater than 30 minutes but less than or equal to 60 minutes; provided, however, that this value shall not include any quantity of Energy and Operating Reserves scheduled to be provided by all such Suppliers. The Available Operating Capacity value (in MW) shall be calculated by the RTD software for each normal RTD run. For purposes of calculating a Scarcity Reserve Requirement in accordance with Section 15.4.6.2 of Rate Schedule 4 of this ISO Services Tariff, each RTD run shall utilize the value of Available Operating Capacity calculated during the immediately preceding normal RTD run and each RTC run shall utilize the value of Available Operating Capacity calculated during the most recently-completed normal RTD run prior to the RTC run.

**Availability:** A measure of time that a Generator, Aggregation, transmission line, interconnection or other facility is capable of providing service.

**Average Coincident Host Load ("ACHL"):** The value calculated for a Capability Year in accordance with Section 5.12.6.1.2.1 of this Tariff. The ACHL shall account for weather normalization and Load growth.

**Average Coincident Load ("ACL")**: The value in each Capability Period calculated for each Special Case Resource, except those that are eligible to report a Provisional Average Coincident Load, that is equal to the average of the SCR's metered hourly Load that is supplied by the NYS Transmission System and/or the distribution system during the Capability Period SCR Load Zone Peak Hours applicable to such SCR, and computed and reported in accordance with Section 5.12.11.1.1 of this Services Tariff and ISO Procedures. Any Load supported by generation produced from a Local Generator, other behind-the-meter generator, or other supply source located behind the SCR's meter operating during the Capability Period SCR Load Zone Peak Hours may not be included in the SCR's metered Load values reported for the ACL.

## 2.2 Definitions - B

**Back-Up Operation:** The procedures for operating the NYCA in a safe and reliable manner when the ISO's normal communication or computer systems are not fully functional as set forth in Section 5.3 of this ISO Services Tariff and Article 2.12 of the ISO OATT.

**Balance-of-Period Auction:** As defined in the ISO OATT.

**Base Point Signals:** Electronic signals sent from the ISO and ultimately received by Generators or Demand Side Resources/Aggregations specifying the scheduled MW setpoint for the Generator or Aggregation. Real-Time Dispatch ("RTD") Base Point Signals are typically sent to Generators or Demand Side Resources/Aggregations on a nominal five (5) minute basis. AGC Base Point Signals are typically sent to Generators or Demand Side Resources/Aggregations on a nominal six (6) second basis.

**Basis Amount:** The amount owed to the ISO for purchases of Energy and Ancillary Services excluding External Transactions in the Basis Month, after applying the Price Adjustment, as further adjusted by the ISO to reflect material changes in the extent of the Customer's participation in the ISO-administered Energy and Ancillary Services markets.

**Basis Month:** The month during the Prior Equivalent Capability Period in which the amount owed by the Customer for purchases of Energy and Ancillary Services excluding External Transactions, after applying the Price Adjustment, was greatest.

**Beginning Energy Level:** For Energy Storage Resources or Aggregations comprised entirely of Energy Storage Resources, the total amount of Energy stored by the Resource at the beginning of a market interval. The Beginning Energy Level shall be estimated for the Day-Ahead Market. An ISO-Managed Energy Storage Resource or ISO-Managed Aggregation comprised entirely of Energy Storage Resources shall submit an estimated Beginning Energy Level on each day that it submits a Day-Ahead Market Bid. The Beginning Energy Level shall be determined by 6-second telemetry data in real-time. If the ISO does not receive real-time telemetry from the Resource due to equipment failure or other reason, the ISO will use the last valid Energy Level value as modified to reflect subsequent schedules.

**Behind-the-Meter Net Generation Resource ("BTM:NG Resource"):** A facility within a defined electrical boundary comprised of a Generator and a Host Load located at a single point identifier (PTID), where the Generator routinely serves, and is assigned to, the Host Load and has excess generation capability after serving that Host Load. The Generator of the BTM:NG Resource must be electrically located in the NYCA, have a minimum nameplate rating of 2 MW and a minimum net injection to the NYS Transmission System or distribution system of 1 MW. The Host Load of the BTM:NG Resource must also have a minimum ACHL of 1 MW. A facility that otherwise meets these eligibility requirements, but either (i) is an Intermittent Power Resource or Energy Storage Resource, (ii) whose Host Load consists only of Station Power, or (iii) has made an election pursuant to Section 5.12.1.12, does not qualify to be a BTM:NG Resource. BTM:NG Resources cannot simultaneously participate as a BTM:NG Resource and in any ISO administered demand response programs.

**Bid/Post System:** An electronic information system used to allow the posting of proposed transmission schedules and Bids for Energy and Ancillary Services by Market Participants for use by the ISO and to allow the ISO to post LBMPs and schedules.

**Bid:** Offer to sell or bid to purchase Energy, Demand Reductions or Transmission Congestion Contracts and an offer to sell Ancillary Services at a specified price that is duly submitted to the ISO pursuant to ISO Procedures. Bid shall mean a mitigated Bid where appropriate.

**Bid Price:** The price at which the Customer offering the Bid is willing to provide the product or service, or is willing to pay to receive such product or service, as applicable. In the case of a CTS Interface Bid, the Bid Price is a dollar value that indicates the bidder's willingness to purchase Energy at a CTS Source and sell it at a CTS Sink across a CTS Enabled Interface if, at the time of scheduling, the forecasted CTS Sink Price minus the forecasted CTS Source Price is greater than, or equal to, the dollar value specified in the Bid.

**Bid Production Cost:** Total cost of the Generators and Aggregations required to meet Load and reliability Constraints based upon Bids corresponding to the usual measures of Generator or Aggregation production cost (e.g., running cost, Minimum Generation Bid, and Start-Up Bid).

**Bidder:** An entity that bids to purchase Unforced Capacity in an Installed Capacity auction.

**Bidding Requirement:** The credit requirement for bidding in certain ISO-administered auctions, calculated in accordance with Section 26.4.3 of Attachment K to this Services Tariff.

**Bilateral Transaction:** A Transaction between two or more parties for the purchase and/or sale of Capacity or Energy other than those in the ISO Administered Markets. A request to schedule a Bilateral Transaction in the Energy Market shall be considered a request to schedule Point-to-Point Transmission Service.

**Billing Period:** The period of time designated in Sections 7.2.2.1, 7.2.3.1, or 7.2.3.2 of this ISO Services Tariff over which the ISO will aggregate and settle a charge or a payment for services furnished under this ISO Services Tariff or the ISO OATT.

## 2.3 Definitions - C

**Capability Period:** Six-month periods which are established as follows: (i) from May 1 through October 31 of each year ("Summer Capability Period"); and (ii) from November 1 of each year through April 30 of the following year ("Winter Capability Period").

**Capability Period Auction:** An auction conducted no later than thirty (30) days prior to the start of each Capability Period in which Unforced Capacity may be purchased and sold in a six-month strip.

**Capability Period SCR Load Zone Peak Hours:** The top forty (40) coincident peak hours that, prior to the Summer 2014 Capability Period include hour beginning thirteen through hour beginning eighteen and beginning with the Summer 2014 Capability Period include hour beginning eleven through hour beginning nineteen. The Capability Period SCR Load Zone Peak Hours shall be determined by the NYISO from the Prior Equivalent Capability Period and shall be used by RIPs to report ACL values for the purpose of SCR enrollment. For a SCR enrolled with a Provisional ACL that requires verification data to be reported at the end of the Capability Period in which the SCR was enrolled, the Capability Period SCR Load Zone Peak Hours shall be determined from the Capability Period in which the SCR was enrolled. Such hours shall not include (i) hours in which Special Case Resources located in the specific Load Zone were called by the ISO to respond to a reliability event or test and (ii) hours for which the Emergency Demand Response Program resources were deployed by the ISO in each specific Load Zone. In addition, beginning with the Summer 2014 Capability Period, the NYISO shall not include, in descending rank order of NYCA Load up to a maximum of eight hours per Capability Period, a) the hour before the start time of a reliability event or performance test, in which SCRs located in the specific Load Zone were called by the ISO to respond to a reliability event or performance test, or b) the hour immediately following the end time of such reliability event or performance test.

**Capability Year:** A Summer Capability Period, followed by a Winter Capability Period (*i.e.*, May 1 through April 30).

**Capacity:** The capability to generate or transmit electrical power, or the ability to control demand at the direction of the ISO, measured in megawatts ("MW").

**Capacity Accreditation Factor:** The factors, set annually by the ISO in accordance with Section 5.12.14.3 and ISO Procedures, that reflect the marginal reliability contribution of the ICAP Suppliers within each Capacity Accreditation Resource Class toward meeting NYSRC resource adequacy requirements for the upcoming Capability Year. Capacity Accreditation Factors for each Capacity Accreditation Resource Class will be determined by the ISO for Rest of State, G-J Locality (excluding Load Zone J), NYC Locality, and Long Island Locality, in accordance with Section 5.12.14.3 and ISO Procedures. Capacity Accreditation Factors are applicable to all Resources and/or Aggregations within each Capacity Accreditation Resource Class that has been established in accordance with ISO Procedures.

**Capacity Accreditation Resource Class:** A defined set of Resources and/or Aggregations, as identified in accordance with ISO Procedures, with similar technologies and/or operating characteristics which are expected to have similar marginal reliability contributions toward meeting NYSRC resource adequacy requirements for the upcoming Capability Year. Each Capacity Accreditation Resource Class will be evaluated through the annual review detailed in Section 5.12.14.3. Each Installed Capacity Supplier will be assigned a Capacity Accreditation Resource Class.

**Capacity Limited Resource:** A Resource that is constrained in its ability to supply Energy above its Normal Upper Operating Limit by operational or plant configuration characteristics. Capacity Limited Resources must register their Capacity limiting characteristics with, and justify them to, the ISO consistent with ISO Procedures. Capacity Limited Resources may submit a schedule indicating that their Normal Upper Operating Limit is a function depending on one or more variables, such as temperature or pondage levels, in which case the Normal Upper Operating Limit applicable at any time shall be determined by reference to that schedule.

**Capacity Reservation Cap:** As defined in the ISO OATT.

**CARL Data:** Control Area Resource and Load ("CARL") data submitted by Control Area System Resources to the ISO.

**Centralized Transmission Congestion Contracts ("TCC") Auction ("Auction"):** As defined in the ISO OATT.

**Co-located Storage Resources ("CSR"):** A wind or solar Intermittent Power Resource and an Energy Storage Resource that: (a) are both located behind a single Point of Injection (as defined in Section 1.16 of the OATT); (b) participate in the ISO Administered Markets as two distinct Generators; and (c) share a set of CSR Scheduling Limits. Resources that serve a Host Load may not participate in the ISO-Administered Markets as components of a CSR.

**Code of Conduct:** The rules, procedures and restrictions concerning the conduct of the ISO directors and employees, contained in Attachment F to the ISO Open Access Transmission Tariff.

**Commenced Repair:** A determination by the ISO that a Market Participant with a Generator i) has decided to pursue the repair of its Generator, and based on the ISO's technical/engineering evaluation ii) has a Repair Plan for the Generator that is consistent with a Credible Repair Plan, and iii) has made appropriate progress in pursuing the repair of its Generator when measured against the milestones of a Credible Repair Plan.

**Commission ("FERC"):** The Federal Energy Regulatory Commission, or any successor agency.

**Compensable Overgeneration:** A quantity of Energy provided over a given RTD interval in which a Supplier has offered Energy that exceeds the Real-Time Scheduled Energy established by the ISO for that Supplier and for which the Supplier may be paid pursuant to ISO Procedures.

For Suppliers not covered by other provisions of this Section and Intermittent Power Resources depending on wind or solar energy as their fuel for which the ISO has imposed a Wind and Solar Output Limit in the given RTD interval, Compensable Overgeneration shall initially equal three percent ( 3%) of the Supplier's Normal Upper Operating Limit which may be modified by the ISO if necessary to maintain good Control Performance.

For a Generator or Aggregation: (i) which is operating in Start-Up or Shutdown Periods, or Testing Periods; or (ii) which is a Limited Control Run of River Hydro Resource that has offered its Energy to the ISO in a given interval not using the ISO-committed Flexible or Self-Committed Flexible bid mode; or (iii) which is an Intermittent Power Resource that depends on landfill gas for its fuel and has offered its Energy to the ISO in a given interval not using the ISO-committed Flexible or Self-Committed Flexible bid mode; or (iv) which is an Intermittent Power Resource that depends on wind or solar energy for its fuel, Compensable Overgeneration shall mean all Energy actually injected by the Generator or Aggregation that exceeds the Real-Time Scheduled Energy established by the ISO for that Generator or Aggregation; provided however, this definition of Compensable Overgeneration shall not apply to an Intermittent Power Resource depending on wind or solar energy as its fuel for any interval for which the ISO has imposed a Wind and Solar Output Limit. For a Generator or Aggregation operating in intervals when it has been designated as operating Out of Merit at the request of a Transmission Owner or the ISO, Compensable Overgeneration shall mean all Energy actually provided by the Generator or Aggregation that exceeds the Real-Time Scheduled Energy up to the Energy level directed by the Transmission Owner or the ISO.

For a Generator comprised of a group of generating units at a single location, which grouped generating units are separately committed and dispatched by the ISO, and for which Energy injections are measured at a single location, Compensable Overgeneration shall mean that quantity of Energy injected by the Generator, during the period when one of its grouped generating units is operating in a Start-Up or Shutdown Period, that exceeds the Real-Time Scheduled Energy Injection established by the ISO for that period, for that Generator, and for which the Generator may be paid pursuant to ISO Procedures.

**Completed Application:** An Application that satisfies all of the information and other requirements for service under the ISO Services Tariff.

**Confidential Information:** Information and/or data that has been designated by a Customer to be proprietary and confidential, provided that such designation is consistent with the ISO Procedures, the ISO Services Tariff, and the ISO Code of Conduct.

**Congestion:** A characteristic of the transmission system produced by a constraint on the optimum economic operation of the power system, such that the marginal price of Energy to serve the next increment of Load, exclusive of losses, at different locations on the transmission system is unequal.

**Congestion Component:** The component of the LBMP measured at a location or the Transmission Usage Charge between two locations that is attributable to the cost of transmission Congestion as is more completely defined in Attachment B of the Services Tariff.

**Congestion Rent**: As defined in the ISO OATT.

**Congestion Rent Shortfall**:  As defined in the ISO OATT.

**Constraint**:  An upper or lower limit placed on a variable or set of variables that are used by the ISO in its SCUC, RTC, or RTD programs to control and/or facilitate the operation of the NYS Transmission System.

**Contingency:**  An actual or potential unexpected failure or outage of a system component, such as a Generator, transmission line, circuit breaker, switch or other electrical element.  A Contingency also may include multiple components, which are related by situations leading to simultaneous component outages.

**Control Area:**  An electric system or combination of electric power systems to which a common Automatic Generation Control scheme is applied in order to: (1) match, at all times, the power output of the Generators and Aggregations within the electric power system(s) and Capacity and Energy purchased from entities outside the electric power system(s), with the Load within the electric power system(s); (2) maintain scheduled interchange with other Control Areas, within the limits of Good Utility Practice; (3) maintain the frequency of the electric power system(s) within reasonable limits in accordance with Good Utility Practice; and (4) provide sufficient Capacity to maintain Operating Reserves in accordance with Good Utility Practice.

**Control Area System Resource:**  A set of Resources owned or controlled by an entity within a Control Area that also is the operator of such Control Area.  Entities supplying Unforced Capacity using Control Area System Resources will not designate particular Resources as the suppliers of Unforced Capacity.

**Control Performance:**  A standard for measuring the degree to which a Control Area is providing Regulation Service in conformance with NERC requirements.

**Controllable Transmission:**  Any Transmission facility over which power-flow can be directly controlled by power-flow control devices without having to re-dispatch generation.

**Credible Repair Plan:**  A Repair Plan that meets the requirements described in Section 5.18.1.4 of this Services Tariff and in ISO Procedures**.**

**Credit Assessment:**  An assessment of a Customer's creditworthiness, conducted by the ISO in accordance with Section 26.5.3 of Attachment K to this Services Tariff.

**Critical Electric System Infrastructure Load:**  Load that is critical to maintaining the reliable operation of electric system infrastructure, including, without limitation, Load that is (i) necessary to maintain the delivery of natural gas, fuel oil, and other fuels used by Generators (including Local Generators) to generate electricity, (ii) likely to impact the supply of natural gas, fuel oil, and other fuel to Generators, or (iii) otherwise likely to impact Generator operation. Critical Electric System Infrastructure Load does not include on-site Load that is consumed for ancillary purposes unless such Load is necessary for compliance with parts (i) – (iii) of this definition.

**Cross-Sound Scheduled Line:** A transmission facility that interconnects the NYCA to the New England Control Area at Shoreham, New York and terminates near New Haven, Connecticut.

**CSR Scheduling Limits:** The CSR injection Scheduling Limit is used to determine the combined Regulation Capacity, Operating Reserve and Energy injection schedules for, and the maximum permitted net injection by a CSR's Generators. The CSR withdrawal Scheduling Limit sets is used to determine the combined Regulation Capacity and Energy withdrawal schedules for, and the maximum permitted net withdrawal by a CSR's Generators.

The Market Participant that is responsible for submitting Bids for a set of CSR Generators shall submit a CSR injection Scheduling Limit and a CSR withdrawal Scheduling Limit with the hourly Day-Ahead and Real-Time Market Bids it submits for each of the CSR Generators. The CSR Scheduling Limit values that the Market Participant submits must reflect the physical capability to inject or withdraw Energy at the Point of Injection/Point of Withdrawal.

To address the real-time variability of Energy deliveries from wind and solar Intermittent Power Resources that participate as Co-located Storage Resources, when the participating Energy Storage Resource has a non-zero Regulation and/or Operating Reserves schedule or is dispatched to inject Energy, and the sum of the participating Energy Storage Resource's and the participating wind or solar Intermittent Power Resource's Energy, Regulation Service and Operating Reserves Schedules is greater than or equal to a specified percentage of the CSR injection Scheduling Limit, then the ISO will issue a Wind and Solar Output Limit to the Intermittent Power Resource to not exceed its Base Point Signal. The specified percentage that is ordinarily used will be posted on the ISO's website.

**CTS Enabled Interface:** An External Interface at which the ISO has authorized the use of Coordinated Transaction Scheduling ("CTS") market rules and which includes a CTS Enabled Proxy Generator Bus for New York and a CTS Enabled Proxy Generator Bus for the neighboring Control Area.

**CTS Enabled Proxy Generator Bus:** A Proxy Generator Bus at which the ISO either requires or permits the use of CTS Interface Bids for Import and Export Transactions in the Real-Time Market and requires the use of Decremental Bids for Wheels Through in the Real-Time Market. A CTS Enabled Proxy Generator Bus at which the ISO permits CTS Interface Bids will also permit Decremental and Sink Price Cap Bids.

**CTS Interface Bid:** A Real-Time Bid provided by an entity engaged in an External Transaction at a CTS Enabled Interface. CTS Interface Bids shall include a MW amount, a direction indicating whether the proposed Transaction is to Import Energy to, or Export Energy from, the New York Control Area, and a Bid Price.

**CTS Sink:** Representation of the location(s) within a Control Area where energy associated with a CTS Interface Bid is withdrawn. The NYCA CTS Sinks are Proxy Generator Buses.

**CTS Sink Price:** The price at a CTS Sink.

**CTS Source:** Representation of the location(s) within a Control Area where energy associated with a CTS Interface Bid is injected. The NYCA CTS Sources are Proxy Generator Buses.

**CTS Source Price:** The price at a CTS Source.

**Curtailment or Curtail**: A reduction in Transmission Service in response to a transmission Capacity shortage as a result of system reliability conditions.

**Curtailment Customer Aggregator:** A Curtailment Services Provider that produces real-time verified reductions in NYCA load of at least 100 kW through contracts with retail end-users. The procedure for qualifying as a Curtailment Customer Aggregator is set forth in ISO procedures.

**Curtailment Initiation Cost:** The fixed payment, separate from a variable Demand Reduction Bid, required by a qualified Demand Reduction Provider in order to cover the cost of reducing demand.

**Curtailment Services Provider:** A qualified entity that can produce real-time, verified reductions in NYCA Load of at least 100 kW in a single Load Zone, pursuant to the Emergency Demand Response Program and related ISO procedures. The procedure for qualifying as a Curtailment Services Provider is set forth in Section 3 below and in ISO Procedures.

**Curtailment Services Provider Capacity:** Capacity from a Demand Side Resource nominated by a Curtailment Services Provider for participation in the Emergency Demand Response Program.

**Customer**: An entity which has complied with the requirements contained in the ISO Services Tariff, including having signed a Service Agreement, and is qualified to utilize the Market Services and the Control Area Services provided by the ISO under the ISO Services Tariff; provided, however, that a party taking services under the Tariff pursuant to an unsigned Service Agreement filed with the Commission by the ISO shall be deemed a Customer.

## 2.4 Definitions - D

**DADRP Component:** The credit requirement for a Demand Reduction Provider to bid into the Day-Ahead Market, and a component of the Operating Requirement, calculated in accordance with Section 26.4.2 of Attachment K to this Services Tariff.

**Day-Ahead:** Nominally, the twenty-four (24) hour period directly preceding the Dispatch Day, except when this period may be extended by the ISO to accommodate weekends and holidays.

**Day-Ahead LBMP:** The LBMPs calculated based upon the ISO's Day-Ahead Security Constrained Unit Commitment process.

**Day-Ahead Margin:** That portion of Day-Ahead LBMP, Operating Reserves settlement or Regulation Service settlement for an hour that represents the difference between the Supplier's accepted Day-Ahead offer price and the Day-Ahead LBMP, Operating Reserves settlement or Regulation Service settlement for that hour.

**Day-Ahead Margin Assurance Payment:** A supplemental payment made to an eligible Supplier that buys out of a Day-Ahead Energy, Regulation Service, or Operating Reserves schedule such that an hourly balancing payment obligation offsets its Day-Ahead Margin. Rules for calculating these payments, and for determining Suppliers' eligibility to receive them, are **set** forth in Attachment J to this ISO Services Tariff.

**Day-Ahead Market:** The ISO Administered Market in which Capacity, Energy and/or Ancillary Services are scheduled and sold Day-Ahead consisting of the Day-Ahead scheduling process, price calculations and Settlements.

**Day-Ahead Reliability Unit:** A Day-Ahead committed Resource which would not have been committed but for a request by a Transmission Owner to the ISO that the unit be committed in the Day-Ahead Market in order to meet the reliability needs of the Transmission Owner's local system or as the result of the ISO's analysis indicating the unit was needed in order to meet the reliability requirements of the NYCA.

**Decremental Bid:** A monotonically increasing Bid curve provided by an entity engaged in a Bilateral Import, other than an entity submitting a CTS Interface Bid, or Internal Transaction to indicate the LBMP below which that entity is willing to reduce its Generator's output, and purchase Energy in the LBMP Markets, or by an entity engaged in a Wheel Through Transaction to indicate the Congestion Component cost at or below which that entity is willing to accept Transmission Service.

**Demand Reduction:** A quantity of reduced electricity demand from a Demand Side Resource or a Distributed Energy Resource that is bid, produced, purchased or sold over a period of time and measured or calculated in Megawatt hours. Demand Reductions of Critical Electric System Infrastructure Load shall not be bid, produced, or sold, unless such Demand Reductions are facilitated by use of a Local Generator. Demand Reductions offered by a Demand Side Resource as Energy in the LBMP Markets may only be offered in the Day-Ahead Market, and shall be offered only by a Demand Reduction Provider. The same Demand Reduction may not be offered by a Demand Reduction Provider and by a customer as Operating Reserves or Regulation Service.

**Demand Reduction Aggregator:** A Demand Reduction Provider, qualified pursuant to ISO Procedures, that bids Demand Side Resources of at least 1 MW through contracts with Demand Side Resources and is not a Load Serving Entity.

**Demand Reduction Incentive Payment:** A payment to Demand Reduction Providers that are scheduled to make Day-Ahead Demand Reductions. The payment shall be equal to the product of: (a) the Day-Ahead hourly LBMP at the applicable Demand Reduction bus; and (b) the lesser of the actual hourly Demand Reduction or the Day-Ahead scheduled hourly Demand Reduction in MW.

**Demand Reduction Provider:** A Customer that is eligible, pursuant to the relevant ISO Procedures, to bid Demand Side Resources of at least 1 MW as Energy into the Day-Ahead Market. A Demand Reduction Provider can be (i) a Load Serving Entity or (ii) a Demand Reduction Aggregator.

**Demand Side Ancillary Service Program (DSASP):** An ISO program that allows qualified DSASP Resources to participate in the ISO's Day-Ahead and Real-Time Markets for Operating Reserves and Regulation Service in accordance with the ISO Services Tariff and ISO Procedures.

**Demand Side Ancillary Service Program Resource (DSASP Resource):** A Demand Side Resource or an aggregation of Demand Side Resources located in the NYCA with at least 1 MW of load reduction that is represented by a point identifier (PTID) and is assigned to a Load Zone or Subzone by the ISO and that is:

i. Capable of controlling demand in a responsive, measurable and verifiable manner within time limits prescribed by the ISO; and

ii. Qualified to participate in the ISO's Ancillary Services market as a Supplier of Operating Reserves or Regulation Service pursuant to the ISO Services Tariff and ISO Procedures.

**Demand Side Ancillary Service Program Provider (DSASP Provider):** A Customer that is eligible, pursuant to the ISO Tariff and ISO Procedures, to offer DSASP Resource(s) as Operating Reserves or Regulation Service in the Day-Ahead or Real-Time Market. A DSASP Provider is responsible for enrolling its DSASP Resource(s), and, when communicating directly with the ISO via telemetry, is responsible for dispatching its DSASP Resource(s).

**Demand Side Resource:** A Resource located in the NYCA that: (i) is capable of controlling demand by either curtailing its Load or by operating a Local Generator to reduce Load from the NYS Transmission System and/or the distribution system at the direction of the ISO, in a responsive, measurable and verifiable manner within time limits, and (ii) is qualified to participate in competitive Energy, Capacity, Operating Reserves or Regulation Service markets, or in the Emergency Demand Response Program pursuant to this ISO Services Tariff and the ISO Procedures.

**Dennison Scheduled Line:** A transmission facility that interconnects the NYCA to the Hydro Quebec Control Area at the Dennison substation, located near Massena, New York and extends through the province of Ontario, Canada (near the City of Cornwall) to the Cedars substation in Quebec, Canada.

**Dependable Maximum Gross Capability ("DMGC"):** The sustained maximum output of the Generator of a BTM:NG Resource, as demonstrated by the performance of a test or through actual operation in accordance with, and averaged over a continuous time period as defined in, ISO Procedures.

**Dependable Maximum Net Capability ("DMNC"):** The sustained maximum net output of a Generator, or, where appropriate, an Aggregation, as demonstrated by the performance of a test or through actual operation, averaged over a continuous time period as defined in the ISO Procedures.

**DER Aggregation:** An Aggregation consisting of one or more Demand Side Resources, or two or more different Resource types, as described in Section 4.1.10 of the Services Tariff.

**Desired Net Interchange ("DNI"):** A mechanism used to set and maintain the desired Energy interchange (or transfer) between two Control Areas; it is scheduled ahead of time and can be changed manually in real-time.

**Direct Sale:** As defined in the ISO OATT.

**Dispatchable:** A bidding mode in which Generators or Demand Side Resources/Aggregations indicate that they are willing to respond to real-time control from the ISO. A Dispatchable Generator, not including the Generator of a BTM:NG Resource, may be either ISO-Committed Flexible or Self-Committed Flexible. A Dispatchable Generator that is the Generator serving a BTM:NG Resource must be Self-Committed Flexible. Dispatchable Demand Side Resources must be ISO-Committed Flexible. Dispatchable Resources that are not providing Regulation Service will follow five-minute RTD Base Point Signals. Dispatchable Resources that are providing Regulation Service will follow six-second AGC Base Point Signals.

**Dispatch Day:** The twenty-four (24) hour (or, if appropriate, the twenty-three (23) or twenty-five (25) hour) period commencing at the beginning of each day (0000 hour).

**Dispute Resolution Administrator ("DRA"):** An individual hired by the ISO to administer the Expedited Dispute Resolution Procedures in Section 5.17 of the ISO Services Tariff.

**Distributed Energy Resource ("DER"):** (i) a facility comprising two or more Resource types behind a single point of interconnection with an Injection Limit of 20 MW or less; or (ii) a Demand Side Resource; or (iii) a Generator with an Injection Limit of 20 MW or less, that is electrically located in the NYCA.

**DMNC Test Period:** The period within a Capability Period during which a Resource shall conduct a DMNC test, or a BTM:NG Resource shall conduct a DMGC test, if such a test is required. Such periods will be established pursuant to the ISO Procedures.

**DSASP Baseline MW**: The value of the Load level of a DSASP resource in the dispatch interval immediately preceding the interval with a non-zero Base Point Signal, where the status of the regulation flag is set to the off condition for either Operating Reserves or Regulation service.

**DSASP Component:** The credit requirement for a Demand Side Resource to offer Ancillary Services, and a component of the Operating Requirement, calculated in accordance with Section 26.4.2 of Attachment K to this Services Tariff.

**Duration Adjustment Factor:** The value of Installed Capacity, expressed as a percentage, for a Resource as specified in Section 5.12.14 of the ISO Services Tariff.

**Dynamically Scheduled Proxy Generator Bus:** A Proxy Generator Bus for which the ISO may schedule Transactions at 5 minute intervals in real time. Dynamically Scheduled Proxy Generator Buses are identified in Section 4.4.4 of the Services Tariff.

## 2.5 Definitions - E

**East of Central-East:** An electrical area comprised of Load Zones F, G, H, I, J, and K, as identified in the ISO Procedures.

**East of Central-East Excluding Long Island:** An electrical area comprised of Load Zones F, G, H, I, and J, as identified in the ISO Procedures.

**East of Central-East Excluding New York City and Long Island:** An electrical area comprised of Load Zones F, G, H, and I, as identified in the ISO Procedures.

**Economic Operating Point:** The megawatt quantity which is a function of: i) the real-time LBMP at the Resource bus; and ii) the Supplier's real-time eleven constant cost step Energy Bid, for the Resource, such that (a) the offer price associated with Energy offers below that megawatt quantity (if that megawatt quantity is not that Resource's minimum output level) must be less than or equal to the real-time LBMP at the Resource bus, and (b) the offer price associated with Energy offers above that megawatt quantity (if that megawatt quantity is not that Resource's maximum output level) must be greater than or equal to the real-time LBMP at the Resource bus. In cases where multiple megawatt values meet conditions (a) and (b), the Economic Operating Point is the megawatt value meeting these conditions that is closest to the Resource's real-time scheduled Energy provided. In cases where the Economic Operating Point would be less than the minimum output level, the Economic Operating Point will be set equal to the MW value of the first point on the Energy Bid curve and in cases where the Economic Operating Point would be greater than the maximum output level, the Economic Operating Point will be set equal to the MW value of the last point on the Energy Bid curve. When evaluating the Economic Operating Point of a BTM:NG Resource, only Energy offers corresponding to quantities in excess of its Host Load will be considered.

**Emergency:** Any abnormal system condition that requires immediate automatic or manual action to prevent or limit loss of transmission facilities or Generators that could adversely affect the reliability of an electric system.

**Emergency Demand Response Program ("EDRP"):** A program pursuant to which the ISO makes payments to Curtailment Service Providers that voluntarily take effective steps in real time, pursuant to ISO procedures, to reduce NYCA demand in Emergency conditions.

**Emergency State**: The state that the NYS Power System is in when an abnormal condition occurs that requires automatic or immediate, manual action to prevent or limit loss of the NYS Transmission System or Generators that could adversely affect the reliability of the NYS Power System.

**Emergency Upper Operating Limit ($UOL_E$):** The upper operating limit that a Generator or an Aggregation, except for the Generator of a BTM:NG Resource, indicates it expects to be able to reach, or the upper operating limit that a BTM:NG Resource indicates it expects to be able to inject into the grid after serving its Host Load and subject to its Injection Limit, or the maximum amount of demand that a Demand Side Resource expects to be able to reduce, at the request of the ISO during extraordinary conditions. Each Resource shall specify a $UOL_E$ in its bids that shall be equal to or greater than its stated Normal Upper Operating Limit.

**Energy ("MWh"):** A quantity of electricity that is bid, produced, purchased, consumed, sold, or transmitted over a period of time, and measured or calculated in megawatt hours. Demand Reductions by Demand Side Resources and Distributed Energy Resources are considered Energy.

**Energy and Ancillary Services Component:** A component of the Operating Requirement, calculated in accordance with Section 26.4.2 of Attachment K to this Services Tariff.

**Energy Duration Limitation:** for a Resource that is not capable of providing Energy for twenty-four hours each day, the number of consecutive hours per day that a Resource elects and is obligated, pursuant to Services Tariff Sections 5.12.1 and 5.12.7, to (i) schedule a Bilateral Transaction; (ii) Bid Energy in the Day-Ahead Market; or (iii) notify the ISO of any outages in the Day-Ahead Market as an Installed Capacity Supplier for the ICAP Equivalent of UCAP sold, as identified in Section 5.12.14 of the ISO Services Tariff.

**Energy Level:** The amount of Energy stored in an Energy Storage Resource or in an Aggregation comprised entirely of Energy Storage Resources.

**Energy Level Management:** The method by which an Energy Storage Resource or Aggregation comprised entirely of Energy Storage Resources controls the amount of Energy stored in the Resource(s). Energy Storage Resources and Aggregations comprised entirely of Energy Storage Resources may choose to be Self-Managed or ISO-Managed in their Bid.

**Energy Limited Resource:** Capacity resources, not including BTM:NG Resources, that, due to environmental restrictions on operations, cyclical requirements, such as the need to recharge or refill, or other non-economic reasons, are unable to operate continuously on a daily basis, but are able to operate for at least four consecutive hours each day. Energy Limited Resources must register their Energy limiting characteristics with, and justify them to, the ISO consistent with ISO Procedures. Resources that meet the qualifications to be an Energy Limited Resource, and choose to participate in the wholesale market as an Energy Limited Resource, are not subject to the rules applicable to Energy Storage Resources.

**Energy Storage Resource ("ESR"):** Generators that receive Energy from the grid at a specified location, and are capable of storing that Energy, for later injection back onto the grid at the same location. Resources that cannot inject Energy onto the grid cannot be Energy Storage Resources. In order to qualify for wholesale market participation, Energy Storage Resources must be able to inject at a rate of at least 0.1 MW for a period of at least one hour. Energy Storage Resources are Withdrawal-Eligible Generators.

**Equivalent Demand Forced Outage Rate:** The portion of time a unit is in demand, but is unavailable due to forced outages.

**Equivalency Rating:** A rating determined by the ISO, at a Customer's request, based on the ISO's financial evaluation of an Unrated Customer that shall serve as the starting point of the

ISO's determination of an amount of Unsecured Credit to be granted to the Customer, if any, as provided in Table K-1 of Attachment K to this Services Tariff.

**ETA Agent:** As defined in the ISO OATT.

**ETCNL TCC:** As defined in the ISO OATT.

**Excess Amount:** The difference, if any, between the dollar amounts charged to purchasers of Unforced Capacity in an ISO–administered Unforced Capacity auction and the dollar amounts paid to sellers of Unforced Capacity in that ISO–administered Installed Capacity auction.

**Excess Congestion Rents:** As defined in the ISO OATT.

**Existing Transmission Capacity for Native Load ("ETCNL"):** As defined in the ISO OATT.

**Existing Transmission Agreement ("ETA")**: As defined in the ISO OATT.

**Expected EDRP/SCR MW:** The aggregate Load reduction (in MW) expected to be realized from EDRP and/or SCRs during the real-time intervals that the ISO has called upon EDRP and/or SCRs to provide Load reduction in a Scarcity Reserve Region, as determined based on the ISO's calculation of the historical performance of EDRP and SCRs. There will be separate values for voluntary and mandatory Load reductions. When determining the historical performance of SCRs, provision of Load reduction shall be deemed mandatory if the ISO has satisfied the notification requirements set forth in Section 5.12.11.1 of this ISO Services Tariff as it relates to the SCRs in the applicable Load Zone, otherwise provision of such Load reduction shall be deemed voluntary. When determining the historical performance of the EDRP, provision of Load reduction by EDRP shall be deemed voluntary.

**Expected Load Reduction:** For purposes of determining the Real-Time Locational Based Marginal Price, the reduction in Load expected to be realized in real-time from activation of the Emergency Demand Response Program and from Load reductions requested from Special Case Resources, as established pursuant to ISO Procedures.

**Expedited Dispute Resolution Procedures:** The dispute resolution procedures applicable to disputes arising out of the Installed Capacity provisions of this ISO Services Tariff (as set forth in Section 5.17) and the Customer settlements provisions of this ISO Services Tariff (as set forth in Section 7.4.3).

**Export**: A Bilateral Transaction or purchase from the LBMP Market where the Energy is delivered to an NYCA Interconnection with another Control Area.

**Export Credit Requirement:** A component of the External Transaction Component of the Operating Requirement, calculated in accordance with Section 26.4.2 of Attachment K to this Services Tariff.

**External**: An entity (*e.g.*, Supplier, Transmission Customer) or facility (e.g., Generator, Interface) located outside the Control Area being referenced or between two or more Control Areas. Where a specific Control Area is not referenced, the NYCA is the intended reference.

**External-to-ROS Deliverability Rights ("EDRs")**: Rights, as measured in MW, associated with incremental transfer capability (i) on a new or existing Scheduled Line over an External Interface, with a terminus in Rest of State, and (ii) that has CRIS obtained pursuant to Attachment S of the OATT. When combined with qualified Unforced Capacity which is located in an External Control Area either by contract or ownership, and which is deliverable to the NYCA Interface with Rest of State over which it created the incremental transfer capability, EDRs allow such Unforced Capacity to be offered into the ISO-Administered Market.

**External Transaction Component**: A component of the Operating Requirement, calculated in accordance with Section 26.4.2 of Attachment K to this Services Tariff.

**External Transactions**: Purchases, sales or exchanges of Energy, Capacity or Ancillary Services for which either the Point of Injection ("POI") or Point of Withdrawal ("POW") or both are located outside the NYCA (*i.e.*, Exports, Imports or Wheels Through).

## 2.9 Definitions - I

**ICAP Demand Curve**: A series of prices which decline until reaching zero as the amount of Installed Capacity increases.

**ICAP Demand Curve Reset Filing Year:** A calendar year in which the ISO files ICAP Demand Curves, in accordance with Section 5.14.1.2.1.11 or Section 5.14.1.2.2.4.11.

**ICAP Ineligible Forced Outage**: The outage state of a Market Participant's Generator after: i) the expiration or termination of its Forced Outage pursuant to the provisions in Section 5.18.1.6 of this Services Tariff, which Forced Outage started on or after May 1, 2015; ii) the Market Participant voluntarily reclassified its Forced Outage pursuant to the provisions in Section 5.18.2.1 of this Services Tariff, which Forced Outage started on or after May 1, 2015; or iii) substantial actions have been taken, such as dismantling or disabling essential equipment, which actions are inconsistent with an intention to return the Generator to operation and the Energy market. A Generator in an ICAP Ineligible Forced Outage is subject to the return-to-service provisions in Section 5.18.4 of this Services Tariff and is ineligible to participate in the Installed Capacity market.

**ICAP Spot Market Auction**: An auction conducted pursuant to Section 5.14.1.1 of this Tariff to procure and set LSE Unforced Capacity Obligations for the subsequent Obligation Procurement Period, pursuant to the Demand Curves applicable to each respective LSE and the supply that is offered.

**Import Constrained Locality:** New York City and the G-J Locality.

**Import Credit Requirement:** A component of the External Transaction Component of the Operating Requirement, calculated in accordance with Section 26.4.2 of Attachment K to this Services Tariff.

**Import Curtailment Guarantee Payment**: A payment made in accordance with Section 4.5.2.2 and Attachment J of this ISO Services Tariff to compensate a Supplier whose Import is Curtailed by the ISO.

**Imports**: A Bilateral Transaction or sale to the LBMP Market where Energy is delivered to a NYCA Interconnection from another Control Area.

**Imputed LBMP Revenue:** Revenue developed for calculating a Generator, Aggregation or Import Bid Production Cost guarantee, for any interval, which equals the product of (i) the Bilateral Transaction scheduled MW in the Day-Ahead Market or real-time market, as appropriate, from the Generator bus or Proxy Generator Bus, as appropriate, for the interval, (ii) the LBMP, in units of $/MWh, either Day-Ahead or real-time as appropriate, at the Generator or Proxy Generator Bus for that interval and (iii) the length of the interval, in units of hours.

**Inactive Reserves:** The outage state in which a Market Participant's Generator is unavailable to produce Energy for a limited period of time not to exceed six months, for reasons that are not equipment related, which state does not meet the criteria to be classified as any other outage pursuant to the provisions of this Services Tariff or of ISO Procedures. A Generator in Inactive Reserves is ineligible to participate in the Installed Capacity market.

**Inadvertent Energy Accounting**: The accounting performed to track and reconcile the difference between net actual Energy interchange and scheduled Energy interchange of a Control Area with adjacent Control Areas.

**In-City:** Located electrically within the New York City Locality (LBMP Load Zone J).

**Incremental Average Coincident Load ("Incremental ACL**"): Beginning with the Summer 2014 Capability Period, the amount of qualifying Load that may be added to the Average Coincident Load of a Special Case Resource. In order to qualify to use Incremental ACL the SCR must enroll with an ACL and report an increase in the Load of the facility that is supplied by the NYS Transmission System and/or distribution system that meets or exceeds the SCR Load Change Reporting Threshold in accordance with this Services Tariff. The Incremental ACL reported in a Capability Period cannot exceed one-hundred percent (100%) of the ACL that has been calculated for the SCR when it first enrolls in the Capability Period. For resources reporting an Incremental ACL, the Net Average Coincident Load shall equal the enrolled ACL plus the reported Incremental ACL less any applicable SCR Change of Status. Each resource for which a RIP reports an Incremental ACL is subject to verification subsequent to the Capability Period pursuant to reporting requirements and calculations using the SCR's metered Load values provided in Section 5.12.11.1.5 of this Services Tariff and ISO Procedures.

**Incremental Energy Bid**: A series of monotonically increasing constant cost incremental Energy steps that indicate the quantities of Energy for a given price that an entity is willing to supply to the ISO Administered Markets.

**Incremental TCC:** As defined in the ISO OATT.

**Independent System Operator ("ISO")**: The New York Independent System Operator, Inc., a not-for-profit corporation established pursuant to the ISO Agreement.

**Independent System Operator Agreement ("ISO Agreement")**: The agreement that establishes the New York ISO.

**Independent System Operator/New York State Reliability Council ("ISO/NYSRC Agreement")**: The agreement between the ISO and the New York State Reliability Council governing the relationship between the two organizations.

**Independent System Operator-Transmission Owner Agreement ("ISO/TO Agreement")**: The agreement that establishes the terms and conditions under which the Member Systems transferred to the ISO Operational Control over designated transmission facilities.

**Indicative NCZ Locational Minimum Installed Capacity Requirement:** The amount of capacity that must be electrically located within a New Capacity Zone, or possess an approved Unforced Capacity Deliverability Right, in order to ensure that sufficient Energy and Capacity are available in that NCZ and that appropriate reliability criteria are met.

**Injection Limit:** The maximum injection of BTM:NG Resources and Distributed Energy Resources, in MW, into the NYS Transmission System or distribution system at the BTM:NG Resources' Point of Injection or Distributed Energy Resource's point of interconnection. The Injection Limit for a BTM:NG Resource must be at least 1 MW.

**Installed Capacity ("ICAP")**: External or Internal Capacity, in increments of 100 kW, that is made-available pursuant to Tariff requirements and ISO Procedures.

**Installed Capacity Equivalent**: The Resource capability that corresponds to its Unforced Capacity, calculated in accordance with ISO Procedures.

**Installed Capacity Marketer:** An entity which has signed this Tariff and which purchases Unforced Capacity from qualified Installed Capacity Suppliers, or from LSEs with excess Unforced Capacity, either bilaterally or through an ISO-administered auction. Installed Capacity Marketers that purchase Unforced Capacity through an ISO-administered auction may only resell Unforced Capacity purchased in such auctions in the NYCA.

**Installed Capacity Supplier**: An Energy Limited Resource, Generator, Aggregation, Installed Capacity Marketer, Responsible Interface Party, Intermittent Power Resource, Limited Control Run of River Hydro Resource, municipally-owned generation, BTM:NG Resource, System Resource or Control Area System Resource that satisfies the ISO's qualification requirements for supplying Unforced Capacity to the NYCA.

**Interconnection or Interconnection Points ("IP")**: The point(s) at which the NYCA connects with a distribution system or adjacent Control Area. The IP may be a single tie line or several tie lines that are operated in parallel.

**Interface**: A defined set of transmission facilities that separate Load Zones and that separate the NYCA from adjacent Control Areas.

**Interface MW - Mile Methodology:** As defined in the ISO OATT.

**Interim Service Provider ("ISP")**: As defined in Attachment FF to the OATT.

**Intermittent Power Resource:** A device for the production of electricity that is characterized by an energy source that: (1) is renewable; (2) cannot be stored by the producing device; and (3) has variability that is beyond the control of the facility owner or operator. In New York, resources that depend upon wind, solar energy or landfill gas for their fuel have been classified as Intermittent Power Resources. Each Intermittent Power Resource that depends on wind as its fuel shall include all turbines metered at a single scheduling point identifier (PTID).

**Internal**: An entity (*e.g.*, Supplier, Transmission Customer) or facility (*e.g.*, Generator, Interface) located within the Control Area being referenced. Where a specific Control Area is not referenced, internal means the NYCA.

**Internal Transactions**: Purchases, sales or exchanges of Energy, Capacity or Ancillary Services where the Generator and Load are located within the NYCA.

**Investment Grade Customer**: A Customer that meets the criteria set forth in Section 26.3 of Attachment K to this Services Tariff.

**Investor-Owned Transmission Owners**: At the present time these include: Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., New York State Electric & Gas Corporation, Niagara Mohawk Power Corporation, Orange and Rockland Utilities, Inc., and Rochester Gas and Electric Corporation.

**ISO Administered Markets** : The Day-Ahead Market and the Real-Time Market (collectively the "LBMP Markets") and any other market or auction administered by the ISO.

**ISO-Committed Fixed**: In the Day-Ahead Market, a bidding mode in which a Generator requests that the ISO commit and schedule it. In the Real-Time Market, a bidding mode in which a Generator, with ISO approval, requests that the ISO schedule it no more frequently than every 15 minutes. A Generator scheduled in the Day-Ahead Market as ISO-Committed Fixed will participate as a Self-Committed Fixed Generator in the Real-Time Market unless it changes bidding mode, with ISO approval, to participate as an ISO-Committed Fixed Generator. BTM:NG Resources and Aggregations are not permitted to utilize the ISO-Committed Fixed bidding mode.

**ISO-Committed Flexible**: A bidding mode in which a Dispatchable Generator or Demand Side Resource or Aggregation comprised entirely of Energy Storage Resources follows Base Point Signals and is committed by the ISO. BTM:NG Resources and Aggregations that are not entirely comprised of Energy Storage Resources are not permitted to utilize the ISO-Committed Flexible bidding mode.

**ISO-Managed Energy Level**: A Bid parameter which when selected indicates that an Energy Storage Resource's, or an Aggregation comprised entirely of Energy Storage Resources, Energy Level constraints will be directly accounted for in the optimization. *See* Section 4.2.1.3.4 of this Services Tariff.

**ISO Market Power Monitoring Program**: The monitoring program approved by the Commission and administered by the ISO and the Market Monitoring Unit that is designed to monitor the possible exercise of market power in ISO Administered Markets.

**ISO OATT**: The ISO Open Access Transmission Tariff.

**ISO Procedures**: The procedures adopted by the ISO in order to fulfill its responsibilities under the ISO OATT, the ISO Services Tariff and the ISO Related Agreements.

**ISO Related Agreements**: Collectively, the ISO Agreement, the ISO/TO Agreement, the NYSRC Agreement, the ISO/NYSRC Agreement, and the Operating Agreements.

**ISO Services Tariff (the "Tariff")**: The ISO Market Administration and Control Area Services Tariff.

**ISO Tariffs**: The ISO OATT and the ISO Services Tariff, collectively.

**ISP UCAP MW:** The quantity of Unforced Capacity determined by the ISO in accordance with Section 5.14.1.1 of this Services Tariff.

## 2.12 Definitions - L

**LBMP Market(s)**: The Real-Time Market or the Day-Ahead Market or both.

**Limited Control Run-of-River Hydro Resource**: A Generator above 1 MW in size that has demonstrated to the satisfaction of the ISO that its Energy production depends directly on river flows over which it has limited control and that such dependence precludes accurate prediction of the facility's real-time output.

**Limited Customer**: An entity that is not a Customer but which qualifies to participate in the ISO's Emergency Demand Response Program by complying with Limited Customer requirements set forth in the ISO Procedures.

**Limited Energy Storage Resource ("LESR")**: A Generator authorized to offer Regulation Service only and characterized by limited Energy storage, that is, the inability to sustain continuous operation at maximum Energy withdrawal or maximum Energy injection for a minimum period of one hour. LESRs must bid as ISO-Committed Flexible Resources.

**Limited Energy Storage Resource ("LESR") Energy Management**: Real-time Energy injections or withdrawals scheduled by the ISO to manage the Energy storage capacity of a Limited Energy Storage Resource, pursuant to ISO Procedures, for the purpose of maximizing the Capacity bid as available for Regulation Service from such Resource.

**Linden VFT Scheduled Line**: A transmission facility that interconnects the NYCA to the PJM Interconnection, L.L.C. Control Area in Linden, New Jersey.

**LIPA Tax Exempt Bonds**: Obligations issued by the Long Island Power Authority, the interest on which is not included in gross income under the Internal Revenue Code.

**Load**: A term that refers to either a consumer of Energy or the amount of demand (MW) or Energy (MWh) consumed by certain consumers. Energy withdrawals by Withdrawal-Eligible Generators are not Load.

**Load Serving Entity ("LSE")**: Any entity, including a municipal electric system and an electric cooperative, authorized or required by law, regulatory authorization or requirement, agreement, or contractual obligation to supply Energy, Capacity and/or Ancillary Services to retail customers located within the NYCA, including an entity that takes service directly from the ISO to supply its own Load in the NYCA.

**Load Shedding**: The systematic reduction of system demand by disconnecting Load in response to a Transmission System or area Capacity shortage, system instability, or voltage control considerations under the ISO OATT.

**Load Zone**: One (1) of eleven (11) geographical areas located within the NYCA that is bounded by one (1) or more of the fourteen (14) New York State Interfaces.

**Local Furnishing Bonds**: Tax-exempt bonds issued by a Transmission Owner under an agreement between the Transmission Owner and the New York State Energy Research and Development Authority ("NYSERDA"), or its successor, or by a Transmission Owner itself, and pursuant to Section 142(f) of the Internal Revenue Code, 26 U.S.C. § 142(f).

**Local Generator**: A resource operated by or on behalf of a Load that is either: (i) not synchronized to a local distribution system; or (ii) synchronized to a local distribution system solely in order to support a Load that is equal to or in excess of the resource's Capacity. Local Generators supply Energy only to the Load they are being operated to serve and do not supply Energy to the distribution system.

**Locality**: A single LBMP Load Zone or set of adjacent LBMP Load Zones within which a minimum level of Installed Capacity must be maintained, and as specifically identified in this subsection to mean (1) Load Zone J; (2) Load Zone K; and (3) Load Zones G, H, I, and J collectively (*i.e.*, the G-J Locality)**.**

**Locality Exchange Factor**: The percentage of Locational Export Capacity that the ISO determines annually in accordance with Section 5.11.6 of the Services Tariff.

**Locality Exchange MW**: The MW of Locational Export Capacity excluding the MW to be transmitted using UDRs, that the ISO determines in accordance with Section 5.11.5 of the Services Tariff.

**Local Reliability Rule**: A Reliability Rule established by a Transmission Owner, and adopted by the NYSRC, to meet specific reliability concerns in limited areas of the NYCA, including without limitation, special conditions and requirements applicable to nuclear plants and special requirements applicable to the New York City metropolitan area.

**Locational Based Marginal Pricing ("LBMP")**: The price of Energy at each location in the NYS Transmission System as calculated pursuant to Section 17 Attachment B of this Services Tariff.

**Locational Export Capacity:** The MW of a Generator electrically located in an Import Constrained Locality that (a) has Capacity Resource Interconnection Service, pursuant to the applicable provisions of Attachment X, Attachment S and Attachment Z to the ISO OATT, and (b) that meets the eligibility requirements set forth in Section 5.9.2.2 of the Services Tariff.

**Locational Minimum Installed Capacity Requirement:** The portion of the NYCA Minimum Installed Capacity Requirement provided by Capacity Resources that must be electrically located within a Locality (including those combined with a Unforced Capacity Deliverability Right except for rights returned in an annual election to the ISO in accordance with ISO Procedures) in order to ensure that sufficient Energy and Capacity are available in that Locality and that appropriate reliability criteria are met.

**Locational Minimum Unforced Capacity Requirement**: The Unforced Capacity equivalent of the Locational Minimum Installed Capacity Requirement.

**Long Island ("L.I.")**: An electrical area comprised of Load Zone K, as identified in the ISO Procedures.

**Lost Opportunity Cost**: The foregone profit associated with the provision of Ancillary Services, which is equal to the product of: (1) the difference between (a) the Energy that a Generator or Aggregation could have sold at the specific LBMP and (b) the Energy sold as a result of reducing the Generator or Aggregation's output to provide an Ancillary Service under the directions of the ISO; and (2) the LBMP existing at the time the Generator or Aggregation was instructed to provide the Ancillary Service, less the Generator or Aggregation's Energy bid for the same MW segment.

**Lower Operating Limit:** For an Energy Storage Resource or Aggregation containing Energy Storage Resources, the maximum amount of megawatts the Resource can consume from the grid, if it is bidding to withdraw Energy, or the minimum amount of MW the Resource can supply the grid if it is not bidding to withdraw Energy. The Lower Operating Limit of an ISO-Managed Energy Storage Resource that is not bidding to withdraw Energy shall not be set to less than 0 MW.

**Lower Storage Limit:** The minimum amount of Energy an Energy Storage Resource or Aggregation comprised entirely of Energy Storage Resources is physically capable of storing.

**LSE Unforced Capacity Obligation**: The amount of Unforced Capacity that each NYCA LSE must obtain for an Obligation Procurement Period as determined by the ICAP Demand Curve for the NYCA, the G-J Locality, New York City Locality, and/or the Long Island Locality, as applicable, for each ICAP Spot Market Auction. The amount includes, at a minimum, each LSE's share of the NYCA Minimum Unforced Capacity Requirement and the Locational Minimum Unforced Capacity Requirement, as applicable.

## 2.13 Definitions - M

**Major Emergency State**: An Emergency accompanied by abnormal frequency, abnormal voltage and/or equipment overloads that create a serious risk that the reliability of the NYS Power System could be adversely affected.

**Marginal Losses**: The NYS Transmission System Real Power Losses associated with each additional MWh of consumption by Load, or each additional MWh transmitted under a Bilateral Transaction as measured at the Points of Withdrawal.

**Marginal Losses Component**: The component of LBMP at a bus that accounts for the Marginal Losses, as measured between that bus and the Reference Bus.

**Market-Clearing Price**: The price determined in an Installed Capacity auction for each ISO-defined Locality, the remainder of the NYCA and each adjacent External Control Area for which all offers to sell and bids to purchase Unforced Capacity are in equilibrium.

**Market Mitigation and Analysis Department**: A department, internal to the ISO, that is responsible for participating in the ISO's administration of its Tariffs. The Market Mitigation and Analysis Department's duties are described in Section 30.3 of the Market Monitoring Plan that is set forth in Attachment O to this Services Tariff.

**Market Monitoring Unit**: "Market Monitoring Unit" shall have the same meaning in this ISO Services Tariff as it has in the Market Monitoring Plan that is set forth in Attachment O to this Services Tariff.

**Market Participant**: An entity, excluding the ISO, that produces, transmits, sells, and/or purchase for resale Unforced Capacity, Energy or Ancillary Services in the Wholesale Market. Market Participants include: Transmission Customers under the ISO OATT, Customers under the ISO Services Tariff, Power Exchanges, Transmission Owners, Primary Holders, LSEs, Suppliers and their designated agents. Market Participants also include entities buying or selling TCCs.

**Market Problem**: An issue which requires notification to Market Participants, the Commission and the Market Monitoring Unit pursuant to Section 3.5.1 of this Services Tariff. It includes market design flaws, software implementation and modeling anomalies or errors, market data anomalies or errors, and economic inefficiencies that have a material effect on the ISO-administered markets or transmission service. The term does not include erroneous Energy or Ancillary Services prices (which are managed through procedures outlined in Attachment E to the Services Tariff) or erroneous customer settlements.

**Market Services**: Services provided by the ISO under the ISO Services Tariff related to the ISO Administered Markets for Energy, Capacity and Ancillary Services.

**MCZ Import Constrained Locality:** A Mitigated Capacity Zone that is also an Import Constrained Locality.

**Member Systems**: The eight Transmission Owners that comprised the membership of the New York Power Pool, which are: (1) Central Hudson Gas & Electric Corporation, (2) Consolidated Edison Company of New York, Inc., (3) New York State Electric & Gas Corporation, (4) Niagara Mohawk Power Corporation d/b/a National Grid, (5) Orange and Rockland Utilities, Inc., (6) Rochester Gas and Electric Corporation, (7) the Power Authority of the State of New York, and (8) Long Island Lighting Company d/b/a Long Island Power Authority.

**Meter Services Entity ("MSE"):** An entity registered with the ISO and authorized to provide metering and meter data services, as applicable, to a Demand Reduction Provider, DSASP Provider, Responsible Interface Party, or Curtailment Service Provider.

**Minimum Generation Bid**: A two-parameter Bid that identifies the minimum operating level a Supplier requires to operate a Generator, and the payment a Supplier requires to operate its Generator at that level, or the minimum quantity of Demand Reduction a Demand Side Resource requires to provide Demand Reduction and the payment the Supplier requires to provide that level of Demand Reduction. If the Supplier is a BTM:NG Resource, LESR, Energy Storage Resource, or an Aggregation, it shall not submit a Minimum Generation Bid.

**Minimum Generation Level**: For purposes of describing the eligibility of ten minute Resources to be committed by the Real Time Dispatch for pricing purposes pursuant to the Services Tariff, Section 4.4.3.3, an upper bound, established by the ISO, on the physical minimum generation limits specified by ten minute Resources. Ten minute Resources with physical minimum generation limits that exceed this upper bound will not be committed by the Real Time Dispatch for pricing purposes. The ISO shall establish a Minimum Generation Level based on its evaluation of the extent to which it is meeting its reliability criteria including Control Performance. The Minimum Generation Level, in megawatts, and the ISO's rationale for that level, shall be made available through the ISO's website or comparable means. If the Supplier is a BTM:NG Resource, LESR, Energy Storage Resource, or Aggregation, it shall not submit a Minimum Generation Level.

**Minimum Payment Nomination**: An offer, submitted by a Responsible Interface Party, in dollars per Megawatt-hour and not to exceed $500 per Megawatt-hour, to reduce Load equal to the Installed Capacity Equivalent of the amount of Unforced Capacity a Special Case Resource is supplying to the NYCA.

**Mitigated Capacity Zone**: New York City and any Locality added to the definition of "Locality" accepted by the Commission on or after March 31, 2013.

**Modified Wheeling Agreement ("MWA")**: A Transmission Wheeling Agreement between Transmission Owners that was in existence at the time of ISO start-up, as amended and modified as described in Attachment K. Modified Wheeling Agreements are associated with Generators or power supply contracts existing at ISO start-up. All Modified Wheeling Agreements are listed in Attachment L, Table 1A, and are designated in the "Treatment" column of Table 1A, as "MWA".

**Monthly Auction:** An auction administered by the ISO pursuant to Section 5.13.3 of the ISO Services Tariff.

**Monthly Average Coincident Load ("Monthly ACL")**: Beginning with the Summer 2014 Capability Period, the Load value calculated for each month during a Capability Period applicable to a Special Case Resource with a reported Incremental Average Coincident Load. The Monthly ACL is an average of the SCR's metered hourly Load that is supplied by the NYS Transmission System and/or the distribution system and reported for the Monthly SCR Load Zone Peak Hours applicable to such SCR. The calculation and verification data reporting requirements are provided in Section 5.12.11.1.5 of this Services Tariff and ISO Procedures. Any Load supported by generation produced from a Local Generator, other behind-the-meter generator, or other supply source located behind the meter operating during the Monthly SCR Zone Load Peak Hours may not be included in the metered Load values reported for the Monthly ACL.

**Monthly Net Benefit Offer Floor/Threshold**: The price, in $/MWh, determined by the ISO pursuant to Section 4.2.1.9/4.5.7.1 of the ISO Services Tariff and ISO Procedures, below which offers submitted by Demand Reduction Providers shall not be evaluated in the ISO's Security Constrained Unit Commitment.

**Monthly SCR Load Zone Peak Hours:** Beginning with the Summer 2014 Capability Period, the top forty (40) coincident peak hours for each month within a Capability Period that include hour beginning eleven through hour beginning nineteen as identified by the ISO for each Load Zone; provided, however, that such hours shall not include (i) hours in which Special Case Resources located in the specific Load Zone were called by the ISO to respond to a reliability event or test, (ii) hours for which the Emergency Demand Response Program resources were deployed by the ISO in each specific Load Zone and (iii) in descending rank order of NYCA Load up to a maximum of eight hours per month, a) the hour before the start time of a reliability event or performance test, in which SCRs located in the specific Load Zone were called by the ISO to respond to a reliability event or performance test, or b) the hour immediately following the end time of such reliability event or performance test.

**Mothball Outage:** The outage state in which a Market Participant's Generator is voluntarily removed from service on or after May 1, 2015, with applicable prior notice, for reasons not related to equipment failure. A Generator in Mothball Outage is subject to the return-to-service provisions in Section 5.18.4 of this Services Tariff and is ineligible to participate in the Installed Capacity market.

## 2.14 Definitions - N

**Native Load Customers**: The wholesale and retail power customers of the Transmission Owners on whose behalf the Transmission Owners, by statute, franchise, regulatory requirement, or contract, have undertaken an obligation to construct and operate the Transmission Owners' systems to meet the reliable electric needs of such customers.

**NCZ Locational Minimum Installed Capacity Requirement:** The amount of Capacity that must be electrically located within an NCZ, or possess an approved Unforced Capacity Deliverability Right, designed to ensure that sufficient Energy and Capacity are available in that NCZ and that appropriate reliability criteria are met.

**NCZ Study Capability Period:** The Summer Capability Period that begins five years from May 1 in a calendar year including an NCZ Study Start Date.

**NCZ Study Start Date:** September 1 or the next business day thereafter in the calendar year prior to an ICAP Demand Curve Reset Filing Year.

**Neptune Scheduled Line:** A transmission facility that interconnects the NYCA to the PJM Interconnection LLC Control Area at Levittown, Town of Hempstead, New York and terminates in Sayerville, New Jersey.

**NERC**: The North American Electric Reliability Council or, as applicable, the North American Electric Reliability Corporation.

**Net Auction Revenue**: As defined in the ISO OATT.

**Net Average Coincident Load ("Net ACL"):** The effective Average Coincident Load calculated and used by the ISO for a Special Case Resource during a specific month in which a SCR Change of Status was reported for the resource or, beginning with the Summer 2014 Capability Period, an Incremental Average Coincident Load was reported for the resource.

**Net Benefits Test:** The monthly calculations performed by the ISO in accordance with Section 4.2.1.9/4.5.7.1 of the ISO Services Tariff and ISO Procedures to determine the Monthly Net Benefit Offer Floor/Threshold, the threshold price at which the Demand Reductions meet the test required by Commission Order 745.

**Net Congestion Rent:** As defined in the ISO OATT.

**Net Installed Capacity ("Net-ICAP"):** The amount of Installed Capacity that a BTM:NG Resource has demonstrated (in accordance with ISO Procedures) it is capable of supplying in accordance with Section 5.12.6.1 of this Tariff, used to determine its Net Unforced Capacity.

**Net Unforced Capacity ("Net-UCAP"):** The amount of Unforced Capacity a BTM:NG Resource can offer in the ISO's Installed Capacity market.

**Network Integration Transmission Service**: The Transmission Service provided under Part 4 of the ISO OATT.

**New Capacity Zone ("NCZ"):** A single Load Zone or group of Load Zones that is proposed as a new Locality, and for which the ISO shall establish a Demand Curve.

**New York City**: The electrical area comprised of Load Zone J, as identified in the ISO Procedures.

**New York Control Area ("NYCA")**: The Control Area that is under the control of the ISO which includes transmission facilities listed in the ISO/TO Agreement Appendices A-1 and A-2, as amended from time-to-time, and generation located outside the NYS Power System that is subject to protocols (e.g., telemetry signal biasing) which allow the ISO and other Control Area operator(s) to treat some or all of that generation as though it were part of the NYS Power System.

**New York Power Pool ("NYPP")**: An organization established by agreement (the "New York Power Pool Agreement") made as of July 21, 1966, and amended as of July 16, 1991, by and among Central Hudson Gas & Electric Corporation, Consolidated Edison Company of New York, Inc., Long Island Lighting Company, New York State Electric & Gas Corporation, Niagara Mohawk Power Corporation, Orange and Rockland Utilities, Inc., Rochester Gas and Electric Corporation, and the Power Authority of the State of New York. LIPA became a Member of the NYPP on May 28, 1998 as a result of the acquisition of the Long Island Lighting Company by the Long Island Power Authority.

**New York State Bulk Power Transmission Facility:** This term shall have the meaning given in Attachment Y to the OATT.

**New York State Power System ("NYS Power System")**: All facilities of the NYS Transmission System, and all those Generators and Aggregations located within the NYCA or outside the NYCA, some of which may from time-to-time be subject to operational control by the ISO.

**New York State Reliability Council ("NYSRC")**: An organization established by agreement among the Member Systems to promote and maintain the reliability of the NYS Power System.

**New York State Reliability Council Agreement ("NYSRC Agreement")**: The agreement which established the NYSRC.

**New York State Transmission System ("NYS Transmission System")**: The entire New York State electric transmission system, which includes: (1) the Transmission Facilities Under ISO Operational Control; (2) the Transmission Facilities Requiring ISO Notification; and (3) all remaining transmission facilities within the NYCA.

**Non-Competitive Proxy Generator Bus**: A Proxy Generator Bus for an area outside of the New York Control Area that has been identified by the ISO as characterized by non-competitive Import or Export prices, and that has been approved by the Commission for designation as a

Non-Competitive Proxy Generator Bus. Non-Competitive Proxy Generator Buses are identified in Section 4.4.4 of the Services Tariff., as set forth in Section 4.4.2.2 of the MST

**Non-Firm-Point-To-Point Transmission Service:** Point-To-Point Transmission Service for which a Transmission Customer is not willing to pay Congestion. Such service is not available in the markets that the NYISO administers.

**Non-Investment Grade Customer**: A Customer that does not meet the criteria necessary to be an Investment Grade Customer, as set forth in Section 26.3 of Attachment K to this Services Tariff.

**Non-Utility Generator ("NUG," "Independent Power Producer" or "IPP")**: Any entity that owns or operates an electric generating facility that is not included in an electric utility's rate base. This term includes, but is not limited to, cogenerators and small power producers and all other non-utility electricity producers, such as exempt wholesale Generators that sell electricity.

**Normal State**: The condition that the NYS Power System is in when the Transmission Facilities Under ISO Operational Control are operated within the parameters listed for Normal State in the Reliability Rules. These parameters include, but are not limited to, thermal, voltage, stability, frequency, operating reserve and Pool Control Error limitations.

**Normal Upper Operating Limit ($UOL_N$)**: The upper operating limit that a Generator or Aggregation, except for the Generator of a BTM:NG Resource, indicates it expects to be able to reach, or the upper operating limit a BTM:NG Resource indicates it expects to be able to inject into the grid after serving its Host Load and subject to its Injection Limit, or the maximum amount of demand that a Demand Side Resource expects to be able to reduce, during normal conditions. Each Resource will specify its $UOL_N$ in its Bids which shall be reduced when the Resource requests that the ISO derate its Capacity or the ISO derates the Resource's Capacity. A Normal Upper Operating Limit may be submitted as a function depending on one or more variables, such as temperature or pondage levels, in which case the Normal Upper Operating Limit applicable at any time shall be determined by reference to that schedule. Bids for Self-Managed Energy Storage Resources or Aggregations containing Energy Storage Resources may include a negative $UOL_N$ when the Resource bids to withdraw Energy from the grid. The $UOL_N$ for ISO-Managed Energy Storage Resources shall not be lower than 0 MW.

**Northport-Norwalk Scheduled Line**: A transmission facility that originates at the Northport substation in New York and interconnects the NYCA to the ISO New England Control Area at the Norwalk Harbor substation in Connecticut.

**Notice of Intent to Return:** The notice a Supplier with a Generator that is in a Mothball Outage or ICAP Ineligible Forced Outage provides to the ISO, pursuant to ISO Procedures, that gives the date by which it intends to return to the Energy market, which proposed return date shall be no later than the expiration date of the Generator's Mothball Outage or ICAP Ineligible Forced Outage.

**NPCC**: The Northeast Power Coordinating Council.

**NRC**: The Nuclear Regulatory Commission or any successor thereto.

**NYCA Installed Reserve Margin**: The ratio of the amount of additional Installed Capacity required by the NYSRC in order for the NYCA to meet NPCC reliability criteria to the forecasted NYCA upcoming Capability Year peak Load, expressed as a decimal.

**NYCA Minimum Installed Capacity Requirement:** The requirement established for each Capability Year by multiplying the NYCA peak Load forecasted by the ISO by the quantity one plus the NYCA Installed Reserve Margin.

**NYCA Minimum Unforced Capacity Requirement**: The Unforced Capacity equivalent of the NYCA Minimum Installed Capacity Requirement.

**NYCA Peak Load Forecast**: The NYISO calculation of the peak hourly demand condition for the design day occurring on a non-holiday weekday in July or August for the upcoming Capability Year which is determined in accordance with Sections 5.10 and 5.11 of the Services Tariff and is based upon the weather-adjusted Load for the hour during a non-holiday weekday in July or August in which actual Load in the NYCA was highest.

**NYPA**: The Power Authority of the State of New York.

**NYPA Tax-Exempt Bonds**: Obligations of the New York Power Authority, the interest on which is not included in gross income under the Internal Revenue Code.

## 2.15 Definitions - O

**Obligation Procurement Period**: The period of time for which LSEs shall be required to satisfy their Unforced Capacity requirements. Starting with the 2001-2002 Winter Capability Period, Obligation Procurement Periods shall be one calendar month in duration and shall begin on the first day of each calendar month.

**Off-Peak**: The hours between 11 p.m. and 7 a.m., prevailing Eastern Time, Monday through Friday, and all day Saturday and Sunday, and NERC-defined holidays, or as otherwise decided by the ISO.

**Offeror**: An entity that offers to sell Unforced Capacity in an auction.

**On-Peak**: The hours between 7 a.m. and 11 p.m. inclusive, prevailing Eastern Time, Monday through Friday, except for NERC-defined holidays, or as otherwise decided by the ISO.

**Open Access Same-Time Information System ("OASIS")**: The information system and standards of conduct contained in Part 37 of the Commission's regulations and all additional requirements implemented by subsequent Commission orders dealing with OASIS.

**Operating Agreement**: An agreement between the ISO and a non-incumbent owner of transmission facilities in the New York Control Area concerning the operation of the transmission facilities in the form of the agreement set forth in Appendix H (Section 31.11) of Attachment Y of the OATT.

**Operating Capacity**: Capacity that is readily converted to Energy and is measured in MW.

**Operating Committee**: A standing committee of the ISO created pursuant to the ISO Agreement, which coordinates operations, develops procedures, evaluates proposed system expansions and acts as a liaison to the NYSRC.

**Operating Data**: Pursuant to Section 5.12.5 of this Tariff, Operating Data shall mean GADS Data, data equivalent to GADS Data, CARL Data, metered Load data, or actual system failure occurrences data, all as described in the ISO Procedures.

**Operating Requirement**: The amount calculated in accordance with Section 26.4.2 of Attachment K to this Services Tariff.

**Operating Reserves**: Capacity that is available to provide Energy and that meets all applicable requirements of the ISO, NERC, NPCC and New York State Reliability Council. The ISO will administer Operating Reserves markets, in the manner described in this Article 4 and Rate Schedule 4 of this ISO Services Tariff, to satisfy the various Operating Reserves requirements, including locational requirements, established by the Reliability Rules and other applicable reliability standards. The basic Operating Reserves products that will be procured by the ISO on behalf of the market are classified as follows:

(1) Spinning Reserve: Operating Reserves provided by Generators and Demand Side Resources and Aggregations that meet the eligibility criteria set forth in Rate Schedule 4 of this ISO Services Tariff, are already synchronized to the NYS Power System, and can respond to instructions to change their output level, or reduce their Energy usage, within ten (10) minutes. Generators utilizing inverter-based energy storage technology and that otherwise meet the eligibility criteria set forth in this ISO Services Tariff may provide Spinning Reserves. Spinning Reserves may not be provided a Demand Side Resource that facilitates demand reduction using a Local Generator, unless that Local Generator utilizes inverter-based energy storage technology, or by Behind-the-Meter Net Generation Resources that are comprised of more than one generating unit that are dispatched as a single aggregate unit, or Aggregations comprised of one or more (i) generating units (unless each of the generating units use inverter-based energy storage technology) or (ii) Demand Side Resources where at least one Demand Side Resource facilitates its Demand Reduction using a Local Generator (unless the Local Generator(s) use inverter-based energy storage technology);

(2) 10-Minute Non-Synchronized Reserve: Operating Reserves provided by Generators, Aggregations, or Behind-the-Meter Net Generation Resources that are comprised of more than one generating unit that are dispatched as a single aggregate unit, or Demand Side Resources, including Demand Side Resources using Local Generators, that meet the eligibility criteria set forth in Rate Schedule 4 of this ISO Services Tariff and that can be started, synchronized and can change their output level within ten (10) minutes; and

(3) 30-Minute Reserve: Synchronized Operating Reserves provided by Generators and Aggregations, except Behind-the-Meter Net Generation Resources that are comprised of more than one generating unit and dispatched as a single aggregate unit, and Demand Side Resources that do not facilitate demand reduction using Local Generators, or that facilitate demand reduction using a Local Generator utilizing inverter-based energy storage technology or Aggregations that are comprised of one or more (i) generating units (unless each of the generating units use inverter-based energy storage technology) or (ii) Demand Side Resource(s) where at least one Demand Side Resource facilitates its Demand Reduction using a Local Generator (unless the Local Generator(s) use inverter-based energy storage technology); or non-synchronized Operating Reserves provided by Generators, Aggregations, or Behind-the-Meter Net Generation Resources that are comprised of more than one generating unit and dispatched as a single aggregate unit, or Demand Side Resources that meet the eligibility criteria set forth in Rate Schedule 4 of this ISO Services Tariff and that can respond to instructions to change their output level within thirty (30) minutes, including starting and synchronizing to the NYS Power System.

**Operating Reserve Demand Curve**: A series of quantity/price points that defines the maximum Shadow Price for Operating Reserves meeting a particular Operating Reserve requirement corresponding to each possible quantity of Resources that the ISO's software may schedule to meet that requirement.

**Operating Study Power Flow**: A Power Flow analysis that is performed at least once before each Capability Period that is used to determine each Interface Transfer Capability for the Capability Period (See Attachment M to the ISO OATT).

**Operational Control**: Directing the operation of the Transmission Facilities Under ISO Operational Control to maintain these facilities in a reliable state, as defined by the Reliability Rules. The ISO shall approve operational decisions concerning these facilities, made by each Transmission Owner before the Transmission Owner implements those decisions. In accordance with ISO Procedures, the ISO shall direct each Transmission Owner to take certain actions to restore the system to the Normal State. Operational Control includes security monitoring, adjustment of generation and transmission resources, coordination and approval of changes in transmission status for maintenance, determination of changes in transmission status for reliability, coordination with other Control Areas, voltage reductions and Load Shedding, except that each Transmission Owner continues to physically operate and maintain its facilities, including those facilities that it has agreed to operate and maintain in accordance with an operation and maintenance agreement.

**Optimal Power Flow ("OPF")**: As defined in the ISO OATT.

**Order Nos. 888 et seq.**: The Final Rule entitled Promoting Wholesale Competition Through Open Access Non-discriminatory Transmission Services by Public Utilities; Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, issued by the Commission on April 24, 1996, in Docket Nos. RM95-8-000 and RM94-7-001, as modified on rehearing, or upon appeal. (See FERC Stats. & Regs. [Regs. Preambles January 1991 - June 1996] ¶ 31,036 (1996) ("Order No. 888"), on reh'g, III FERC Stats. & Regs. ¶ 31,048 (1997) ("Order No. 888-A"), on reh'g, 81 FERC ¶ 61,248 (1997) ("Order No. 888-B"), order on reh'g, 82 FERC ¶ 61,046 (1998) ("Order No. 888-C")).

**Order Nos. 889 et seq.**: The Final Rule entitled Open Access Same-Time Information System (formerly Real- Time Information Networks) and Standards of Conduct, issued by the Commission on April 24, 1996, in Docket No. RM95-9-000, as modified on rehearing, or upon appeal. (See FERC Stats. & Regs. [Regs. Preambles 1991-1996] ¶ 31,035 (1996) ("Order No. 889"), on reh'g, III FERC Stats. & Regs. ¶ 31,049 (1997) ("Order No. 889-A"), on reh'g, 81 FERC ¶ 61,253 (1997) ("Order No. 889-B")).

**Original Residual TCC:** As defined in the ISO OATT.

**Out-of-Merit**: The designation of Resources committed and/or dispatched by the ISO at specified output limits for specified time periods to meet Load and/or reliability requirements that differ from or supplement the ISO's security constrained economic commitment and/or dispatch.

The ISO may also use Out-of-Merit to reduce the CSR injection Scheduling Limit and/or the CSR withdrawal Scheduling Limit to protect NYCA or local reliability. When the ISO does so the Out-of-Merit for NYCA or local reliability designation shall apply to each of the Generators that is subject to the affected CSR Scheduling Limit.

## 2.16 Definitions - P

**Peak Load Window:** The time period during which a Resource with Energy Duration Limitations must offer Energy in the Day-Ahead Market as specified in Section 5.12.14 of the ISO's Services Tariff.

**Performance Index**: An index, described in ISO Procedures, that tracks a Generator's or an Aggregation's response to AGC signals from the ISO.

**Performance Tracking System**: A system designed to report metrics for Generators, Aggregations, and Loads which include but are not limited to actual output and schedules. This system is used by the ISO to measure compliance with criteria associated with the provision of Energy and Ancillary Services.

**Point-to-Point Transmission Service**: The reservation and transmission of Capacity and Energy on a firm basis from the Point(s) of Receipt to the Point(s) of Delivery under the ISO Tariffs.

**Point(s) of Delivery:** Point(s) on the NYS Transmission System or Proxy Generator Buses where Energy transmitted by the ISO will be made available to the Transmission Customer under the OATT. The Point(s) of Delivery shall be specified pursuant to ISO Procedures.

**Point(s) of Injection ("POI" or "Point of Receipt")**: The point(s) on the NYS Transmission System or Proxy Generator Buses where Energy, Capacity and Ancillary Services will be made available to the ISO by the delivering party under the ISO OATT or the ISO Services Tariff. (May be referred to as "Point of Receipt" or similar in some Existing Transmission Agreements.)

**Point(s) of Receipt:** Point(s) of interconnection on the NYS Transmission System or Proxy Generator Buses where Energy will be made available to the ISO by the Transmission Customer under the OATT. The Point(s) of Receipt shall be specified pursuant to ISO Procedures.

**Point(s) of Withdrawal ("POW" or "Point of Delivery")**: The point(s) on the NYS Transmission System or Proxy Generator Buses where Energy, Capacity and Ancillary Services will be made available to the receiving party under the ISO OATT or the ISO Services Tariff. (May be referred to as "Point of Delivery" or similar in some Existing Transmission Agreements.)

**Pool Control Error ("PCE")**: The difference between the actual and scheduled interchange with other Control Areas, adjusted for frequency bias.

**Post Contingency**: Conditions existing on a system immediately following a Contingency.

**Power Exchange ("PE")**: A commercial entity meeting the requirements for service under the ISO OATT or the ISO Services Tariff that facilitates the purchase and/or sale of Energy, Unforced Capacity and/or Ancillary Services in a New York Wholesale Market. A PE may transact with the ISO on its own behalf or as an agent for others.

**Power Factor**: The ratio of real power to apparent power (the product of volts and amperes, expressed in megavolt-amperes, MVA).

**Power Factor Criteria**: Criteria to be established by the ISO to monitor a Load's use of Reactive Power.

**Power Flow**: A simulation which determines the Energy flows on the NYS Transmission System and adjacent transmission systems.

**Price Adjustment**: For each month in the Prior Equivalent Capability Period, the Price Adjustment equals the quotient of dividing (a) the Henry Hub futures gas price for the like month in the succeeding same-season Capability Period by (b) the average Henry Hub spot gas price for that month in the Prior Equivalent Capability Period.

**Primary Holder**: As defined in the ISO OATT.

**Prior Equivalent Capability Period**: The previous same-season Capability Period.

**Provisional Average Coincident Load ("Provisional ACL")**: Prior to the Summer 2014 Capability Period, the value that may be used in lieu of Average Coincident Load for an eligible Special Case Resource for a maximum duration no greater than three consecutive Capability Periods and only where the SCR (i) has not previously been enrolled with the ISO and (ii) never had interval metering Load data available from the Prior Equivalent Capability Period. Beginning with the Summer 2014 Capability Period, the value that may be used in lieu of ACL for an eligible SCR as provided in Section 5.12.11.1.2 of this Services Tariff. A SCR's Provisional ACL is verified subsequent to each eligible Capability Period pursuant to calculations using the SCR's metered Load values in accordance with Sections 5.12.11.1.1 and 5.12.11.1.2 of this Services Tariff and ISO Procedures. Any Load supported by generation produced from a Local Generator, other behind-the-meter generator, or other supply source located behind the SCR's meter operating during the applicable Capability Period SCR Load Zone Peak Hours may not be included in the SCR's metered Load values reported for the verification of its Provisional ACL.

**Proxy Generator Bus**: A proxy bus located outside the NYCA that is selected by the ISO to represent a typical bus in an adjacent Control Area and at which LBMP prices are calculated. The ISO may establish more than one Proxy Generator Bus at a particular Interface with a neighboring Control Area to enable the NYISO to distinguish the bidding, treatment and pricing of products and services at the Interface.

**PSC**: The Public Service Commission of the State of New York or any successor agency thereto.

**PSL**: The New York Public Service Law, Public Service Law § 1 et seq. (McKinney 1989 & Supp. 1997-98).

**Public Power Entity**: An entity which is either (i) a public authority or corporate municipal instrumentality, including a subsidiary thereof, created by the State of New York that owns or operates generation or transmission and that is authorized to produce, transmit or distribute electricity for the benefit of the public, or (ii) a municipally owned electric system that owns or controls distribution facilities and provides electric service, or (iii) a cooperatively owned electric system that owns or controls distribution facilities and provides electric service.

## 2.17 Definitions - Q

**Qualified Change of Load Condition:** A Special Case Resource enrolled with an Average Coincident Load, Provisional Average Coincident Load, or Net Average Coincident Load, in accordance with this Services Tariff, meets a Qualified Change of Load Condition when: (i) the SCR is expected to have a reduction in total Load that meets or exceeds the SCR Load Change Reporting Threshold that is expected to continue for a total period that is greater than seven (7) consecutive days, (ii) the SCR is experiencing a reduction in total Load that meets or exceeds the SCR Load Change Reporting Threshold that is expected to continue for a total period that is greater than seven (7) consecutive days, or (iii) the SCR experienced an unanticipated reduction in total Load that meets or exceeds the SCR Load Change Reporting Threshold for a period greater than seven (7) consecutive days within any month in which the SCR sold capacity or adjoining months in which the SCR sold capacity in either month.

**Qualified Change of Status Condition:** A Special Case Resource enrolled with an Average Coincident Load, Provisional Average Coincident Load, or Net Average Coincident Load, in accordance with this Services Tariff meets a Qualified Change of Status Condition when: (i) the SCR is expected to have a reduction in total Load that meets or exceeds the SCR Load Change Reporting Threshold that will extend for a period of greater than sixty (60) consecutive days, (ii) the SCR is experiencing a reduction in total Load that meets or exceeds the SCR Load Change Reporting Threshold that is expected to continue for a total period that is greater than sixty (60) consecutive days, or (iii) the SCR has experienced an unanticipated reduction in total Load that meets or exceeds the SCR Load Change Reporting Threshold that has existed for a period greater than sixty (60) consecutive days in which the SCR sold capacity.

**Qualified Non-Generator Voltage Support Resource**: A resource that is neither a Generator, nor a Distributed Energy Resource, nor a synchronous condenser but that is capable of providing the ISO with Reactive Power on a dynamic basis, that is energized and under the operational control of the ISO, or a Transmission Owner, that meets the resource-specific technical and testing criteria specified in the ISO Procedures, and that is ineligible to receive Reactive Power compensation other than as a Qualified Non-Generator Voltage Support Resource. The Cross-Sound Scheduled Line shall be a Qualified Non-Generator Voltage Support Resource, provided that it meets the technical and testing criteria in the ISO Procedures.

**Quick Start Mode**: The setting of a block of generator units capable of remote start-up by a Transmission Owner so that it can synchronize and reach full output within fifteen (15) minutes.

**Quick Start Reserves**: Capacity of a block of generator units that is set to Quick Start Mode by request of a Transmission Owner.

## 2.18 Definitions - R

**Ramp Capacity**: The amount of change in the Desired Net Interchange that generation located in the NYCA can support at any given time. Ramp capacity may be calculated for all Interfaces between the NYCA and neighboring Control Areas as a whole or for any individual Interface between the NYCA and an adjoining Control Area.

**RCRR TCC**: As defined in the ISO OATT.

**Reactive Power (MVAr)**: The product of voltage and the out-of-phase component of alternating current. Reactive Power, usually measured in MVAr, is produced by capacitors (synchronous condensers), Qualified Non-Generator Voltage Support Resources, and over-excited Generators and absorbed by reactors or under-excited Generators and other inductive devices including the inductive portion of Loads.

**Real Power Losses**: The loss of Energy, resulting from transporting power over the NYS Transmission System, between the Point of Injection and Point of Withdrawal of that Energy.

**Real-Time Bid**: A Bid submitted into the Real-Time Commitment before the close of the Real-Time Scheduling Window. A Real-Time Bid shall also include a CTS Interface Bid.

**Real-Time Commitment ("RTC")**: A multi-period security constrained unit commitment and dispatch model that co-optimizes to solve simultaneously for Load, Operating Reserves and Regulation Service on a least as-bid production cost basis over a two hour and fifteen minute optimization period. The optimization evaluates the next ten points in time separated by fifteen minute intervals. Each RTC run within an hour shall have a designation indicating the time at which its results are posted; "$RTC_{00}$," "$RTC_{15}$," "$RTC_{30}$," and "$RTC_{45}$" post on the hour, and at fifteen, thirty, and forty-five minutes after the hour, respectively. Each RTC run will produce binding commitment instructions for the periods beginning fifteen and thirty minutes after its scheduled posting time and will produce advisory commitment guidance for the remainder of the optimization period. $RTC_{15}$ will also establish hourly External Transaction schedules, while all RTC runs may establish 15 minute External Transaction schedules at Variably Scheduled Proxy Generator Buses. Additional information about RTC's functions is provided in Section 4.4.2 of this ISO Services Tariff.

**Real-Time Dispatch ("RTD")**: A multi-period security constrained dispatch model that co-optimizes to solve simultaneously for Load, Operating Reserves, and Regulation Service on a least-as-bid production cost basis over a fifty, fifty-five or sixty-minute period (depending on when each RTD run occurs within an hour). The Real-Time Dispatch dispatches, but does not commit, Resources, except that RTD may commit, for pricing purposes, Resources meeting Minimum Generation Levels and capable of starting in ten minutes. RTD may also establish 5 minute External Transaction schedules at Dynamically Scheduled Proxy Generator Buses. Real-Time Dispatch runs will normally occur every five minutes. Additional information about RTD's functions is provided in Section 4.4.3 of this ISO Services Tariff. Throughout this ISO Services Tariff the term "RTD" will normally be used to refer to both the Real-Time Dispatch and to the specialized Real-Time Dispatch Corrective Action Mode software.

**Real-Time Dispatch–Corrective Action Mode ("RTD-CAM")**: A specialized version of the Real-Time Dispatch software that will be activated when it is needed to address unanticipated system conditions.  RTD-CAM is described in Section 4.4.4 of this ISO Services Tariff.

**Real-Time LBMP**: The LBMPs established through the ISO Administered Real-Time Market.

**Real-Time Market**: The ISO Administered Markets for Energy and Ancillary Services resulting from the operation of the RTC and RTD.

**Real-Time Minimum Run Qualified Gas Turbine**: One or more gas turbines, offered in the Real-Time Market, which, because of their physical operating characteristics, may qualify for a minimum run time of two hours in the Real-Time Market.  Characteristics that qualify gas turbines for this treatment are established by ISO Procedures and include using waste heat from the gas turbine-generated electricity to make steam for the generation of additional electricity via a steam turbine.

**Real-Time Scheduled Energy**: The quantity of Energy that a Supplier is directed to provide in real-time by the ISO.  Injections and Demand Reductions are indicated by positive Base Point Signals and withdrawals are indicated by negative Base Point Signals.  Unless otherwise directed by the ISO, Dispatchable Supplier's Real-Time Scheduled Energy is equal to its RTD Base Point Signal, or, if it is providing Regulation Service, to its AGC Base Point Signal, and an ISO-Committed Fixed or Self-Committed Fixed Supplier's Real-Time Scheduled Energy is equal to its bid output level in real-time.

**Real-Time Scheduling Window**: The period of time within which the ISO accepts offers and bids to sell and purchase Energy and Ancillary Services in the Real-Time Market for a given hour which period closes seventy-five (75) minutes before the start of that hour, or eighty-five (85) minutes before the start of that hour for Bids to schedule External Transactions at the Proxy Generator Buses associated with the Cross-Sound Scheduled Line, the Neptune Scheduled Line, the Linden VFT Scheduled Line, or the HTP Scheduled Line.

**Reconfiguration Auction**: As defined in the ISO OATT.

**Reference Bus**: The location on the NYS Transmission System relative to which all mathematical quantities, including Shift Factors and penalty factors relating to physical operation, will be calculated.  The NYPA Marcy 345 kV transmission substation is designated as the Reference Bus.

**Reference Month:** For purposes of the Net Benefits Test, the calendar month that is twelve months prior to the Study Month.

**Regulation Capacity**: The Energy or Demand Reduction capability, measured in MW, that a Regulation Service provider offers and/or which it is scheduled to provide for Regulation Service.

**Regulation Capacity Market Price**: The price for Regulation Capacity determined by the ISO pursuant to section 15.3 of this Services Tariff.

**Regulation Capacity Response Rate:** The Regulation Capacity a Resource is capable of providing over five minutes, measured in MW/minute which shall not exceed the lowest normal energy response rate provided for the Resource and which must be sufficient to permit that Resource to provide the Regulation Capacity (in MW) offered within a five-minute RTD interval. Reference to a Regulation response rate shall be a reference to the Regulation Capacity Response Rate.

**Regulation Movement**: The absolute value of the change in Energy or Demand Reduction over a six second interval, measured in MW, that a Regulation Service provider is instructed to deliver for the purpose of providing Regulation Service.

**Regulation Movement Market Price**: The price for Regulation Movement as determined by the ISO pursuant to section 15.3 of this Services Tariff.

**Regulation Movement Multiplier**: A factor with the value of eight (8), used with the Regulation Movement Bids, to schedule Regulation Service providers in both the Day-Ahead and Real-Time Energy markets. The ISO calculates the Regulation Movement Multiplier based on the historical relationship between the number of MW of Regulation Capacity that the ISO seeks to maintain in each hour and the number of Regulation Movement MW instructed by AGC in each hour.

**Regulation Movement Response Rate**: The amount of Regulation Movement a Regulation Service provider is capable of delivering in six seconds which shall not be less than, but can be equal to or greater than, the Regulation Capacity Response Rate equivalent.

**Regulation Service:** The Ancillary Service defined by the Commission as “frequency regulation” and that is instructed as Regulation Capacity in the Day-Ahead Market and as Regulation Capacity and Regulation Movement in the Real-Time Market as is further described in Section 15.3 of the Services Tariff. Day-Ahead and Real-Time Bids to provide Regulation Service shall include a Bid for Regulation Capacity and a Bid for Regulation Movement. The Regulation Service requirement or target level shall be for MW of Regulation Capacity.

**Regulation Service Demand Curve**: A series of quantity/price points that defines the maximum Shadow Price for Regulation Service corresponding to each possible quantity of Resources that the ISO’s software may schedule to satisfy the ISO’s Regulation Service constraint. A single Regulation Service Demand Curve will apply to both the Day-Ahead Market and the Real-Time Market for Regulation Service. The Shadow Price for Regulation Service shall be used to calculate Regulation Service payments under Rate Schedule 3 of this ISO Services Tariff.

**Regulation Revenue Adjustment Charge (“RRAC”)**: A charge that will be assessed against certain Regulation Service Providers that are providing Regulation Service under Section 15.3.6 of Rate Schedule 3 to this ISO Services Tariff.

**Regulation Revenue Adjustment Payment (“RRAP”)**: A payment that will be made to certain Regulation Service Providers that are providing Regulation Service under Section 15.3.6 of Rate Schedule 3 to this ISO Services Tariff.

**Reliability Rules**: Those rules, standards, procedures and protocols developed and promulgated by the NYSRC, including Local Reliability Rules, in accordance with NERC, NPCC, FERC, PSC and NRC standards, rules and regulations and other criteria and pursuant to the NYSRC Agreement.

**Repair Plan**: A work plan, set of actions, and time frame for such actions, that is necessary to repair a Generator and return it to service as described in Section 5.18.1 of this Services Tariff**.**

**Required System Capability**: Generation capability required to meet an LSE's peak Load plus Installed Capacity Reserve obligation as defined in the Reliability Rules.

**Reserve Performance Index**: An index created by the ISO for the purpose of calculating the Day Ahead Margin Assurance Payment pursuant to Attachment J of this Services Tariff made to Demand Side Resources scheduled to provide Operating Reserves in the Day-Ahead Market.

**Residual Adjustment**: The adjustment made to ISO costs that are recovered through Schedule 1 of the OATT. The Residual Adjustment is calculated pursuant to Schedule 1 of the OATT.

**Residual Capacity Reservation Right ("RCRR")**: As defined in the ISO OATT.

**Residual Transmission Capacity**: As defined in the ISO OATT.

**Resource**: An Aggregation, or an Energy Limited Resource, Energy Storage Resource, Limited Energy Storage Resource, Generator, Installed Capacity Marketer, Special Case Resource, Intermittent Power Resource, Limited Control Run of River Hydro Resource, municipally-owned generation, System Resource, BTM:NG Resource, Demand Side Resource or Control Area System Resource that is not participating in an Aggregation.

**Resource with Energy Duration Limitation:** A Resource that is not capable of supplying its ICAP equivalent of UCAP sold in each hour of the day due to a run-time limitation, such as an Energy storage limitation or permit restriction, and has elected an Energy Duration Limitation as specified in Section 5.12.14 of the ISO Services Tariff.

**Responsible Interface Party ("RIP")**: A Customer that is authorized by the ISO to be the Installed Capacity Supplier for one or more Special Case Resources and that agrees to certain notification and other requirements as set forth in this Services Tariff and in the ISO Procedures.

**Rest of State**: The set of all non-Locality NYCA LBMP Load Zones. As of the 2014/2015 Capability Year, Rest of State includes all NYCA LBMP Load Zones other than LBMP Load Zones G, H, I, J and K.

**Retired**: A Generator that has permanently ceased operating on or after May 1, 2015 either: i) pursuant to applicable notice; or ii) as a result of the expiration of its Mothball Outage or of its ICAP Ineligible Forced Outage.

**RMR Agreement**: Shall have the meaning specified in Section 1.18 of the ISO's Open Access Transmission Tariff.

**RMR Avoidable Costs**: Shall have the meaning specified in Section 1.18 of the ISO's Open Access Transmission Tariff.

**RMR Generator**: Shall have the meaning specified in Section 1.18 of the ISO's Open Access Transmission Tariff.

**Rolling RTC**: The RTC run that is used to schedule a given 15-minute External Transaction. The Rolling RTC may be an RTC00, RTC15, RTC30 or RTC45 run.

**Roundtrip Efficiency:** The ratio of energy injections to energy withdrawals for an Energy Storage Resource or Aggregation comprised entirely of Energy Storage Resources.

## 2.19 Definitions - S

**Safe Operations**: Actions which avoid placing personnel and equipment in peril with regard to the safety of life and equipment damage.

**Scarcity Reserve Demand Curve:** A series of quantity/price points that defines the maximum Shadow Price for Operating Reserves to meet a Scarcity Reserve Requirement for which the pricing rules established in Section 15.4.6.1.1(b) of Rate Schedule 4 of this ISO Services Tariff apply corresponding to each possible quantity of Resources that the ISO's software may schedule to satisfy that requirement. A single Scarcity Reserve Demand Curve will apply to the Real-Time Market for each such Scarcity Reserve Requirement.

**Scarcity Reserve Region:** A Load Zone or group of Load Zones containing EDRP and/or SCRs that have been called by the ISO to address the same reliability need, as such reliability need is determined by the ISO.

**Scarcity Reserve Requirement:** A 30-Minute Reserve requirement established by the ISO for a Scarcity Reserve Region in accordance with Rate Schedule 4 of this ISO Services Tariff.

**Scheduled Energy Injections:** As defined in the ISO OATT.

**Scheduled Energy Withdrawals**: As defined in the ISO OATT.

**Scheduled Line**: A transmission facility or set of transmission facilities: (a) that provide a distinct scheduling path interconnecting the ISO with an adjacent control area, (b) over which Customers are permitted to schedule External Transactions, (c) for which the ISO separately posts TTC and ATC, and (d) for which there is the capability to maintain the Scheduled Line actual interchange at the DNI, or within the tolerances dictated by Good Utility Practice. Each Scheduled Line is associated with a distinct Proxy Generator Bus. Transmission facilities shall only become Scheduled Lines after the Commission accepts for filing revisions to the NYISO's tariffs that identify a specific set or group of transmission facilities as a Scheduled Line. The transmission facilities that are Scheduled Lines are identified in Section 4.4.4 of the Services Tariff.

**SCR Aggregation:** One or more Special Case Resources registered by the Responsible Interface Party at a single PTID, with the Load of each Special Case Resource electrically located within the same single Load Zone and the total of all Loads at the PTID greater than or equal to 0.1 MW.

**SCR Change of Load:** A decrease in the Load of the SCR that meets the criteria of a Qualified Change of Load Condition and the SCR Load Change Reporting Threshold in accordance with this Services Tariff and results in a total Load reduction, within the range of hours that corresponds with the Capability Period SCR Load Zone Peak Hours, and the total Load reduction persists for more than seven (7) and less than or equal to sixty (60) continuous days from the first date of the reduction of the Load.

**SCR Change of Status:** The decrease to be treated as an adjustment to the applicable Average Coincident Load of a Special Case Resource when the SCR meets the criteria of a Qualified Change of Status Condition and the SCR Load Change Reporting Threshold in accordance with this Services Tariff and results in a total Load reduction, within the range of hours that corresponds with the Capability Period SCR Load Zone Peak Hours, and the total Load reduction persists for more than sixty (60) continuous days from the first date of the reduction of the Load.

**SCR Load Change Reporting Threshold:** For a Special Case Resource with an applicable ACL greater than or equal to 500 kW, a reduction or increase in total Load not attributable to fluctuations in Load due to weather as described in ISO Procedures, that is equal to or greater than (i) thirty (30) percent of the applicable ACL for any month within the Capability Period, or (ii) five (5) MW in the NYC Locality or ten(10) MW if in any other Load Zone; whichever is less. For SCRs that elect to enroll with an Incremental ACL and do not increase the eligible Installed Capacity associated with the SCR, the RIP may enroll the SCR with a lower percentage change to its total Load increase as specified in Section 5.12.11.1.5 of this Services Tariff.

**SCUC**: Security Constrained Unit Commitment, described in Section 4.2.4 of this ISO Services Tariff.

**Secondary Holder**: As defined in the ISO OATT.

**Second Settlement**: The process of: (1) identifying differences between Energy production, Energy consumption or NYS Transmission System usage scheduled in a First Settlement and actual production, consumption, or usage during the Dispatch Day; and (2) assigning financial responsibility for those differences to the appropriate Customers and Market Participants. Charges for Energy supplied (to replace generation deficiencies or unscheduled consumption), and payments for Energy consumed (to absorb consumption deficiencies or excess Energy supply) or changes in transmission usage will be based on the Real-Time LBMPs.

**Secondary Market**: As defined in the ISO OATT.

**Security Coordinator**: An entity that provides the security assessment and Emergency operations coordination for a group of Control Areas. A Security Coordinator must not participate in the wholesale or retail merchant functions.

**Self-Committed Fixed**: A bidding mode in which a Generator or Aggregation is self-committed and opts not to be Dispatchable over any portion of its operating range.

**Self-Committed Flexible**: A bidding mode in which a Dispatchable Generator or Aggregation follows Base Point Signals within a portion of its operating range, but self-commits.

**Self-Managed Energy Level**: A Bid parameter which when selected indicates that an Energy Storage Resource's, or Aggregation comprised entirely of Energy Storage Resources, Energy Level constraints will not be directly accounted for in the optimization. *See* Sections 4.2.1.3.4 and 4.4.2.1 of this Services Tariff.

**Self-Supply**: The provision of certain Ancillary Services, or the provision of Energy to replace Marginal Losses by a Transmission Customer using either the Transmission Customer's own Generators or generation obtained from an entity other than the ISO.

**Service Agreement**: The agreement, in the form of Attachment A to the Tariff, and any amendments or supplements thereto entered into by a Customer and the ISO of service under the Tariff, or any unexecuted Service Agreement, amendments or supplements thereto, that the ISO unilaterally files with the Commission.

**Service Commencement Date**: The date that the ISO begins to provide service pursuant to the terms of a Service Agreement, or in accordance with the Tariff.

**Settlement**: The process of determining the charges to be paid to, or by, a Customer to satisfy its obligations.

**Shadow Price**: The marginal value of relieving a particular Constraint which is determined by the reduction in system cost that results from an incremental relaxation of that Constraint.

**Shift Factor ("SF")**: A ratio, calculated by the ISO, that compares the change in power flow through a transmission facility resulting from the incremental injection and withdrawal of power on the NYS Transmission System.

**Shutdown Period**: An ISO approved period of time immediately following a shutdown order, such as a zero base point, that has been designated by the Customer, during which unstable operation prevents the unit from accurately following its base points. The Shut-Down Period shall be set to zero for a BTM:NG Resource, an Energy Storage Resource, and an Aggregation.

**Sink Price Cap Bid**: A monotonically increasing Bid curve provided by an entity engaged in an Export, other than an entity submitting a CTS Interface Bid, to indicate the relevant Proxy Generator Bus LBMP at or below which that entity is willing to either purchase Energy in the LBMP Markets or, in the case of Bilateral Transactions, to accept Transmission Service, where the MW amounts on the Bid curve represent the desired increments of Energy that the entity is willing to purchase at various price points.

**Southeastern New York ("SENY"):** An electrical area comprised of Load Zones G, H, I, J, and K, as identified in the ISO Procedures.

**Special Case Resource ("SCR")**: Demand Side Resources whose Load is capable of being interrupted upon demand at the direction of the ISO, and/or Demand Side Resources that have a Local Generator, which is not visible to the ISO's Market Information System and is rated 100 kW or higher, that can be operated to reduce Load from the NYS Transmission System or the distribution system at the direction of the ISO. Special Case Resources are subject to special rules, set forth in Section 5.12.11.1 of this ISO Services Tariff and related ISO Procedures, in order to facilitate their participation in the Installed Capacity market as Installed Capacity Suppliers.

**Special Case Resource Capacity**: The Installed Capacity Equivalent of the Unforced Capacity which has been sold by a Special Case Resource in the Installed Capacity market during the current Capability Period.

**Start-Up Period**: An ISO approved period of time immediately following synchronization to the Bulk power system, which has been designated by a Customer and bid into the Real-Time Market, during which unstable operation prevents the unit from accurately following its base points. The Start-Up Period shall be set to zero for a BTM:NG Resource and Energy Storage Resource and an Aggregation.

**Station Power**: Station Power shall mean the Energy used by a Generator:

1. for operating electric equipment located on the Generator site, or portions thereof, owned by the same entity that owns the Generator, which electrical equipment is used by the Generator exclusively for the production of Energy and any useful thermal energy associated with the production of Energy; and
2. for the incidental heating, lighting, air conditioning and office equipment needs of buildings, or portions thereof, that are: owned by the same entity that owns the Generator; located on the Generator site; and
3. used by the Generator exclusively in connection with the production of Energy and any useful thermal energy associated with the production of Energy.

Station Power does not include any Energy: (i) used to power synchronous condensers; (ii) used for pumping at a pumped storage facility or for charging Limited Energy Storage Resources and Energy Storage Resources when that Energy is stored for later injection back to the grid; (iii) provided during a Black Start restoration by Generators that provide Black Start Capability Service; or (iv) used by a Resource in an Aggregation.

**Start-Up Bid**: A Bid parameter that may vary hourly and that identifies the payment a Supplier requires to bring a Generator up to its specified minimum operating level from an offline state or a Demand Side Resource from a level of no Demand Reduction to its specified minimum level of Demand Reduction. If the Supplier is a BTM:NG Resource, Energy Storage Resource, or an Aggregation, it shall not submit a Start-Up Bid.

Start-Up Bids submitted for a Generator that is not able to complete its specified minimum run time (of up to a maximum of 24 hours) within the Dispatch Day are expected to include expected net costs related to the hour(s) that a Generator needs to run on the day following the Dispatch Day in order to complete its minimum run time. The component of the Start-Up Bid that incorporates costs that the Generator expects to incur on the day following the Dispatch Day is expected to reflect the operating costs that the Supplier does not expect to be able to recover through LBMP revenues while operating to meet the Generator’s minimum run time, at the minimum operating level Bid for that Generator for the hour of the Dispatch Day in which the Generator is scheduled to start-up. Settlement rules addressing Start-Up Bids that incorporates costs related to the hours that a Generator needs to run on the day following the Dispatch Day on which the Generator is committed are set forth in Attachment C to this ISO Services Tariff.

**Storm Watch**: Actual or anticipated severe weather conditions under which region-specific portions of the NYS Transmission System are operated in a more conservative manner by reducing transmission transfer limits.

**Strandable Costs**: Prudent and verifiable expenditures and commitments made pursuant to a Transmission Owner's legal obligations that are currently recovered in the Transmission Owner's retail or wholesale rate that could become unrecoverable as a result of a restructuring of the electric utility industry and/or electricity market, or as a result of retail-turned-wholesale customers, or customers switching generation or Transmission Service suppliers.

**Stranded Investment Recovery Charge**: A charge established by a Transmission Owner to recover Strandable Costs.

**Study Month**: The calendar month for which the ISO calculates the Monthly Net Benefit Offer Floor, in accordance with Section 4.2.1.9 of the ISO Services Tariff and ISO Procedures.

**Subzone**: That portion of a Load Zone in a Transmission Owner's Transmission District.

**Supplemental Event Interval**: Any RTD interval in which there is a maximum generation pickup or a large event reserve pickup or which is one of the three RTD intervals following the termination of the maximum generation pickup or the large event reserve pickup.

**Supplemental Resource Evaluation ("SRE")**: A determination of (i) the least cost selection of additional Generators or Aggregations, which are to be committed to meet changed or local system conditions for the Dispatch Day that may cause the Day-Ahead schedules for the Dispatch Day to be inadequate to meet the reliability requirements of the Transmission Owner's local system or to meet Load or reliability requirements of the ISO; or (ii) the least cost selection of additional Generators, which are committed to meet forecast Load and reserve requirements over the six-day period that follows the Dispatch Day. An Aggregation or ESR is expected to be available in real-time and capable of injecting Energy at its full capability for all of the SRE commitment hours it receives

**Supplier**: A Party that is supplying the Capacity, Demand Reduction, Energy and/or associated Ancillary Services to be made available under the ISO OATT or the ISO Services Tariff, including Generators, BTM:NG Resources, Energy Storage Resources, Demand Side Resources, and Aggregations that satisfy all applicable ISO requirements.

**System Resource**: A portfolio of Unforced Capacity provided by Resources located in a single ISO-defined Locality, the remainder of the NYCA, or any single External Control Area, that is owned by or under the control of a single entity, which is not the operator of the Control Area where such Resources are located, and that is made available, in whole or in part, to the ISO.

## 2.20 Definitions - T

**Tangible Net Worth**: The value, determined by the ISO, of all of a Customer's assets less both: (i) the amount of the Customer's liabilities and (ii) all of the Customer's intangible assets, including, but not limited to, patents, trademarks, franchises, intellectual property, and goodwill.

**Testing Period**: An ISO approved period of time during which a Generator is testing equipment and during which unstable operation prevents the unit from accurately following its base points.

**Third Party Transmission Wheeling Agreements ("Third Party TWAs")**: A Transmission Wheeling Agreement, as amended, between Transmission Owners or between a Transmission Owner and an entity that is not a Transmission Owner. Third Party TWAs are associated with the purchase (or sale) of Energy, Capacity, and/or Ancillary Services for the benefit of an entity that is not a Transmission Owner. All Third Party TWAs are listed in Table 1 A of Attachment L to the ISO OATT, and are designated in the "Treatment "column of Table 1A, as "Third Party TWA."

**Total Transfer Capability ("TTC")**: The amount of electric power that can be transferred over the interconnected transmission network in a reliable manner**.**

**Trading Hub**: A virtual location in a given Load Zone, modeled as a Generator bus and/or Load bus, for scheduling Bilateral Transactions in which both the POI and POW are located within the NYCA.

**Trading Hub Energy Owner**: A Customer who buys energy in a Bilateral Transaction in which the POW is a Trading Hub, or who sells energy in a Bilateral Transaction in which the POI is a Trading Hub.

**Transaction**: The purchase and/or sale of Energy or Capacity, or the sale of Ancillary Services. A Transaction bid into the Energy market to sell or purchase Energy or to schedule a Bilateral Transaction includes a Point of Injection and a Point of Withdrawal.

**Transfer Capability**: The measure of the ability of interconnected electrical systems to reliably move or transfer power from one area to another over all transmission facilities (or paths) between those areas under specified system conditions.

**Transmission Congestion Contract Component ("TCC Component")**: A component of the Operating Requirement, calculated in accordance with Section 26.4.2 of Attachment K to this Services Tariff.

**Transmission Congestion Contracts ("TCCs")**: As defined in the ISO OATT.

**Transmission Customer**: Any entity (or its designated agent) that requests or receives Transmission Service pursuant to a Service Agreement and the terms of the ISO OATT.

**Transmission District**: The geographic area in which a Transmission Owner, including LIPA, is obligated to serve Load, as well as the customers directly interconnected with the transmission facilities of the Power Authority of the State of New York.

**Transmission Facilities Under ISO Operational Control**: The transmission facilities of the Transmission Owners listed in Appendix A-1 of the ISO/TO Agreement ("Listing of Transmission Facilities Under ISO Operational Control") and listed in Appendix A-1 of an Operating Agreement ("NTO Transmission Facilities Under ISO Operational Control") that are subject to the Operational Control of the ISO. This listing may be amended from time-to-time as specified in the ISO/TO Agreement and Operating Agreements.

**Transmission Facilities Requiring ISO Notification**: The transmission facilities of the Transmission Owners listed in Appendix A-2 of the ISO/TO Agreement ("Listing of Transmission Facilities Requiring ISO Notification") and listed in Appendix A-2 of an Operating Agreement ("NTO Transmission Facilities Requiring ISO Notification") whose status of operation must be provided to the ISO by the Transmission Owners (for the purposes stated in the ISO Tariffs and in accordance with the ISO Tariffs, ISO/TO Agreement, and/or Operating Agreements) prior to the Transmission Owners making operational changes to the state of these facilities. This listing may be amended from time-to-time as specified in the ISO/TO Agreement and Operating Agreements.

**Transmission Facility Agreement ("TFA")**: Agreements governing the use of specific or designated transmission facilities charges to cover all, or a portion, of the costs to install, own, operate, or maintain transmission facilities, to the customer under the agreement and that have provisions to provide Transmission Service utilizing said transmission facilities. All Transmission Facility Agreements are listed in Attachment L. Table 1A, and are designated in the "Treatment" column as "Facility Agmt. – MWA."

**Transmission Fund ("T-Fund")**: The mechanism used under the current NYPP Agreement to compensate the Member Systems for providing Transmission Service for economy Energy Transactions over their transmission systems. Each Member System is allocated a share of the economy Energy savings in dollars assigned to the fund that is based on the ratio of their investment in transmission facilities to the sum of investments in transmission and generation facilities.

**Transmission Node:** A bus located inside the NYCA that is identified by the ISO to represent an electrical area to which individual Distributed Energy Resources may aggregate and at which LBMPs are calculated.

**Transmission Owner**: The public utility or authority (or its designated agent) that owns facilities used for the transmission of Energy in interstate commerce and provides Transmission Service under the Tariff.

**Transmission Owner's Monthly Transmission System Peak**: The maximum hourly firm usage as measured in megawatts ("MW") of the Transmission Owner's transmission system in a calendar month.

**Transmission Reliability Margin ("TRM")**: The amount of TTC reserved by the ISO to ensure the interconnected transmission network is secure under a reasonable range of uncertainties in system conditions.

**Transmission Service**: Point-To-Point Network Integration or Retail Access Transmission Service provided under the ISO OATT.

**Transmission Service Charge ("TSC")**: A charge designed to ensure recovery of the embedded cost of a transmission system owned by a Member System.

**Transmission Shortage Cost**: A pricing mechanism utilized in determining the Shadow Price of a particular transmission Constraint that will be used in calculating LBMP in accordance with Section 17.1.4 of Attachment B of this ISO Services Tariff.

**Transmission System**: The facilities operated by the ISO that are used to provide Transmission Services under the ISO OATT.

**Transmission Usage Charge ("TUC")**: Payments made by the Transmission Customer to cover the cost of Marginal Losses and, during periods of time when the transmission system is constrained, the marginal cost of Congestion. The TUC is equal to the product of: (1) the LBMP at the POW minus the LBMP at the POI (in $/MWh); and (2) the scheduled or delivered Energy (in MWh).

**Transmission Wheeling Agreement ("TWA")**: The Agreements listed in Table 1A of Attachment L to the ISO OATT governing the use of specific or designated transmission facilities that are owned, controlled or operated by an entity for the transmission of Energy in interstate commerce. TWAs between Transmission Owners have been modified such that all TWAs between Transmission Owners are now MWAs.

## 2.21 Definitions - U

**Unforced Capacity**: The measure by which Installed Capacity Suppliers will be rated, in accordance with formulae set forth in the ISO Procedures, to quantify the extent of their contribution to satisfy the NYCA Installed Capacity Requirement, and which will be used to measure the portion of that NYCA Installed Capacity Requirement for which each LSE is responsible.

**Unforced Capacity Deliverability Rights**: Unforced Capacity Deliverability Rights ("UDRs") are rights, as measured in MWs, associated with (i) new incremental controllable transmission projects, and (ii) new projects to increase the capability of existing controllable transmission projects that have UDRs, that provide a transmission interface to a Locality. When combined with Unforced Capacity which is located in an External Control Area or non-constrained NYCA region either by contract or ownership, and which is deliverable to the NYCA interface in the Locality in which the UDR transmission facility is electrically located, UDRs allow such Unforced Capacity to be treated as if it were located in the Locality, thereby contributing to an LSE's Locational Minimum Installed Capacity Requirement. To the extent the NYCA interface is with an External Control Area the Unforced Capacity associated with UDRs must be deliverable to the Interconnection Point.

**UCAP Component**: A component of the Operating Requirement, calculated in accordance with Section 26.4.2 of Attachment K to this Services Tariff.

**Unrated Customer**: A Customer that does not currently have a senior long-term unsecured debt rating or issuer rating from Standard & Poor's, Moody's, Fitch, or Dominion, and that has not received an ISO Equivalency Rating.

**Unsecured Credit**: A basis for satisfying part of a Customer's Operating Requirement on the basis of the Customer's creditworthiness. The amount of a Customer's Unsecured Credit shall be determined in accordance with Section 26.5 of Attachment K to this Services Tariff.

**Upper Storage Limit:** The maximum amount of Energy an Energy Storage Resource, or an Aggregation comprised entirely of Energy Storage Resources, is physically capable of storing.

## 2.23 Definitions - W

**West of Central-East ("West" or "Western")**: An electrical area comprised of Load Zones A, B, C, D, and E, as identified in the ISO Procedures.

**Wheels Through**: Transmission Service, originating in another Control Area, that is wheeled through the NYCA to another Control Area.

**Wheels Through Credit Requirement:** A component of the External Transaction Component of the Operating Requirement, calculated in accordance with Section 26.4.2 of Attachment K to this Services Tariff.

**Wholesale Market**: The sum of purchases and sales of Energy and Capacity for resale along with Ancillary Services needed to maintain reliability and power quality at the transmission level coordinated together through the ISO and Power Exchanges. A party who purchases Energy, Capacity or Ancillary Services in the Wholesale Market to serve its own Load is considered to be a participant in the Wholesale Market.

**Wholesale Transmission Services Charges ("WTSC")**: Those charges calculated pursuant to Attachment H of the OATT, incurred or declared overdue by a Transmission Owner pursuant to Section 26.4.2 of Attachment K, after the effective date of these revisions; provided, however, that these provisions will not apply to pre-petition bankruptcy debts for a company that is currently in bankruptcy.

**Wind and Solar Energy Forecast**: The ISO's forecast of Energy that is expected to be supplied over a specified interval of time by an Intermittent Power Resource that depends on wind or solar energy as its fuel and which is used in ISO's Energy market commitment and dispatch. The Wind Energy Forecast does not include a forecast of Energy for Intermittent Power Resources depending on wind as its fuel that participate in a DER Aggregation.

**Wind and Solar Output Limit**: A Base Point Signal calculated for an Intermittent Power Resource depending on wind or solar energy as its fuel and which, when sent to the Intermittent Power Resource, shall include a separate flag directing the Intermittent Power Resource not to exceed its Base Point Signal. Intermittent Power Resources that depend on wind or solar energy as their fuel shall be eligible to receive a Wind and Solar Output Limit, except for those in commercial operation as of January 1, 2002 with name plate capacity of 12 MWs or fewer and Intermittent Power Resources depending on wind as their fuel that participate in a DER Aggregation.

**Withdrawal-Eligible Generator:** A Generator that is eligible to withdraw energy from the grid at a price for the purposes of recharging or refilling for later injection back into the grid.

**WTSC Component**: A component of the Operating Requirement, calculated in accordance with Section 26.4.2, of Attachment K to this Services Tariff.

## 4.1 Market Services - General Rules

### 4.1.1 Overview

Market Services include all services and functions performed by the ISO under this Tariff related to the sale and purchase of Energy, Capacity or Demand Reductions, and the payment to Suppliers who provide Ancillary Services in the ISO Administered Markets.

### 4.1.2 Independent System Operator Authority

The ISO shall provide all Market Services in accordance with the terms of the ISO Services Tariff and the ISO Related Agreements. The ISO shall be the sole point of Application for all Market Services provided in the NYCA. Each Market Participant that sells or purchases Energy, including Demand Side Resources, Special Case Resources and Emergency Demand Response Program participants, sells or purchases Capacity, or provides Ancillary Services in the ISO Administered Markets utilizes Market Services and must take service as a Customer under this Tariff and enter into a Service Agreement under the Tariff, as set forth in Attachment A; 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, must take service as a Customer under this Tariff and enter into a Service Agreement under this Tariff, as set forth in Attachment A; and each entity that has its virtual bids accepted and thereby engages in Virtual Transactions and each entity that purchases Transmission Congestion Contracts, excluding Transmission Congestion Contracts that are created prior to January 1, 2010, utilizes Market Services and must take service as a Customer under this Tariff and enter into a Services Agreement under this Tariff, as set forth in Attachment A. Each Customer that utilizes Market Services also utilizes Transmission Service and shall obtain Transmission

Service under the ISO OATT.

### 4.1.3 Informational and Reporting Requirements

4.1.3.1 The ISO shall operate and maintain an OASIS, including a Bid/Post System that will facilitate the posting of Bids to supply Energy and Ancillary Services and Demand Reductions by Suppliers for use by the ISO and the posting of Locational Based Marginal Prices ("LBMP") and schedules for accepted Bids for Energy and Ancillary Services and Demand Reductions. The Bid/Post System will be used to post schedules for Bilateral Transactions. The ISO will provide historical data regarding Energy and Capacity market clearing prices in addition to Congestion Costs on a publicly accessible portion of its OASIS.

4.1.3.2 Zonal Uplift Report. The ISO shall post on a publicly accessible portion of its website, in machine-readable format, a report on total daily uplift dollars paid to (a) Generators and Demand Side Resources located in Load Zones H, I and J collectively, (b) Generators and Demand Side Resources located in each of the other NYCA Load Zones, and (c) Suppliers scheduling Imports at a Proxy Generator Bus, no more than 20 calendar days after the conclusion of each month. The report shall be updated at the time the Resource-Specific Uplift Report is posted, and again approximately 120 days after an initial invoice was issued for a month, to incorporate updated information. The report shall provide the uplift paid for each month, by day and by billing category.

Costs that the ISO will report as uplift include: (1) Day-Ahead and real-time Bid Production Cost guarantee payments to Generators and to Demand Side Resource aggregations; (2) Day-Ahead Bid Production Cost guarantee payments to Suppliers that schedule Imports; (3) Day-Ahead Margin Assurance Payments; (4) cost recovery for units responding to Local Reliability Rules addressing loss of Generator gas supply; (5) Import Curtailment Guarantee Payments to Suppliers that schedule Imports in real-time; and (6) Lost Opportunity Cost payments to Suppliers of Voltage Support Service.

4.1.3.3 Resource-Specific Uplift Report. The ISO shall post on a publicly accessible portion of its website, in machine-readable format, a report on total uplift paid to Generators, Demand Side Ancillary Service Program Resources, Day-Ahead Demand Response Program resources or aggregations, and to Special Case Resource aggregations**,** on a monthly basis. The report shall provide the total uplift payment across all uplift categories paid to each Generator or aggregation of Demand Side Resources. The report shall be posted no more than 90 calendar days after the conclusion of each month and shall be updated approximately 120 days after an initial invoice was issued for the month, to incorporate updated information.

4.1.3.4 Operator-Initiated Commitment Report. The ISO shall post on a publicly accessible portion of its website, in machine-readable format, commitments made after the Day-Ahead Market for a reason other than minimizing the total production cost of serving load.

For each reported commitment, the ISO shall provide the following information:

(a) commitment size: provide both the resource's $UOL_N$ and the quantity of MW committed;

(b) location: the Load Zone in which the resource is located;

(c) commitment reason: (i) system-wide capacity need, or (ii) constraint management, or (iii) voltage support; and

(d) commitment start time.

Operator-initiated commitments are ordinarily posted in real-time as they occur. All operator-initiated commitments for a calendar month will be available no more than 30 days after the conclusion of that month. Operator-initiated commitment postings may later be updated to improve accuracy.

### 4.1.4 Scheduling Prerequisites

Pursuant to ISO Procedures, each Transaction offered in the Energy, Installed Capacity, Ancillary Services or Transmission Congestion Contract market shall be subject to a minimum size of one (1) megawatt ("MW"); provided however, the minimum size of each Transaction offered in the Energy, Installed Capacity or Ancillary Services market on behalf of Energy Storage Resources and Aggregations shall be one tenth (0.1) of one MW. Regulation Service may be offered in tenths of a MW. Pursuant to ISO Procedures, Special Case Resources may offer a minimum of 100 kW of Unforced Capacity in the Installed Capacity Market. Transactions that exceed one (1) megawatt may be scheduled in tenths of a megawatt provided, however, that Bilateral Transactions and External Transactions in the LBMP Market must always be bid and scheduled in increments of one (1) megawatt.

### 4.1.5 Communication Requirements for Market Services

Customers and Transmission Customers shall utilize Internet service providers to access the ISO's OASIS and bid/post system. Customers shall arrange for and maintain all communications facilities for the purpose of communication of commercial data to the ISO. Each Customer shall be the customer of record for the telecommunications facilities and services its uses and shall assume all duties and responsibilities associated with the procurement, installation and maintenance of the subject equipment and software.

### 4.1.6 Customer Responsibilities

All purchasers in the Day-Ahead or Real-Time Markets who withdraw Energy within the NYCA to serve Load or at an NYCA Interconnection with another Control Area must obtain Transmission Service under the ISO OATT. All Customers requesting service under the ISO Services Tariff to engage in Virtual Transactions must obtain Transmission Service under the ISO OATT.

All LSEs serving Load in the NYCA must comply with the Installed Capacity requirements set forth in Article 5 of this ISO Services Tariff.

All Customers taking service under the ISO Services Tariff must pay the Market Administration and Control Area Services Charge, as specified in Rate Schedule 1 of this ISO Services Tariff.

A Supplier with a Generator or Demand Side Resource/Aggregation with a real time physical operating problem that makes it impossible for the Generator or Demand Side Resource (a) to operate in the bidding mode in which it was scheduled, or (b) to provide all of the Energy or Ancillary Services offered in its Bids, or (c) to achieve or comply with applicable operating parameters or other requirements, shall notify the ISO.

### 4.1.7 Customer Compliance with Laws, Regulations and Orders

All Customers shall comply with all applicable federal, state and local laws, regulations and orders, including orders from the ISO.

4.1.7.1 Violations of FERC's orders, rules and regulations also violate this Section 4.1.7 of the ISO Services Tariff. In particular, if FERC or a court of competent jurisdiction determines there has been a violation of FERC's regulations related to electric energy market manipulation (see 18 C.F.R. Section 1c.2, or any successor provision thereto), such violation is also a violation of this ISO Services Tariff if such violation affects or is related to the ISO Administered Markets.

4.1.7.2 If the ISO becomes aware that a Customer may be engaging in, or might have engaged in, electric energy market manipulation, it shall promptly inform its Market Monitoring Unit.

4.1.7.3 This Section 4.1.7 of the ISO Services Tariff does not independently empower the ISO or its Market Monitoring Unit to impose penalties for, or to provide a remedy for, violations of FERC's prohibition against electric energy market manipulation, or for other violations of the ISO's Tariffs.

### 4.1.8 Commitment for Reliability

Suppliers with generating units committed by the ISO for service to ensure NYCA reliability or local system reliability, that are eligible to submit start-up and minimum generation Bids, will recover startup and minimum generation costs that were not bid, that were not known before the close of the Real-Time Scheduling Window, and that were not recovered in the Dispatch Day, provided however, eligibility to recover such additional costs shall not be available for megawatts scheduled Day-Ahead.  Payment for such costs shall be determined, as if bid, pursuant to the provisions of Attachment C of this Tariff.  Energy Storage Resources, Aggregations that include Withdrawal-Eligible Generator(s), and Behind-the-Meter Net Generation Resources dispatched by the ISO for service to ensure NYCA reliability or local system reliability will recover incremental energy costs that were not bid, that were not known before the close of the Real-Time Scheduling Window, and that were not recovered in the Dispatch Day, provided however, eligibility to recover such additional costs shall not be available for megawatts scheduled Day-Ahead. Payments for securing NYCA reliability and local system reliability shall be recovered by the ISO in accordance with Rate Schedule 1 of the ISO OATT.

External Installed Capacity Suppliers that respond to an SRE request are eligible to recover the ISO-verified costs they incur to respond to the SRE request to the extent such costs exceed the ISO-verified market revenues the External Installed Capacity Supplier receives. It is the obligation of the External Installed Capacity Supplier to demonstrate its costs and revenues to the ISO's satisfaction. In verifying the costs of External Installed Capacity Suppliers that respond to an SRE, the ISO will consider the incremental net costs the Market Party incurred to respond to the SRE. Recoverable costs could include, but are not limited to, incremental costs of generating to supply Energy using the requested Installed Capacity, and the incremental costs incurred by the Market Party to transmit Energy from the External Installed Capacity Supplier's resource to the NYCA, including the opportunity cost associated with lost expected revenue. However, losses resulting from the difference in External Transaction settlement prices between an External Control Area and the NYCA will only be recoverable if and to the extent the following conditions are satisfied: (a) the losses are demonstrated to be reasonably related to responding to the SRE request; and (b)(i) a counterflow Export from the NYCA offered by the Market Party at the External Interface where the Capacity delivery obligation applies is not scheduled due to NYCA reliability concerns or is curtailed to address NYCA reliability concerns, or (ii) no opportunity exists to schedule a counterflow Export from the NYCA at the External Interface where the Capacity delivery obligation applies. Payments for securing NYCA reliability and local system reliability shall be recovered by the ISO as *DisputeResolutionCosts* in accordance with Section 6.1.13 of Rate Schedule 1 of the ISO OATT.

Re-dispatching costs incurred as a result of reductions in Transfer Capability caused by Storm Watch ("Storm Watch Costs") shall be aggregated and recovered on a monthly basis by the ISO exclusively from Transmission Customers in Load Zone J. The ISO shall calculate Storm Watch Costs by multiplying the real-time Shadow Price of any binding constraint associated with a Storm Watch, by the higher of (a) zero; or (b) the scheduled Day-Ahead flow across the constraint minus the actual real-time flow across the constraint.

### 4.1.9 Cost Recovery for Units Responding to Local Reliability Rules Addressing Loss of Generator Gas Supply

#### 4.1.9.1 Eligibility for Cost Recovery

Generating units designated pursuant to the New York State Reliability Council's Local Reliability Rule addressing the Loss of Generator Gas Supply for Generators located in New York City or the Local Reliability Rule addressing the Loss of Generator Gas Supply for Generators located on Long Island, as being required either to burn an alternate fuel at designated minimum levels, or to activate their auto-swap capability, based on forecast Load levels in Load Zones J and K (for purposes of this Section 4.1.9, "Eligible Units"), shall be eligible to recover costs associated with burning the required alternate fuel when one of the specified Local Reliability Rules is invoked. For purposes of this Section 4.1.9, the periods of time in which the Eligible Unit burns the alternate fuel only because one of the Local Reliability Rulesaddressing the loss of gas supply for Generators located in New York City or on Long Island has been invoked, including that period of time required for an Eligible Unit to move into and out of compliance with a Local Reliability Rule addressing the Loss of Generator Gas Supply, shall be referred to as the "Eligibility Period."

#### 4.1.9.1.1 Obligation to Test Automatic Fuel Swap Capability and Eligibility to Recover Costs of Performing Fuel Swap Tests

Combined cycle Generating units designated pursuant to the New York State Reliability Council's Local Reliability Rules addressing the Loss of Generator Gas Supply for Generators located in New York City, which have the ability to automatically swap from natural gas to a liquid fuel source in the event of the sudden interruption of gas fuel supply or loss of gas pressure or the unavailability of gas supply to the Generator, shall:

(a) develop test procedures that are consistent with the requirements of the applicable Local Reliability Rule and ISO Procedures; and

(b) successfully test to demonstrate that the designated combined cycle units are able to automatically swap from natural gas to a liquid fuel source each Capability Period.

The requirement to perform a test each Capability Period can be met by performing a real-time automatic fuel swap, if that fuel swap was successful and occurred during the relevant Capability Period. The scheduling of a test to demonstrate that a designated combined cycle unit is able to automatically swap from natural gas to a liquid fuel source in real-time operations shall be coordinated with the ISO and with the Transmission Owner in whose subzone the Generator is located, consistent with ISO Procedures.

The period during which combined cycle Eligible Units are performing scheduled automatic fuel swap testing, including that period of time required for an Eligible Unit to move into and out of compliance with a Local Reliability Rule addressing the Loss of Generator Gas Supply, is an "Eligibility Period."

### 4.1.9.2 Variable Operating Cost Recovery

For Eligibility Periods, Eligible Units burning an alternate fuel that would not have been burned but for Local Reliability Rules addressing the loss of gas supply for Generators located in New York City or on Long Island being invoked and Eligible Units burning an alternate fuel because they activated their auto-swap capability and experienced a swap to the alternate fuel that would not have occurred but for the operation of the auto-swap capability in accordance with the implementation of the Local Reliability Rules addressing the loss of gas supply for Generators located in New York City or on Long Island shall recover costs that vary with the amount of alternate fuel burned ("variable operating costs") if: (i) such costs are not reflected in the reference level for that Eligible Unit for the hours included in the Eligibility Period, pursuant to ISO Procedures, and (ii) the hour is one for which the commodity cost of the alternate fuel including taxes and emission allowance costs is greater than the commodity cost for natural gas, including taxes and emission allowance costs, as determined by the ISO. These relative commodity cost determinations shall use the same indices used by the ISO to establish daily Reference Levels. Variable operating costs shall include the commodity cost, associated taxes and emission allowance costs, of the required alternate fuel burned during an Eligibility Period pursuant to Local Reliability Rules addressing the loss of gas supply for Generators located in New York City or on Long Island. The owner or bidder of an Eligible Unit shall notify the ISO when variable operating costs change due to a change in tax rates.

#### 4.1.9.3 Additional Cost Recovery

An Eligible Unit that seeks to recover costs incurred in connection with its compliance with Local Reliability Rules addressing the loss of gas supply for Generators located in New York City or on Long Island, in addition to the commodity cost, associated taxes and emission allowance cost recovery specified in Section 4.1.9.2, shall negotiate an Implementation Agreement with the ISO. The Eligible Unit and the ISO shall consult with and consider the input of the New York State Public Service Commission, and the Transmission Owner designated by the applicable Local Reliability Rule addressing the loss of gas supply for Generators located in New York City or on Long Island.  Such Implementation Agreements shall specify, among other terms and conditions, the facilities (or portions of facilities) used to meet obligations under the Local Reliability Rule addressing the loss of gas supply for Generators located in New York City or on Long Island.  The Implementation Agreement shall indicate the rate to be charged during the period of the Implementation Agreement to recover such additional costs.

The Implementation Agreement may also include costs in addition to commodity cost, associated taxes and emission allowance costs of the alternate fuel incurred in connection with compliance with Local Reliability Rules addressing the loss of gas supply for Generators located in New York City or on Long Island that vary with the amount of alternate fuel burned because a Local Reliability Rule addressing the loss of gas supply was invoked.  These variable costs shall be paid pursuant to Section 4.1.9.2 as variable operating costs so as to not duplicate payments.

Each such Implementation Agreement shall have a duration of one or more Capability Periods and shall commence at the beginning of a Capability Period unless another date is approved by the Commission.  If the Eligible Unit and the ISO reach agreement on the terms and conditions of the Implementation Agreement, the ISO shall file it with the Commission for its review and acceptance.

In the event that the Eligible Unit and the ISO have not come to an agreement six months prior to the beginning of the Capability Period that the Implementation Agreement is intended to govern, then either one of them may request the assistance of the Commission’s Dispute Resolution Service.  If the Dispute Resolution Service agrees to provide its assistance the Eligible Unit and the ISO shall participate in whatever dispute resolution process the Dispute

Resolution Service may recommend. The Commission's Dispute Resolution Service may include other stakeholders to the extent confidentiality protections are in place. If, however, there is no agreement four months prior to the beginning of the relevant Capability Period then the Eligible Unit and the ISO may each file an unexecuted Implementation Agreement for the Commission's review and acceptance.

In the event that any provisions of this Section 4.1.9 are modified prior to the termination date of any Commission-accepted Implementation Agreement, such Implementation Agreement will remain in full force and effect until it expires in accordance with its contractual terms and conditions.

Rules for establishing Eligibility Periods shall be specified in ISO Procedures.

#### 4.1.9.4 Billing

Payments made by the ISO to the Eligible Unit to pay variable operating costs and to pay the rate established by the Implementation Agreement pursuant to this Section 4.1.9 shall be in addition to any LBMP, Ancillary Service or other revenues received as a result of the Eligible Unit's Day-Ahead or Real-Time dispatch for that day. Payment by the ISO of variable operating costs pursuant to Section 4.1.9.2 shall be based on the Eligibility Period, quantity of alternate fuel burned, and relative costs of alternate fuel compared to natural gas. Payment by the ISO of the rate established in the Implementation Agreement for costs incurred other than variable operating costs shall be made as part of the ISO billing cycle regardless of which Local Reliability Rule addressing the loss of gas supply an alternate fuel is burned pursuant to, and regardless of the relative cost of the alternate fuel compared to natural gas reflected in reference levels.

#### 4.1.9.5 Other Provisions

The ISO shall make available for the Transmission Owner in whose subzone the Generator is located: (i) the identity of Generators determined by the ISO to be eligible to recover the costs associated with burning the required alternate fuel pursuant to the provisions of this Section 4.1.9; (ii) the start and stop hours for each claimed Eligibility Period and (iii) the amount of alternate fuel for which the Generator has sought to recover variable operating costs.

### 4.1.10 Supplier Aggregations

Suppliers may aggregate individual Resources electrically located in the NYCA to provide Energy, Capacity and Ancillary Services. Demand Side Resources participating in the Emergency Demand Response Program and Aggregations of Special Case Resources shall follow the rules set forth in Services Tariff Sections 22 (Att. G) and 5.12.11, respectively. Each Aggregation shall be offered as a single unit and all bidding and offer obligations under the ISO Tariffs apply to the Aggregation, or to the Aggregator, where appropriate, not to the individual Resources that comprise the Aggregation. An Aggregation that offers a combination of Energy injections, Energy withdrawals and/or Demand Reduction must be able to offer at least 100 kW of each.

Each Aggregation must meet the minimum eligibility and performance requirements to participate in the ISO Administered Markets. Unless otherwise noted, Resources within an Aggregation are not individually required to meet the minimum eligibility and performance requirements to participate in the ISO Administered Markets. Generators with PURPA contracts, Limited Control Run of River Resources, Behind-the-Meter Net Generation Resources, Municipally-owned Generation, System Resources and Control Area System Resources are ineligible to participate in an Aggregation. One Aggregation cannot participate in another Aggregation, however, the individual Resources within an Aggregation may switch to a new Aggregation in accordance with Services Tariff Section 4.1.10.3.

**4.1.10.1 Aggregation Composition**

Aggregations must contain at least two Resources, except that a single Demand Side Resource may participate as a single-Resource Aggregation. The maximum physical injection capability for a Resource participating in an Aggregation is 20 MW. Resources with a nameplate capability greater than 20 MW may participate in an Aggregation if the ISO determines sufficient physical protection and control schemes exist to limit the injection capability of the Resource to 20 MW or less. There is no maximum Demand Reduction capability for Demand Side Resources participating in an Aggregation.

Aggregations may be comprised of a single Resource type or multiple Resource types. Except as otherwise provided in the ISO Tariffs and the ISO Procedures, Aggregations that are comprised of a single Resource type shall follow the rules associated with that Resource type (*e.g.*, an Aggregation of Energy Storage Resources shall follow the rules applicable to Energy Storage Resources). Aggregated (i) Intermittent Power Resources, (ii) Energy Limited Resources, (iii) Capacity Limited Resources, or (iv) Limited Energy Storage Resources shall constitute a single Resource type Aggregation only when the individual Resources in the Aggregation have the same Intermittent, energy limiting, or capacity limiting characteristic (*e.g.*, an Aggregation of only solar Resources, or an Aggregation of only pumped storage Resources). Provided, however, that Aggregations with multiple, different types of Intermittent Power Resources, Energy Limited Resources, Capacity Limited Resources, and Limited Energy Storage Resources shall follow the rules associated with DER Aggregations.

Aggregations that are comprised of more than one Resource type, and Aggregations comprised of only Demand Side Resources shall follow the rules associated with DER

Aggregations.

Aggregations that include at least one Withdrawal-Eligible Generator may submit Bids to withdraw Energy. For the purpose of measuring Aggregation compliance with Base Point Signals, Aggregations that include at least one Withdrawal-Eligible Generator will be measured based on their net performance; that is, Energy injections and Demand Reductions will be reduced by Energy withdrawals.

Aggregators shall not offer any Resource as part of an Aggregation that is participating in the ISO Administered Markets in a different Aggregation or as an individual Resource.

#### 4.1.10.2 Aggregation Electrical Location

The ISO shall establish a set of Transmission Nodes in the New York Control Area at which individual Resources may aggregate. Each Transmission Node shall be identified in the ISO Procedures. The ISO shall consult with the appropriate Member System prior to identifying a Transmission Node in accordance with ISO Procedures. Aggregators shall identify, after consultation with the interconnecting utility, the Transmission Node for each Aggregation. All Resources in an Aggregation must be electrically located in the New York Control Area, and electrically connected to the same ISO-identified Transmission Node. Multiple Aggregators may each enroll one or more Aggregations at a Transmission Node.

The ISO may modify the set of Transmission Nodes from time to time due to conditions on the New York State Transmission System and the underlying distribution systems changing over time. The ISO shall also review and update (if needed) the identified Transmission Nodes on an annual basis, and will post a notice of any changes to the identified Transmission Nodes at least ninety (90) days prior to the beginning of the Capability Year. Changes to the set of Transmission Nodes shall take effect on the first day of the Capability Year. Aggregators shall certify, in accordance with ISO Procedures, that Aggregations affected by changes to

Transmission Nodes meet all requirements of this Section pursuant to ISO Procedures.

**4.1.10.3 Resources Changing Aggregations**

Subject to the requirement that all of the Resources in an Aggregation must be electrically connected to the same ISO-identified Transmission Node, an individual Resource may leave its current Aggregation and/or join a new Aggregation to be effective at the start of a calendar month, but must provide at least thirty (30) calendar days notice of its intent to change Aggregations. Registration of Resources that leave or join an Aggregation shall be completed in accordance with ISO Procedures. The ISO must approve all Resource registrations before the Resource is allowed to participate in an Aggregation.

Additional rules for Resources changing Aggregations, that participate in the ICAP market are located in Services Tariff Section 5.12.13.1.

**4.1.10.4 Aggregation Metering**

Each Aggregation must meet the applicable metering standards identified in the ISO's Tariffs and in ISO Procedures. Aggregators may choose to have an ISO-authorized Meter Services Entity or the applicable Member System provide Aggregation metering services for wholesale market participation. *See* Services Tariff § 13.

Real-time telemetry data and revenue-quality meter data shall be submitted for each Aggregation. Real-time telemetry for DER Aggregations shall consist of three parts: (i) the net of Energy injections and Energy withdrawals by Withdrawal Eligible Generators, (ii) Demand Reductions; and (iii) the sum of both (i) and (ii). Revenue-quality meter data for each DER Aggregation shall consist of three parts: (i) Energy injections; (ii) Energy withdrawals by Withdrawal-Eligible Generators; and (iii) Demand Reductions. Aggregations of other Resource types shall submit meter data in accordance with Services Tariff Section 13 and the ISO Procedures.

#### 4.1.10.5 Qualification Requirements for Aggregators

Aggregators must be Customers. Aggregators must (i) comply with the registration requirements set forth in Services Tariff Section 9, and the ISO Procedures; (ii) designate one or more contact persons to receive ISO communications; and (iii) comply with the metering requirements set forth in Services Tariff Section 13 and the associated ISO Procedures.

### 4.1.11 Dual Participation

Effective May 1, 2020, Generators, Demand Side Resources, and Distribued Energy Resources electrically located in the NYCA may simultaneously participate in the ISO-administered wholesale markets and in programs or markets operated to meet the needs of distribution systems located in the NYCA. Generators, Demand Side Resources, and Distributed Energy Resources engaged in dual participation must meet all applicable rules and obligations set forth in the ISO Tariffs.

Generators, Demand Side Resources, and Distributed Energy Resources operating to meet an obligation outside of the ISO-administered wholesale markets must Bid in a manner that ensures they will be dispatched by the ISO for the market intervals consistent with the manner in which the Resource operates to meet such obligation(s). The ISO and Transmission Owners shall coordinate scheduling and dispatch for all Generators, Demand Side Resources, and Distributed Energy Resources engaged in Dual Participation in accordance with ISO Procedures. The ISO has the authority to determine schedules for these resources.

## 4.2 Day-Ahead Markets and Schedules

### 4.2.1 Day-Ahead Load Forecasts, Bids and Bilateral Schedules

#### 4.2.1.1 General Customer Forecasting and Bidding Requirements

Subject to the two earlier submission deadlines set forth below, by 5 a.m. on the day prior to the Dispatch Day: (i) All LSEs serving Load in the NYCA shall provide the ISO with Load forecasts for the Dispatch Day and the day after the Dispatch Day; and (ii) Customers and Transmission Customers submitting Bids in the Day-Ahead Market shall provide the ISO, consistent with ISO Procedures:

a. Bids to supply Energy, including Bids to supply Energy in Virtual Transactions;

b. Bids to supply Ancillary Services;

c. Requests for Bilateral Transaction schedules;

d. Bids to purchase Energy, including Bids to purchase Energy in Virtual Transactions and Bids to withdraw Energy by Withdrawal-Eligible Generators;

e. Demand Reduction Bids; and

f. For Behind-the-Meter Net Generation Resources, the forecasted Host Load for each hour of the Dispatch Day.

By 4:50 a.m. on the day prior to the Dispatch Day, all Customers or Transmission Customers shall submit Bids for External Transactions at the Proxy Generator Bus associated with the Cross-Sound Scheduled Line, the Neptune Scheduled Line, the Linden VFT Scheduled Line, or the HTP Scheduled Line.

By 4:45 a.m. on the day prior to the Dispatch Day, all Customers or Transmission Customers shall submit Bids that include revised fuel type or fuel price information to the ISO's Market Information System.

In general, the information provided to the ISO shall include the following:

#### 4.2.1.2 Load Forecasts

The Load forecast shall indicate the predicted level of Load in MW by Point of Withdrawal for each hour.

#### 4.2.1.3 Bids by Suppliers Using the ISO-Committed Flexible, Self-Committed Flexible or ISO-Committed Fixed Bid Modes to Supply Energy and/or Ancillary Services

##### 4.2.1.3.1 General Rules

Day-Ahead Bids by Suppliers using the ISO-Committed Flexible, Self-Committed Flexible or ISO-Committed Fixed bid modes shall identify the Capacity, in MW, available for commitment in the Day-Ahead Market (for every hour of the Dispatch Day) and the price(s) at which the Supplier will voluntarily enter into dispatch commitments. If the Supplier elects to participate in the Day-Ahead Market, and is within a defined electrical boundary, electrically interconnected with, and routinely serves a Host Load (which Host Load does not consist solely of Station Power) at a single PTID, it can only participate in the Day-Ahead Market as a Behind-the-Meter Net Generation Resource. If the Supplier is a Behind-the-Meter Net Generation Resource, the ISO shall only consider price-MW pairs in excess of the forecasted Host Load for the Resource.

A Supplier's Day-Ahead Bids for an Energy Storage Resource to withdraw Energy and to inject Energy shall be submitted as a single, continuous, bid curve representing the Capacity, in MW, available for commitment in the Day-Ahead Market for each hour of the Dispatch Day, and shall indicate whether the Resource's Energy Level will be ISO- or Self-Managed. An Energy Storage Resource may not change its Energy Level Management election within the Day-Ahead Market evaluation period (*i.e.*, within a single day).

A Supplier's Day-Ahead Market Self-Committed Flexible Bid for a DER Aggregation may include Energy withdrawals if the DER Aggregation includes at least one Withdrawal-Eligible Generator.  A Supplier's hourly Day-Ahead Bids for a DER Aggregation to withdraw Energy and to supply Energy shall be submitted as a single, continuous bid curve representing the Capacity, in MW, available for each hour of the Dispatch Day.  When the Energy Bid for a DER Aggregation includes both Energy supply and Energy withdrawal by a Withdrawal-Eligible Generator that is a component of the Aggregation, each point of the DER Aggregation's Bid curve shall reflect the net offer, such that any Energy withdrawals reduce the Energy the DER Aggregation is capable of supplying.

Co-located Storage Resources can each offer all of their available capability into the Day-Ahead Market. The ISO will account for the CSR Scheduling Limits in the scheduled if issues to CSR Generators.

If the Supplier using the ISO-Committed Flexible or Self-Committed Flexible bid mode is eligible to provide Regulation Service or Operating Reserves under Rate Schedules 3 and 4 respectively of this ISO Services Tariff, the Supplier's Bid may specify the quantity of Regulation Capacity it is making available and shall specify an emergency response rate that determines the quantity of Operating Reserves that it is capable of providing.  Offers to provide Regulation Service and Operating Reserves must comply with the rules set forth in Rate Schedules 3 and 4 of this ISO Services Tariff.  If a Supplier that is eligible to provide Operating Reserves does not submit a Day-Ahead Availability Bid for Operating Reserves, its Day-Ahead Bid shall be rejected in its entirety.  A Behind-the-Meter Net Generation Resource that is comprised of more than one generating unit, or an Aggregation containing at least one generating unit (unless all of the generating unit(s) use inverter-based energy storage technology) that is dispatched as a single aggregate unit at a single PTID is not qualified to provide Regulation Service or Spinning Reserves. Aggregations may only qualify to offer the Ancillary Services that all individual Resources in the Aggregation are qualified to provide. A Supplier may resubmit a complete Day-Ahead Bid, provided that the new Bid is timely. See Section 4.2.1.9 for bidding requirements for Demand Side Resources offering Energy in the Day-Ahead Market.

Suppliers other than Demand Side Resources entering a Bid into the Day-Ahead Market may also enter Day-Ahead Bids for each of the next nine (9) Dispatch Days. If not subsequently modified or withdrawn, these offers for subsequent Dispatch Days may be used by the ISO as offers from these Suppliers in the Day-Ahead Market for these subsequent Dispatch Days. For Suppliers that are providing Unforced Capacity in the ISO-administered ICAP Market for the month in which the Dispatch Day and the nine-day advance bidding period are encompassed, the ISO may enter the eighth day offer as the Bid for that Supplier's ninth day, if there is, otherwise no ninth–day Bid.

#### 4.2.1.3.2 Bid Parameters

Day-Ahead Bids by Suppliers using the ISO-Committed Flexible, Self-Committed Flexible or ISO-Committed Fixed bid modes may identify-variable Energy price Bids, consisting of up to eleven monotonically increasing, constant cost incremental Energy steps, and other parameters described in ISO Procedures. Day-Ahead Bids from Demand Side Resources offering Operating Reserves or Regulation Service shall be ISO-Committed Flexible and shall have an Energy Bid price no lower than the Monthly Net Benefit Offer Floor. Day-Ahead Bids by Intermittent Power Resources that depend on wind or solar energy as their fuel shall be ISO-

Committed Flexible and shall include a Minimum Generation Bid of zero megawatts and zero costs and a Start-Up Bid of zero cost.

Day-Ahead Bids by ISO-Committed Fixed and ISO-Committed Flexible Generators, other than Bids from Intermittent Power Resources that depend on wind or solar energy as their fuel, shall also include Minimum Generation Bids and hourly Start-Up Bids. Bids shall specify whether a Supplier is offering to be ISO-Committed Fixed, ISO-Committed Flexible, Self-Committed Fixed, or Self-Committed Flexible.

Co-located Storage Resources must each submit a CSR injection Scheduling Limit and a CSR withdrawal Scheduling Limit for each hour of the Day-Ahead Market to indicate the expected capability of the relevant facilities. An Energy Storage Resource that participates in a CSR shall not submit Day-Ahead Market Bids that would Self-Commit the Generator to inject or to withdraw a quantity of Energy that exceeds an applicable CSR Scheduling Limit.

#### 4.2.1.3.3 Upper Operating Limits, Lower Operating Limits, and Response Rates

All Bids to supply Energy and Ancillary Services must specify a $UOL_N$ and a $UOL_E$ for each hour. A Resource's $UOL_E$ may not be lower than its $UOL_N$. Bids from Withdrawal-Eligible Generators, and Aggregations containing at least one Withdrawal-Eligible Generator, shall also specify the Generator's Lower Operating Limit for each hour.

Bids from Suppliers for Generators and Aggregations supplying Energy and Ancillary Services must specify a normal response rate and may provide up to three normal response rates provided the minimum normal response rate may be no less than one percent (1%) of the Generator's or Aggregation's Operating Capacity per minute. All Bids from Suppliers for Generators and Aggregations supplying Energy and Ancillary Services must also specify an emergency response rate which shall be equal to or greater than the maximum normal response rate of the Generator or Aggregation.

Bids from Suppliers offering Operating Reserves or Regulation Service from Demand Side Resources must specify a normal response rate and an emergency response rate provided that the emergency response rate may not be lower than the normal response rate. For Demand Side Resources the minimum acceptable response rate is one percent (1%) of the quantity of Demand Reduction the Demand Side Resource produces per minute.

**4.2.1.3.4 Additional Parameters for Energy Storage Resources and Aggregations Comprised only of Energy Storage Resources**

In addition to the parameters that Suppliers submit for Energy Storage Resources because they are Generators, specific parameters may apply to some Bids for Energy Storage Resources. Consistent with the ISO Procedures, Bids from Suppliers for Energy Storage Resources supplying Energy and Ancillary Services may be required to specify the Beginning Energy Level and the Energy Storage Resource's Roundtrip Efficiency, and must specify its Upper and Lower Storage Limits. The Energy Level for an Energy Storage Resource shall be managed by the Supplier unless the Supplier elects, in its Bids, to be ISO-Managed.

The Day-Ahead Schedule for Energy Storage Resources with ISO-Managed Energy Levels will reflect the Resource's Energy Level constraints, including the Beginning Energy Level, the Upper and Lower Storage Limits, and the Resource's Roundtrip Efficiency. An Energy Storage Resource that self-manages its Energy Level is obligated to submit Bids that are consistent with its Energy Level constraints, and the Day-Ahead optimization will not honor the above-identified Energy Level constraints.

The rules in this section 4.2.1.3.4 shall also apply to Aggregations comprised entirely of Energy Storage Resources.

### 4.2.1.4 Offers to Supply Energy from Self-Committed Fixed Generators and Aggregations

Self-Committed Fixed Generators and Aggregations shall provide the ISO with a schedule of their expected Energy output and withdrawals (when applicable) for each hour. Self-Committed Fixed Generators and Aggregations are responsible for ensuring that any hourly changes in output are consistent with their response rates. Self-Committed Fixed Generators and Aggregations shall also submit $UOL_N$s, $UOL_E$s and variable Energy Bids for possible use by the ISO in the event that RTD-CAM initiates a maximum generation pickup, as described in Section 4.4.3 of this ISO Services Tariff.

A Supplier may submit a Day-Ahead Market Self-Committed Fixed Bid for a DER Aggregation to withdraw Energy if the DER Aggregation includes at least one Withdrawal-Eligible Generator. When a Self-Committed Fixed Bid for a DER Aggregation reflects both Energy supply and Energy withdrawals by a Withdrawal-Eligible Generator that is a component of the Aggregation, the DER Aggregation's Bid shall reflect the net offer, such that any Energy withdrawals reduce the Energy the DER Aggregation is capable of supplying.

### 4.2.1.5 Bids to Supply Energy in Virtual Transactions

Customers submitting Bids to supply Energy in Virtual Transactions shall identify the Energy, in MW, available in the Day-Ahead Market (for every hour of the Dispatch Day) and the price(s) at which the Customer will voluntarily make it available.

#### 4.2.1.6 Bids to Purchase Energy in Virtual Transactions

Customers submitting bids to purchase Energy in Virtual Transactions shall identify the Energy, in MW, to be purchased in the Day-Ahead Market (for every hour of the Dispatch Day) and the price(s) at which the Customer will voluntarily purchase it.

#### 4.2.1.7 Bilateral Transactions

Transmission Customers requesting Bilateral Transaction schedules shall identify hourly Transaction quantities (in MW) by Point of Injection and Point of Withdrawal, minimum run times associated with Firm Point-to-Point Transmission Service, if any, and shall provide other information (as described in ISO Procedures). Like other Generators, an Energy Storage Resource's bus can be the Point of Injection for a Bilateral Transaction, but it cannot be the Point of Withdrawal for a Bilateral Transaction. The source of a Bilateral Transaction at the Point of Interconnection shall not be a DER Aggregation containing one or more Demand Side Resources.

#### 4.2.1.8 Bids to Purchase LBMP Energy in the Day-Ahead Market

Each purchaser shall submit Bids indicating the hourly quantity of Energy, in MW, that it will purchase from the Day-Ahead Market for each hour of the following Dispatch Day. These Bids shall indicate the quantities to be purchased by Point of Withdrawal. The Bids may identify prices at which the purchaser will voluntarily enter into the Transaction.

#### 4.2.1.9 Day-Ahead Bids from Demand Reduction Providers and DSASP Providers to Supply Energy from Demand Reductions

Demand Reduction Providers and DSASP Providers offering Energy from Demand Side Resources shall submit Bids: (i) identifying the amount of Demand Reduction, in MWs in accordance with Section 4.1.4, that is available for commitment in the Day-Ahead Market (for every hour of the dispatch day) and (ii) identifying the prices at which the Demand Reduction Provider or DSASP Provider will voluntarily enter into dispatch commitments to reduce demand; provided, however, the price at which the Demand Reduction Provider or DSASP Provider will voluntarily enter into dispatch commitments to reduce demand shall be no lower than the Monthly Net Benefit Offer Floor, as determined in accordance with this section.  The Bids will identify the minimum period of time that the Demand Reduction Provider or DSASP Provider is willing to reduce demand, however the minimum period may not be less than one hour.  The Bid may separately identify the Demand Reduction Provider's Curtailment Initiation Cost.  Demand Reduction Bids from Demand Reduction Providers that are not accepted in the Day-Ahead Market shall expire at the close of the Day-Ahead Market.

The ISO shall perform the Net Benefits Test and post on its web site the Monthly Net Benefit Offer Floor for each month by the 15$^{th}$ of the preceding month in accordance with ISO Procedures.  The Net Benefits Test shall establish the threshold price below which the dispatch of Energy from Demand Side Resources is not cost-effective.  The Net Benefits Test shall consist of the following steps:  (1) the ISO shall compile hourly supply curves for the Reference Month; (2) the ISO shall develop the average supply curve for the Study Month by updating the Reference Month supply curves for retirements and new entrants, and adjusting offers for changes in fuel prices; (3) the ISO shall apply an appropriate mathematical formula to smooth the average supply curve; and (4) the ISO shall evaluate the smoothed average supply curve to determine the Monthly Net Benefit Floor for the Study Month.  The ISO shall apply the Monthly Net Benefit Offer Floor, as so calculated, to Bids submitted by Demand Response Providers for all hours in the Study Month.

The ISO shall promptly post corrections, where necessary, to the Monthly Net Benefit Offer Floor. Corrections shall only apply to errors in conducting the calculations described above and/or in posting the properly calculated Monthly Net Benefit Offer Floor. Corrections shall not include recalculations based on changes in gas prices as set forth above. The ISO shall not use any correction to the Monthly Net Benefit Offer Floor to determine revised Day-Ahead Market clearing prices for periods prior to the imposition of the correction.

### 4.2.2 ISO Responsibility to Establish a Statewide Load Forecast

By 8 a.m., or as soon thereafter as is reasonably possible, the ISO will develop and publish its statewide Load forecast on the OASIS. The ISO will use this forecast to perform the SCUC for the Dispatch Day.

### 4.2.3 Security Constrained Unit Commitment ("SCUC")

Subject to ISO Procedures and Good Utility Practice, the ISO will develop a SCUC schedule over the Dispatch Day using a computer algorithm which simultaneously minimizes the total Bid Production Cost of: (i) supplying Energy or Demand Reductions to satisfy accepted purchasers' Bids to buy Energy from the Day-Ahead Market; (ii) providing sufficient Ancillary Services to support Energy purchased from the Day-Ahead Market consistent with the Regulation Service Demand curve and Operating Reserve Demand Curves set forth in Rate Schedules 3 and 4 respectively of this ISO Services Tariff; (iii) committing sufficient Capacity to meet the ISO's Load forecast and provide associated Ancillary Services; and (iv) meeting Bilateral Transaction schedules submitted Day-Ahead excluding schedules of Bilateral Transactions with Trading Hubs as their POWs. The computer algorithm shall consider whether accepting Demand Reduction Bids will reduce the total Bid Production Cost.

The ISO shall compute all NYCA Interface Transfer Capabilities prior to scheduling Transmission Service Day-Ahead. The ISO shall run the SCUC utilizing the computed Transfer Capabilities, submitted Firm Point-to-Point Transmission Service requests, Load forecasts, and submitted Incremental Energy Bids, Decremental Bids and Sink Price Cap Bids.

The schedule will include commitment of sufficient Generators and/or Demand Side Resources/Aggregations to provide for the safe and reliable operation of the NYS Power System. SCUC will treat a Behind-the-Meter Net Generation Resources, Energy Storage Resources, and Aggregations as already being committed and available to be scheduled. Pursuant to ISO Procedures, the ISO may schedule any Resource to run above its $UOL_N$ up to the level of its $UOL_E$. In cases in which the sum of all Bilateral Schedules, excluding Bilateral Schedules for Transactions with Trading Hubs as their POWs, and all Day-Ahead Market purchases to serve Load within the NYCA in the Day-Ahead schedule is less than the ISO's Day-Ahead forecast of Load, the ISO will commit Resources in addition to the Operating Reserves it normally maintains to enable it to respond to contingencies. The purpose of these additional resources is to ensure that sufficient Capacity is available to the ISO in real-time to enable it to meet its Load forecast (including associated Ancillary Services). In considering which additional Resources to schedule to meet the ISO's Load forecast, the ISO will evaluate unscheduled Imports, and will not schedule those Transactions if its evaluation determines the cost of those Transactions would effectively exceed a Bid Price cap in the hours in which the Energy provided by those Transactions is required. In addition to all Reliability Rules, the ISO shall consider the following information when developing the SCUC schedule: (i) Load forecasts; (ii) Ancillary Service requirements as determined by the ISO given the Regulation Service Demand Curve and Operating Reserve Demand Curves referenced above; (iii) Bilateral Transaction schedules excluding Bilateral Schedules for Transactions with Trading Hubs as their POWs; (iv) price Bids and operating Constraints submitted for Generators or for Demand Side Resources/Aggregations; (v) price Bids for Ancillary Services; (vi) Decremental Bids and Sink Price Cap Bids for External Transactions; and (vii) Bids to purchase or sell Energy from or to the Day-Ahead Market. External Transactions with minimum run times greater than one hour will only be scheduled at the requested Bid for the full minimum run time. External Transactions with identical Bids and minimum run times greater than one hour will not be prorated. The SCUC schedule shall list the hourly injections and withdrawals for: (a) each Customer whose Bid the ISO accepts for the Dispatch Day; and (b) each Bilateral Transaction scheduled Day-Ahead excluding Bilateral Transactions with Trading Hubs as their POWs.

In the development of its SCUC schedule, the ISO may commit and de-commit Generators and Demand Side Resources, based upon any flexible Bids, including Minimum Generation Bids, Start-Up Bids, Curtailment Initiation Cost Bids, Energy, and Incremental Energy Bids and Decremental Bids received by the ISO provided however that: (a) the ISO shall commit zero megawatts of Energy for Demand Side Resources committed to provide Operating Reserves and Regulation Service; and (b) for Behind-the-Meter Net Generation Resources, the ISO will consider for dispatch only those segments of the Resource's Incremental Energy Bids above the forecasted Host Load and subject to the Injection Limit.

The ISO may disable the ISO-Managed Energy Level bid parameter that is ordinarily available to Energy Storage Resources if it determines that there is a significant risk that including the ISO-Managed Energy Level bid parameter in the SCUC evaluation could delay the completion and posting of the Day-Ahead Market beyond the 11:00 a.m. deadline specified in Section 4.2.5 of this Services Tariff. The ISO shall post a notice to its public website by 4:00

p.m. on the day before the Day-Ahead Market closes if it decides to disable the ISO-Managed Energy Level bid parameter.  The ISO-Managed Energy Level bid parameter shall remain disabled until the ISO posts a notice that complies with the notice requirement specified above reinstating the bid parameter's availability.

When the ISO-Managed Energy Level bid parameter is disabled, Bids that utilized the ISO-Managed Energy Level functionality that were submitted prior to the issuance of the ISO's notice will be rejected.  The ISO will inform affected Suppliers, so that the Suppliers will have the opportunity to resubmit their Day-Ahead Market Bids using Self-Managed Energy Levels prior to the deadlines specified in Section 4.2.1.1 of the Services Tariff.  Bids that utilize ISO-Managed Energy Levels will continue to be rejected until the ISO reinstates the ISO-Managed Energy Level bid parameter, following notice.

The ISO may disable the ISO-Managed Energy Level bid parameter that is ordinarily available to Energy Storage Resources if it determines that there is a significant risk that including the ISO-Managed Energy Level bid parameter in the SCUC evaluation could delay the completion and posting of the Day-Ahead Market beyond the 11:00 a.m. deadline specified in Section 4.2.5 of this Services Tariff.  The ISO shall post a notice to its public website by 4:00 p.m. on the day before the Day-Ahead Market closes if it decides to disable the ISO-Managed Energy Level bid parameter.  The ISO-Managed Energy Level bid parameter shall remain disabled until the ISO posts a notice that complies with the notice requirement specified above reinstating the bid parameter's availability.

When the ISO-Managed Energy Level bid parameter is disabled, Bids that utilized the ISO-Managed Energy Level functionality that were submitted prior to the issuance of the ISO's notice will be rejected.  The ISO will inform affected Suppliers, so that the Suppliers will have the opportunity to resubmit their Day-Ahead Market Bids using Self-Managed Energy Levels prior to the deadlines specified in Section 4.2.1.1 of the Services Tariff. Bids that utilize ISO-Managed Energy Levels will continue to be rejected until the ISO reinstates the ISO-Managed Energy Level bid parameter, following notice.

The ISO will select the least cost mix of Ancillary Services and Energy from Suppliers, Demand Side Resources, and Customers submitting Virtual Transactions bids. The ISO may substitute higher quality Ancillary Services (*i.e.*, shorter response time) for lower quality Ancillary Services when doing so would result in an overall least bid cost solution. For example, 10-Minute Non-Synchronized Reserve may be substituted for 30-Minute Reserve if doing so would reduce the total bid cost of providing Energy and Ancillary Services.

#### 4.2.3.1 Reliability Forecast for the Dispatch Day

At the request of a Transmission Owner to meet the reliability of its local system, the ISO may incorporate into the ISO's Security Constrained Unit Commitment constraints specified by the Transmission Owner.

A Transmission Owner may request commitment of certain Generators for a Dispatch Day if it determines that certain Generators are needed to meet the reliability of its local system. Such request shall be made before the Day-Ahead Market for that Dispatch Day has closed if the Transmission Owner knows of the need to commit certain Generators before the Day-Ahead Market close. The ISO may commit one or more Generator(s) in the Day-Ahead Market for a Dispatch Day if it determines that the Generator(s) are needed to meet NYCA reliability requirements.

A Transmission Owner may request commitment of additional Generators and/or Aggregations for a Dispatch Day following the close of the Day-Ahead Market to meet changed or local system conditions for the Dispatch Day that may cause the Day-Ahead schedules for the Dispatch Day to be inadequate to ensure the reliability of its local system. The ISO will use SRE to fulfill a Transmission Owner's request for additional Resources.

All Generator and/or Aggregation commitments made in the Day-Ahead Market pursuant to this Section 4.2.3.1 shall be posted on the ISO website following the close of the Day-Ahead Market, in accordance with ISO procedures. In addition, the ISO shall post on its website a non-binding, advisory notification of a request, or any modifications thereto, made pursuant to this Section 4.2.3.1 in the Day-Ahead Market by a Transmission Owner to commit a Generator and/or Aggregation that is located within a Constrained Area, as defined in Attachment H of this Services Tariff. The advisory notification shall be provided upon receipt of the request and in accordance with ISO procedures. The postings described here may be included with the operator-initiated commitment report that the ISO posts in accordance with Section 4.1.3.4 of this Services Tariff.

After the Day-Ahead schedule is published, the ISO shall evaluate any events, including, but not limited to, the loss of significant Generators, Aggregations, or transmission facilities that may cause the Day-Ahead schedules to be inadequate to meet the Load or reliability requirements for the Dispatch Day.

In order to meet Load or reliability requirements in response to such changed conditions the ISO may: (i) commit additional Resources, beyond those committed Day-Ahead, using a SRE and considering (a) Bids submitted to the ISO that were not previously accepted but were designated by the bidder as continuing to be available; or (b) new Bids from all Suppliers, including neighboring systems; or (ii) take the following actions: (a) after providing notice, require all Resources to run above their $UOL_N$s, up to the level of their $UOL_E$s (pursuant to ISO

Procedures) and/or raise the $UOL_{N}$s of Capacity Limited Resources and Energy Limited Resources to their $UOL_{E}$ levels, or (b) cancel or reschedule transmission facility maintenance outages when possible.  Actions taken by the ISO in performing supplemental commitments will not change any financial commitments that resulted from the Day-Ahead Market.

### 4.2.4 Reliability Forecast for the Six Days Following the Dispatch Day

In the SCUC program, system operation shall be optimized based on Bids over the Dispatch Day.  However, to preserve system reliability, the ISO must ensure that there will be sufficient resources available to meet forecasted Load and reserve requirements over the seven (7)-day period that begins with the next Dispatch Day.  The ISO will perform a Supplemental Resource Evaluation ("SRE") for days two (2) through seven (7) of the commitment cycle.  If it is determined that a long start-up time Generator (*i.e.*, a Generator that cannot be scheduled by SCUC to start up in time for the next Dispatch Day) is needed for reliability, the ISO shall accept a Bid from the Generator and the Generator will begin its start-up sequence.  During each day of the start-up sequence, the ISO will perform an SRE to determine if long start-up time Generators will still be needed as previously forecasted.  If at any time it is determined that the Generator will not be needed as previously forecasted, the ISO shall order the Generator to abort its start-up sequence.

The ISO will commit to long start-up time Generators to preserve reliability.  However, the ISO will not commit resources with long start-up times to reduce the cost of meeting Loads that it expects to occur in days following the next Dispatch Day.

A Supplier that bids on behalf of a long start-up time Generator, including one that is committed and whose start is subsequently aborted by the ISO as described in this Section 4.2.4, may be eligible for a Bid Production Cost Guarantee pursuant to the provisions of Section 4.6.6

and Attachment C of this ISO Services Tariff. The costs of such a Bid Production Cost guarantee will be recovered by the ISO under Rate Schedule 1 of the ISO OATT.

The ISO shall perform the SRE as follows: (1) The ISO shall develop a forecast of daily system peak Load for days two (2) through seven (7) in this seven (7)-day period and add the appropriate reserve margin; (2) the ISO shall then forecast its available Generators for the day in question by summing the Operating Capacity for all Generators currently in operation that are available for the commitment cycle, the Operating Capacity of all other Generators capable of starting on subsequent days to be available on the day in question, and an estimate of the net Imports from External Bilateral Transactions; (3) if the forecasted peak Load plus reserves exceeds the ISO's forecast of available Generators for the day in question, then the ISO shall commit additional Generators capable of starting prior to the day in question (*e.g.*, start-up period of two (2) days when looking at day three (3)) to assure system reliability; (4) in choosing among Generators with comparable start-up periods, the ISO shall schedule Generators to minimize Minimum Generation Bid and Start-Up Bid costs of meeting forecasted peak Load plus Ancillary Services consistent with the Reliability Rules; (5) in determining the appropriate reserve margin for days two (2) through seven (7), the ISO will supplement the normal reserve requirements to allow for forced outages of the short start-up period units (*e.g.*, gas turbines) assumed to be operating at maximum output in the unit commitment analysis for reliability.

Energy Bids are binding for day one (1) only for units in operation or with start-up periods less than one (1) day. Minimum Generation Bids for Generators with start-up periods greater than one (1) day will be binding only for units that are committed by the ISO and only for the first day in which those units could produce Energy given their start-up periods. For example, Minimum Generation Bids for a Generator with a start-up period of two (2) days would be binding only for day three (3) because, if that unit begins to start up at any time during day one (1), it would begin to produce Energy forty-eight (48) hours later on day three (3). Similarly, the Minimum Generation Bids for a Generator with a start-up period of three (3) days would be binding only for day four (4).

### 4.2.5 Post the Day-Ahead Schedule

By 11 a.m. on the day prior to the Dispatch Day, the ISO shall close the Day-Ahead scheduling process and post on the Bid/Post System the Day-Ahead schedule for each entity that submits a Bid or Bilateral Transaction schedule. All schedules shall be considered proprietary, with the posting only visible to the appropriate scheduling Customer and Transmission Owners subject to the applicable Code of Conduct (See Attachment F to the ISO OATT). The ISO will post on the OASIS the statewide aggregate resources (Day-Ahead Energy schedules and total operating capability forecast), Day-Ahead scheduled Load, forecast Load for each Load Zone, and the Day-Ahead LBMP prices (including the Congestion Component and the Marginal Losses Component) for each Load Zone in each hour of the upcoming Dispatch Day. The ISO shall conduct the Day-Ahead Settlement based upon the Day-Ahead schedule determined in accordance with this section and Attachment B to this Services Tariff. The ISO will provide the Transmission Owner with the Load forecast (for seven (7) days) as well as the ISO security evaluation data to enable local area reliability to be assessed.

### 4.2.6 Day-Ahead LBMP Market Settlements

The ISO shall calculate the Day-Ahead LBMPs for each Load Zone and at each Generator bus and Demand Reduction Bus/Transmission Node as described in Attachment B. Each Supplier that bids a Generator or Aggregation into the ISO Day-Ahead Market and is scheduled in the SCUC to sell or purchase Energy in the Day-Ahead Market will be settled at the product of: (a) the Day-Ahead hourly LBMP at the applicable Generator bus or Transmission Node; and (b) the hourly Energy schedule. Each Supplier that bids an External Transaction into the Day-Ahead LBMP Market and is scheduled in the SCUC to sell Energy into the Day-Ahead LBMP Market will be settled at the product of (a) the Day-Ahead LBMP at the applicable Proxy Generator Bus and (b) the External Transaction schedule. For each Demand Reduction Provider that bids a Demand Reduction into the Day-Ahead Market and is scheduled in SCUC to provide Energy from the Demand Reduction, the LSE providing Energy service to the Demand Side Resource that accounts for the Demand Reduction shall be settled at the product of: (a) the Day-Ahead hourly LBMP at the applicable Demand Reduction Bus; and (b) the hourly demand reduction scheduled Day-Ahead (in MW). In addition, each Demand Reduction Provider that bids a Demand Reduction into the Day-Ahead Market and is scheduled in the SCUC to provide Energy through Demand Reduction shall receive a Demand Reduction Incentive Payment from the ISO equal to the product of: (a) the Day-Ahead hourly LBMP at the Demand Reduction bus; and (b) the lesser of the verified actual hourly Demand Reduction or the scheduled hourly Demand Reduction (in MW). Each Customer that bids into the Day-Ahead Market, including each Customer that submits a Bid for a Virtual Transaction, and has a schedule accepted by the ISO to purchase Energy in the Day-Ahead Market will pay the product of: (a) the Day-Ahead hourly Zonal LBMP at each Point of Withdrawal; and (b) the scheduled Energy at each Point of Withdrawal. Each Supplier that bids an External Transaction into the Day-Ahead LBMP Market and is scheduled in the SCUC to buy Energy from the Day-Ahead LBMP Market will pay the product of (a) the Day-Ahead LBMP at the applicable Proxy Generator Bus and (b) the External Transaction schedule. Each Customer that submits a Virtual Transaction bid into the ISO Day-Ahead Market and has a schedule accepted by the ISO to sell Energy in a Load Zone in the Day-

Ahead Market will receive a payment equal to the product of (a) the Day-Ahead hourly zonal LBMP for that Load Zone; and (b) the hourly scheduled Energy for the Customer in that Load Zone.  Each Trading Hub Energy Owner who bids a Bilateral Transaction into the Day-Ahead Market with a Trading Hub as its POI and has its schedule accepted by the ISO will pay the product of:  (a) the Day-Ahead hourly zonal LBMP for the Load Zone associated with that Trading Hub; and (b) the Bilateral Transaction scheduled MW.  Each Trading Hub Energy Owner who bids a Bilateral Transaction into the Day-Ahead Market with a Trading Hub as its POW and has its schedule accepted by the ISO will be paid the product of:  (a) the Day-Ahead hourly zonal LBMP for the Load Zone associated with that Trading Hub; and (b) the Bilateral Transaction scheduled MW.

The ISO shall publish the Day-Ahead Settlement Load Zone LBMPs for each hour in the Dispatch Day.

## 4.4 Real-Time Markets and Schedules

### 4.4.1 Real-Time Commitment ("RTC")

#### 4.4.1.1 Overview

RTC will make binding unit commitment and de-commitment decisions for the periods beginning fifteen minutes (in the case of Resources that can respond in ten minutes) and thirty minutes (in the case of Resources that can respond in thirty minutes) after the scheduled posting time of each RTC run, will provide advisory commitment information for the remainder of the two and a half hour optimization period, and will produce binding schedules for External Transactions to begin at the start of each quarter hour. RTC will treat Behind-the-Meter Net Generation Resources, Energy Storage Resources, and Aggregations as already being committed and available to be scheduled. RTC will co-optimize to solve simultaneously for all Load, Operating Reserves and Regulation Service and to minimize the total as-bid production costs over its optimization timeframe. RTC will consider SCUC's Resource commitment for the day, load forecasts that RTC itself will produce each quarter hour, binding transmission constraints, and all Real-Time Bids and Bid parameters submitted pursuant to Section 4.4.1.2 below.

#### 4.4.1.2 Bids and Other Requests

After the Day-Ahead schedule is published and before the close of the Real-Time Scheduling Window for each hour, Customers may submit Real-Time Bids into the Real-Time Market for real-time evaluation by providing all information required to permit real-time evaluation pursuant to ISO Procedures. If the Supplier elects to participate in the Real-Time Market, and is within a defined electrical boundary, electrically interconnected with, and routinely serves a Host Load (which Host Load does not exclusively consist of Station Power) at a single PTID, it can only participate in the Real-Time Market as a Behind-the-Meter Net

Generation Resource.  If a Behind-the-Meter Net Generation Resource submits Bids into the Real-Time Market for real-time evaluation, such Bids shall provide the forecasted Host Load for each hour for which Bids are submitted.

An Energy Storage Resource shall indicate in its Real-Time Bids whether its Energy Level will be ISO- or Self-Managed.  An Energy Storage Resource that elects to Self-Manage its Energy Level shall be responsible for managing its Energy Level through its Bids.  An Energy Storage Resource, including an Energy Storage Resource that received a Day-Ahead Schedule, may change its Energy Level Management election for each operating hour in the Real-Time Market day.

A Supplier's Real-Time Market Self-Committed Flexible Bid for a DER Aggregation may include Energy withdrawals if the DER Aggregation includes at least one Withdrawal-Eligible Generator.  A Supplier's Real-Time Market Bids for a DER Aggregation to withdraw Energy and to supply Energy shall be submitted in a single, continuous bid curve representing the Capacity, in MW, available.  When the Energy Bid for the DER Aggregation includes both Energy supply and Energy withdrawal by a Withdrawal-Eligible Generator that is a component of the Aggregation, each point of the DER Aggregation's Bid curve shall reflect the net offer, such that any Energy withdrawals reduce the Energy the DER Aggregation is capable of supplying.

A Supplier may submit a Real-Time Market Self-Committed Fixed Bid for a DER Aggregation to withdraw Energy if the DER Aggregation includes at least one Withdrawal-Eligible Generator.  When a Self-Committed Fixed Bid for a DER Aggregation reflects both Energy supply and Energy withdrawals by a Withdrawal-Eligible Generator that is a component of the Aggregation, the DER Aggregation's Bid shall reflect the net offer, such that any Energy withdrawals reduce the Energy the DER Aggregation is capable of supplying. However, if the Monthly Net Benefit Threshold price is less than the LBMP, Demand Side Resources shall not be permitted to net Energy withdrawals of Withdrawal-Eligible Generators in the DER Aggregation.

Co-located Storage Resources can each offer all of their available capability into the Real-Time Market. RTC will account for the CSR Scheduling Limits in the schedules it determines for CSR Generators.

#### 4.4.1.2.1 Real-Time Bids to Supply or Withdraw Energy and Supply Ancillary Services, other than External Transactions

Intermittent Power Resources and Aggregations that depend solely on wind or solar energy as their fuel submitting new or revised offers to supply Energy shall bid as ISO-Committed Flexible and shall submit a Minimum Generation Bid of zero MW and zero cost and a Start-Up Bid at zero cost.

Eligible Customers may submit new or revised Bids to supply or withdraw Energy, and to supply Operating Reserves and/or Regulation Service. Customers that submit such Bids may specify different Bid parameters in real-time than they did Day-Ahead.

Incremental Energy Bids, for portions of the Capacity of Resources that were scheduled in the Day-Ahead Market, and/or Start-Up Bids may be submitted by Suppliers bidding Resources using ISO-Committed Fixed, ISO-Committed Flexible, and Self-Committed Flexible bid modes that exceed the Incremental Energy Bids or Start-Up Bids submitted in the Day-Ahead Market or the mitigated Day-Ahead Incremental Energy Bids or Start-Up Bids where appropriate, if not otherwise prohibited pursuant to other provisions of the tariff.

The ISO will use a Fast-Start Resource's single point Start-Up Bid if one is submitted (or the mitigated Bid, where appropriate). If a Fast-Start Resource does not submit a single point

Start-Up Bid in real-time, the ISO will use the point on the Fast-Start Resource's multi-point Start-Up Bid curve (or its mitigated multi-point Start-Up Bid curve, where appropriate) that corresponds to the shortest specified down time.

Minimum Generation Bids or Regulation Service Bids for any hour in which Resources received a Day-Ahead Energy schedule or a Regulation Service schedule, as appropriate, may not exceed the Minimum Generation Bids or Regulation Service Bids, as appropriate, submitted for those Resources in the Day-Ahead Market. Provided however, a Fast-Start Resource that receives a Day-Ahead schedule may submit Minimum Generation Bids using ISO-Committed Fixed, ISO-Committed Flexible, and Self-Committed Flexible bid modes that exceed the dollar component of the Bids submitted in the Day-Ahead Market, or the dollar component of the mitigated Day-Ahead Bids where appropriate, if not otherwise prohibited pursuant to other provisions of the tariff.

Additionally, Real-Time Minimum Run Qualified Gas Turbine Customers shall not increase their previously submitted Real-Time Incremental Energy Bids, Minimum Generation Bids, or Start-Up Bids within 135 minutes of the dispatch hour. Bids to supply Energy or Ancillary Services shall be subject to the rules set forth in Section 4.2.1 of this ISO Services Tariff. For Behind-the-Meter Net Generation Resources, the ISO will consider only those segments of the Resource's Incremental Energy Bids above the forecasted Host Load and subject to the Injection Limit.

Suppliers bidding on behalf of Generators or Aggregations (except Aggregations comprised of only Intermittent Power Resources) that did not receive a Day-Ahead schedule for a given hour may offer their Generators or Aggregations, for those hours, using the ISO-Committed Flexible, Self-Committed Flexible, Self-Committed Fixed bid mode or, with ISO approval, the ISO-Committed Fixed bid modes in real-time. For Behind-the-Meter Net Generation Resources, the ISO will consider only those segments of the Resource's Incremental Energy Bids above the forecasted Host Load and subject to the Injection Limit. Suppliers bidding on behalf of Demand Side Resources that did not receive a Day-Ahead schedule to provide Operating Reserves or Regulation Service for a given hour may offer to provide Operating Reserves or Regulation Service using the ISO-Committed Flexible bid mode for that hour in the Real-Time Market provided, however, that the Demand Side Resource shall have an Energy price Bid no lower than the Monthly Net Benefit Offer Floor. A Supplier bidding on behalf of a Generator or Aggregation that received a Day-Ahead schedule for a given hour may not change the bidding mode for that Generator or Aggregation for the Real-Time Market for that hour provided, however, that Generators or Aggregations that were scheduled Day-Ahead in Self-Committed Fixed mode may switch, with ISO approval, to ISO-Committed Fixed bidding mode in real-time. Generators or Aggregations that were scheduled Day-Ahead in ISO-Committed Fixed mode will be scheduled as Self-Committed Fixed in the Real-Time Market unless, with ISO approval, they change their bidding mode to ISO-Committed Fixed.

Co-located Storage Resources must each submit a CSR injection Scheduling Limit and a CSR withdrawal Scheduling Limit for each hour of the Real-Time Market to indicate the expected capability of the relevant facilities. An Energy Storage Resource that participates in a CSR shall not submit Real-Time Market Bids that would Self-Commit the Generator to inject or to withdraw a quantity of Energy that exceeds an applicable CSR Scheduling Limit.

Generators and Aggregations with a real time physical operating problem that makes it impossible for them: (a) to operate in the bidding mode in which the Generator or Aggregation was scheduled Day-Ahead ; or (b) to provide all of the Energy or Ancillary Services offered in their Bids, or (c) to achieve or comply with applicable operating parameters or other requirements, shall notify the ISO. Additionally, if the Host Load of a Behind-the-Meter Net Generation Resource is greater in real-time than was forecasted Day-Ahead such that it cannot meet its Day-Ahead schedule, it must notify the ISO.

Generators and Aggregations and Demand Side Resources may not submit separate Operating Reserves Availability Bids in real-time and will instead automatically be assigned a real-time Operating Reserves Availability Bid of zero for the amount of Operating Reserves they are capable of providing in light of their response rate (as determined under Rate Schedule 4).

#### 4.4.1.2.2 Real-Time Bids Associated with Internal and External Bilateral Transactions

Customers may use Real-Time Bids to seek to modify Bilateral Transactions that were previously scheduled Day-Ahead or propose new Bilateral Transactions, including External Transactions, for economic evaluation by RTC, provided however, that Bilateral Transactions with Trading Hubs as their POWs that were previously scheduled Day-Ahead may not be modified. Bids associated with Internal Bilateral Transactions shall be subject to the rules set forth above in Section 4.2.1.7.

Except as provided in this section, External Transaction Bids may not vary over the course of an hour. Each such Bid must offer to import, export or wheel the same amount of Energy at the same price at each point in time within that hour. At Variably Scheduled Proxy Generator Buses the ISO shall permit the submission of Bids to import or export Energy that vary the amount of Energy, and vary the price, for each quarter hour evaluation period.

The ISO may vary External Transaction Schedules at Proxy Generator Buses that are authorized to schedule transactions on an intra-hour basis if the party submitting the Bid for such a Transaction elects to permit variable scheduling. The ISO may also vary External Transaction

Schedules at CTS Enabled Proxy Generator Buses. External Transaction Bids submitted to import Energy from, or export Energy to Proxy Generator Buses that are authorized to schedule transactions on either an intra-hour or hourly basis shall indicate whether the ISO may vary schedules associated with those Bids within each hour. Transmission Customers scheduling External Bilateral Transactions shall also be subject to the provisions of Section 16, Attachment J of the ISO OATT.

#### 4.4.1.2.3 Self-Commitment Requests

Self-Committed Flexible Resources must provide the ISO with schedules of their expected minimum operating points in quarter hour increments. Self-Committed Fixed Resources must provide their expected actual operating points in quarter hour increments or, with ISO approval, bid as an ISO-Committed Fixed Generator.

#### 4.4.1.2.4 ISO-Committed Fixed

The ability to use the ISO-Committed Fixed bidding mode in the Real-Time Market shall be subject to ISO approval pursuant to procedures, which shall be published by the ISO. Generators that have exclusively used the Self-Committed Fixed or ISO-Committed Fixed bid modes in the Day-Ahead Market or that do not have the communications systems, operational control mechanisms or hardware to be able to respond to five-minute dispatch basepoints are eligible to bid using the ISO-Committed Fixed bid mode in the Real-Time Market. Real-Time Bids by Generators using the ISO-Committed Fixed bid mode in the Real-Time Market shall provide variable Energy price Bids, consisting of up to eleven monotonically increasing, constant cost incremental Energy steps, Minimum Generation Bids, hourly Start-Up Bids and other information pursuant to ISO Procedures.

RTC shall schedule ISO-Committed Fixed Generators.

#### 4.4.1.3 External Transaction Scheduling

RTC15 will schedule External Transactions on an hourly basis as part of its development of a co-optimized least-bid cost Real-Time Commitment. For External Transactions that are scheduled on a 15 minute basis, the amount of Energy scheduled to be imported, exported or wheeled in association with that External Transaction may change on the quarter hour. All RTC runs will schedule intra-hour External Transactions on a 15 minute basis at Variably Scheduled Proxy Generator Buses. RTC will alert the ISO when it appears that scheduled External Transactions need to be reduced for reliability reasons but will not automatically Curtail them. Curtailment decisions will be made by the ISO, guided by the information that RTC provides, pursuant to the rules established by Attachment B of this ISO Services Tariff and the ISO Procedures. External Bilateral Transaction schedules are also governed by the provisions of Section 16, Attachment J of the OATT.

#### 4.4.1.4 Posting Commitment/De-Commitment and External Transaction Scheduling Decisions

Except as specifically noted in Section 4.4.2, 4.4.3 and 4.4.4 of this ISO Services Tariff, RTC will make all Resource commitment and de-commitment decisions. RTC will make all economic commitment/de-commitment decisions based upon available offers assuming Suppliers internal to the NYCA have a minimum run time of at least 15 minutes, but not longer than one hour; provided however, Real-Time Minimum Run Qualified Gas Turbines shall be assumed to have a two-hour minimum run time. For Behind-the-Meter Net Generation Resources, RTC will consider only those segments of the Resource’s Incremental Energy Bids above the forecasted Host Load and subject to the Injection Limit.

RTC will produce advisory commitment information and advisory real-time prices.  RTC will make decisions and post information in a series of fifteen-minute "runs" which are described below.

$RTC_{15}$ will begin at the start of the first hour of the RTC co-optimization period and will post its commitment, de-commitment, and External Transaction scheduling decisions no later than fifteen minutes after the start of that hour.  During the $RTC_{15}$ run, RTC will:

(i) Commit Resources with 10-minute start-up times that should be synchronized by the time that the results of the next RTC run are posted so that they will be synchronized and running at their scheduled dispatch levels by that time;

(ii) Commit Resources with 30-minute start-up times that should be synchronized by the time that the results of the RTC run following the next RTC run are posted so that they will be synchronized and running at their scheduled dispatch levels by that time;

(iii) De-commit Resources that should be disconnected from the network by the time that the results of the next RTC run are posted so that they will be disconnected by that time;

(iv) Issue advisory commitment and de-commitment guidance for periods more than thirty minutes in the future and advisory dispatch information;

(v) Schedule economic hourly External Transactions for the next hour;

(vi) Schedule economic 15 minute External Transactions, for the quarter hour for which the results of the next RTC run are posted, at Variably Scheduled Proxy Generator Buses other than a CTS Enabled Proxy Generator Bus;

(vii) Schedule economic 15 minute External Transactions, for the quarter hour for which the results of the next RTC run are posted, at a CTS Enabled Proxy Generator Bus; and

(viii) Schedule ISO-Committed Fixed Resources.

All subsequent RTC runs in the hour, *i.e.*, $RTC_{30}$, $RTC_{45}$, and $RTC_{00}$ will begin executing at fifteen minutes before their designated posting times (for example, $RTC_{30}$ will begin in the fifteenth minute of the hour), and will take the following steps:

(i) Commit Resources with 10-minute start-up times that should be synchronized by the time that the results of the next RTC run are posted so that they will be synchronized and running at that time;

(ii) Commit Resources with 30-minute start-up times that should be synchronized by the time that the results of the RTC run following the next RTC run are posted so that they will be synchronized and running at that time;

(iii) De-commit Resources that should be disconnected from the network by the time that the results of the next RTC run are posted so that they will be disconnected at that time;

(iv) Issue advisory commitment, de-commitment, and dispatching guidance for the period from thirty minutes in the future until the end of the RTC co-optimization period;

(v) Either reaffirm that the External Transactions scheduled by previous RTC runs should continue to flow in the next hour, or inform the ISO that External Transactions may need to be reduced;

(vi) Schedule economic 15 minute External Transactions, for the quarter hour for which the results of the next RTC run are posted, at Variably Scheduled Proxy Generator Buses other than a CTS Enabled Proxy Generator Bus;

(vii) Schedule economic 15 minute External Transactions, for the quarter hour for which the results of the next RTC run are posted, at a CTS Enabled Proxy Generator Bus; and

(viii) Schedule ISO-Committed Fixed Resources.

#### 4.4.1.5 External Transaction Settlements

Settlements for External Transactions in the LBMP Market are described in Sections 4.2.6 and 4.5 of this ISO Services Tariff. Settlements for External Bilateral Transactions are also described in Section 16, Attachment J and Rate Schedules 7 and 8 of the OATT.

The calculation of Real-Time LBMPs at Proxy Generator Buses and CTS Enabled Interfaces is described in Section 17, Attachment B to this ISO Services Tariff.

### 4.4.2 Real-Time Dispatch

#### 4.4.2.1 Overview

The Real-Time Dispatch will make dispatching decisions, send Base Point Signals to Internal Generators and Demand Side Resources/Aggregations, produce schedules for intra-hour External Transactions at Dynamically Scheduled Proxy Generator Buses, calculate Real-Time Market clearing prices for Energy, Operating Reserves, and Real-Time Market Prices for Regulation Service, and establish real-time schedules for those products on a five-minute basis, starting at the beginning of each hour. The Real-Time Dispatch will not make commitment decisions and will not consider start-up costs in any of its dispatching or pricing decisions, except as specifically provided in Section 4.4.2.4 below. In each interval, Real-Time Dispatch

will review the Beginning Energy Level of each Energy Storage Resource and of each Aggregation comprised only of Energy Storage Resources.  Real-Time Dispatch will attempt to prevent dispatching a Self-Managed Energy Storage Resource or Aggregation composed only of Energy Storage Resources in a manner that would be infeasible based on its Beginning Energy Level.  Instead, Real-Time dispatch will consider an Energy Storage Resource's or Aggregation Composed of only Energy Storage Resources' Beginning Energy Level in developing a schedule for the binding interval.  An Energy Storage Resource's Beginning Energy Level will be used to ensure that Operating Reserves scheduled from the Resource can be sustained for one hour if the Operating Reserves are converted to Energy.  The Real-Time Dispatch will account for the CSR Scheduling Limits in the schedules and dispatch instructions it issues to CSR Generators.
Each Real-Time Dispatch run will co-optimize to solve simultaneously for Load, Operating Reserves, and Regulation Service and to minimize the total cost of production over its bid optimization horizon (which may be fifty, fifty-five, or sixty minutes long depending on where the run falls in the hour.)  In addition to producing a binding schedule for the next five minutes, each Real-Time Dispatch run will produce advisory schedules for the remaining four time steps of its bid-optimization horizon (which may be five, ten, or fifteen minutes long depending on where the run falls in the hour). An advisory schedule may become binding in the absence of a subsequent Real-Time Dispatch run. RTD will use the most recent system information and the same set of Bids and constraints that are considered by RTC.

#### 4.4.2.2 External Transaction Scheduling

All RTD runs will schedule External Transactions on a 5 minute basis at Dynamically Scheduled Proxy Generator Buses.  For External Transactions that are scheduled on a 5 minute basis, the amount of Energy scheduled to be imported, exported or wheeled in association with that External Transaction may change every 5 minutes.  External Bilateral Transaction Schedules are also governed by the provisions of Attachment J of the OATT.

#### 4.4.2.3 Calculating Real-Time Market LBMPs and Advisory Prices

RTD shall calculate *ex ante* Real-Time LBMPs at each Generator bus, Transmission Node, and for each Load Zone in each RTD cycle, in accordance with the procedures set forth in Attachment B to this ISO Services Tariff.  RTD will also calculate and post advisory Real-Time LBMPs for the next four quarter hours in accordance with the procedures set forth in Attachment B.

#### 4.4.2.4 Real-Time Pricing Rules for Scheduling Ten Minute Resources

RTD may commit and dispatch, for pricing purposes, Resources capable of starting and meeting Minimum Generation Levels within ten minutes ("eligible Resources") when necessary to meet load.  Eligible Resources committed and dispatched by RTD for pricing purposes may be physically started through normal ISO operating processes.  In the RTD cycle in which RTD commits and dispatches an eligible Resource, RTD will consider the Resource's start-up and incremental energy costs and will assume the Resource has a zero downward response rate for purposes of calculating *ex ante* Real-Time LBMPs pursuant to Section 17, Attachment B to this ISO Services Tariff.

#### 4.4.2.5 Converting to Demand Reduction, Special Case Resource Capacity scheduled as Operating Reserves, Regulation or Energy in the Real-Time Market

The ISO shall convert to Demand Reductions, in hours in which the ISO requests that Responsible Interface Parties notify their Special Case Resources to reduce their demand pursuant to ISO Procedures, any Operating Reserves, Regulation Service or Energy scheduled in the Day-Ahead Market from Demand Side Resources that are also providing Special Case Resource Capacity. The ISO shall settle the Demand Reduction provided by that portion of the Special Case Resource Capacity that was scheduled Day-Ahead as Operating Reserves, Regulation Service or Energy as being provided by a Supplier of Operating Reserves, Regulation Service or Energy as appropriate. The ISO shall settle any remaining Demand Reductions provided beyond Capacity that was scheduled Day-Ahead as Ancillary Services or Energy as being provided by a Special Case Resource, provided such Demand Reduction is otherwise payable as a reduction by a Special Case Resource.

Operating Reserves or Regulation Service scheduled Day-Ahead and converted to Energy in real time pursuant to this Section 4.4.2.4, will be eligible for a Day-Ahead Margin Assurance Payment, pursuant to Attachment J of this ISO Services Tariff.

Special Case Resource Capacity that has been scheduled in the Day-Ahead Market to provide Operating Reserves, Regulation Service or Energy and that has been instructed as a Special Case Resource to reduce demand shall be considered, for the purpose of determining a Scarcity Reserve Requirement pursuant to Rate Schedule 4 of this ISO Services Tariff, to be a Special Case Resource.

The ISO shall not accept offers of Operating Reserves or Regulation Service in the Real-Time Market from Demand Side Resources that are also providing Special Case Resource Capacity for any hour in which the ISO has requested Special Case Resources to reduce demand.

#### 4.4.2.6 Converting to Demand Reduction Curtailment Services Provider Capacity scheduled as Operating Reserves, Regulation or Energy in the Real-Time Market

The ISO shall convert to Demand Reductions, in hours in which the ISO requests Demand Reductions from the Emergency Demand Response Program pursuant to ISO

Procedures, any Operating Reserves, Regulation Service or Energy scheduled in the Day-Ahead Market by Demand Side Resources that are also providing Curtailment Services Provider Capacity. The ISO shall settle the Demand Reduction provided by that portion of the Curtailment Services Provider Capacity that was scheduled Day-Ahead as Operating Reserves, Regulation Service or Energy as being provided by a Supplier of Operating Reserves, Regulation Service or Energy as appropriate. The ISO shall settle Demand Reductions provided beyond Capacity that was scheduled Day-Ahead as ancillary services or Energy as being provided by a Curtailment Services Provider.

Operating Reserves or Regulation Service scheduled Day-Ahead and converted to Energy in real time pursuant to this Section 4.4.2.5, will be eligible for a Day-Ahead Margin Assurance Payment, pursuant to Attachment J of this ISO Services Tariff.

Curtailment Services Provider Capacity that has been scheduled in the Day-Ahead Market as Operating Reserves, Regulation Service or Energy and that has been instructed to reduce demand shall be considered, for the purpose of determining a Scarcity Reserve Requirement pursuant to Rate Schedule 4 of this ISO Services Tariff, to be a Emergency Demand Response Program Resource.

The ISO shall not accept offers of Operating Reserves and Regulation Service in the Real-Time Market from Demand Side Resources that are also providing Curtailment Services Provider Capacity for any hour in which the ISO has requested participants in the Emergency Demand Response Program pursuant to ISO Procedures to reduce demand.

**4.4.2.7 Post the Real-Time Schedule**

Subsequent to the close of the Real-Time Scheduling Window, the ISO shall post the real-time schedule for each entity that submits a Bid or Bilateral Transaction schedule. All schedules shall be considered proprietary, with the posting only visible to the appropriate scheduling Customer, Transmission Customer and Transmission Owners subject to the applicable Code of Conduct (See Attachment F to the ISO OATT). The ISO will post on the OASIS the real-time Load for each Load Zone, and the Real-Time LBMP prices (including the Congestion Component and the Marginal Losses Component) for each Load Zone for each hour of the Dispatch Day. The ISO shall conduct the real-time settlement based upon the real-time schedule determined in accordance with this Section.

### 4.4.3 Real-Time Dispatch - Corrective Action Mode

When the ISO needs to respond to system conditions that were not anticipated by RTC or the regular Real-Time Dispatch, *e.g.*, the unexpected loss of a major Generator or Transmission line, it will activate the specialized RTD-CAM program. RTD-CAM runs will be nominally either five or ten minutes long, as is described below. Unlike the Real-Time Dispatch, RTD-CAM will have the ability to commit certain Resources, and schedule intra-hour External Transactions at Dynamically Scheduled Proxy Generator Buses. When RTD-CAM is activated, the ISO will have discretion to implement various measures to restore normal operating conditions. These RTD-CAM measures are described below.

The ISO shall have discretion to determine which specific RTD-CAM mode should be activated in particular situations. In addition, RTD-CAM may require Resources to run above their $UOL_N$s, up to the level of their $UOL_E$s as is described in the ISO Procedures. Self-Committed Fixed Resources will not be expected to move in response to RTD-CAM Base Point Signals except when a maximum generation pickup is activated.

Except as expressly noted in this section, RTD-CAM will dispatch the system in the same manner as the normal Real-Time Dispatch.

#### 4.4.3.1 RTD-CAM Modes

##### 4.4.3.1.1 Reserve Pickup

The ISO will enter this RTD-CAM mode when necessary to re-establish schedules when large area control errors occur. When in this mode, RTD-CAM will send 10-minute Base Point Signals and produce schedules for the next ten minutes. RTD-CAM may also commit, or if necessary de-commit, Resources capable of starting or stopping within 10-minutes. The ISO will continue to optimize for Energy and Operating Reserves, will recognize locational Operating Reserve requirements and Scarcity Reserve Requirements, but will set all Regulation Service schedules to zero. If Resources are committed or de-committed in this RTD-CAM mode the schedules for them will be passed to RTC and the Real-Time Dispatch for their next execution.

Resources that are eligible to provide Operating Reserves and that are available to the ISO for dispatch in real-time are required to be able to meet the energy sustainability requirements set forth in applicable NERC, NPCC and/or NYSRC reliability requirements. When the ISO enters a reserve pickup RTD-CAM mode it will determine sustainable Energy schedules for Energy Storage Resources that are eligible to provide Operating Reserves and that are available to the ISO for dispatch based on their telemetered state of charge.

The ISO will have discretion to classify a reserve pickup as a "large event" or a "small event." In a small event the ISO will have discretion to reduce Base Point Signals in order to reduce transmission line loadings. The ISO will not ordinarily have this discretion in large events, except that it may determine Energy schedules that satisfy Operating Reserve energy sustainability requirements for Energy Storage Resources. The distinction also has significance with respect to a Supplier's eligibility to receive Bid Production Cost guarantee payment in accordance with Section 4.6.6 and Attachment C of this ISO Services Tariff.

#### 4.4.3.1.2 Maximum Generation Pickup

The ISO will enter this RTD-CAM mode when an Emergency makes it necessary to maximize Energy production in one or more location(s), i.e., Long Island, New York City, Southeastern New York, East of Central East and/or NYCA-wide. RTD-CAM will produce schedules directing all Generators and Aggregations located in a targeted location to increase production at their emergency response rate up to their $UOL_E$ level and to stay at that level until instructed otherwise. Security constraints will be obeyed to the extent possible. The ISO will continue to optimize for Energy and Operating Reserves, will recognize locational Operating Reserve requirements and Scarcity Reserve Requirements, but will set all Regulation Service schedules to zero.

#### 4.4.3.1.3 Base Points ASAP -- No Commitments

The ISO will enter this RTD-CAM mode when changed circumstances make it necessary to issue an updated set of Base Point Signals. Examples of changed circumstances that could necessitate taking this step include correcting line, contingency, or transfer overloads and/or voltage problems caused by unexpected system events. When operating in this mode, RTD-CAM will produce schedules and Base Point Signals for the next five minutes but will only redispatch Generators and Aggregations that are capable of responding within five minutes. RTD-CAM will not commit or de-commit Resources in this mode.

#### 4.4.3.1.4 Base Points ASAP -- Commit As Needed

This operating mode is identical to Base Points ASAP – No Commitments, except that it also allows the ISO to commit Generators that are capable of starting within 10 minutes when doing so is necessary to respond to changed system conditions.

#### 4.4.3.1.5 Re-Sequencing Mode

When the ISO is ready to de-activate RTD-CAM, it will often need to transition back to normal Real-Time Dispatch operation. In this mode, RTD-CAM will calculate normal five-minute Base Point Signals and establish five minute schedules. Unlike the normal RTD-Dispatch, however, RTD-CAM will only look ahead 10-minutes. RTD-CAM re-sequencing will terminate as soon as the normal Real-Time Dispatch software is reactivated and is ready to produce Base Point signals for its entire optimization period.

#### 4.4.3.2 Calculating Real-Time LBMPs

When RTD-CAM is activated, RTD shall calculate *ex ante* Real-Time LBMPs at each Generator bus, Transmission Node, and for each Load Zone in accordance with the procedures set forth in Section 17, Attachment B of this ISO Services Tariff.

### 4.4.4 Identifying the Pricing and Scheduling Rules That Apply to External Transactions

LBMPs will be determined and External Transactions will be scheduled at external Proxy Generator Buses consistent with the table below.

| | | | | | CTS Enabled Proxy Generator Bus | | Scheduling Frequencies | | |
|---|---|---|---|---|---|---|---|---|---|
| **Proxy Generator Bus** | **PTID** | **Scheduled Line** | **Designated Scheduled Line** | **Non-Competitive** | **Requires CTS Bids** | **Permits CTS Bids** | **Hourly Scheduled** | **Variably Scheduled** | **Dynamically Scheduled (Not Presently Available)** |
| Hydro Quebec | | | | | | | | | |
| HQ_GEN_IMPORT | 323601 | | | ✓ | | | ✓ | ✓ | |
| HQ_LOAD_EXPORT | 355639 | | | ✓ | | | ✓ | ✓ | |
| HQ_GEN_CEDARS_PROXY | 323590 | Dennison Scheduled Line | | ✓ | | | ✓ | | |
| HQ_LOAD_CEDARS_PROXY | 355586 | Dennison Scheduled Line | | ✓ | | | ✓ | | |
| HQ_GEN_WHEEL | 23651 | | | ✓ | | | ✓ | | |
| HQ_LOAD_WHEEL | 55856 | | | ✓ | | | ✓ | | |
| PJM | | | | | | | | | |
| PJM_GEN_KEYSTONE | 24065 | | | | | ✓ | ✓* (See Notes) | ✓ | |
| PJM_LOAD_KEYSTONE | 55857 | | | | | ✓ | ✓* (See Notes) | ✓ | |
| PJM_GEN_NEPTUNE_PROXY | 323594 | Neptune Scheduled Line | ✓ | | | ✓ | ✓* (See Notes) | ✓ | |
| PJM_LOAD_NEPTUNE_PROXY | 355615 | Neptune Scheduled Line | ✓ | | | ✓ | ✓* (See Notes) | ✓ | |
| PJM_GEN_VFT_PROXY | 323633 | Linden VFT Scheduled Line | ✓ | | | ✓ | ✓* (See Notes) | ✓ | |
| PJM_LOAD_VFT_PROXY | 355723 | Linden VFT Scheduled Line | ✓ | | | ✓ | ✓* (See Notes) | ✓ | |
| PJM_HTP_GEN | 323702 | HTP Scheduled Line | ✓ | | | ✓ | ✓* (See Notes) | ✓ | |

| Proxy Generator Bus | PTID | Scheduled Line | Designated Scheduled Line | Non-Competitive | CTS Enabled Proxy Generator Bus | | Scheduling Frequencies | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Requires CTS Bids | Permits CTS Bids | Hourly Scheduled | Variably Scheduled | Dynamically Scheduled (Not Presently Available) |
| HUDSONTP_345KV_HTP_LOAD | 355839 | HTP Scheduled Line | ✓ | | | ✓ | ✓* (See Notes) | ✓ | |
| ISO New England | | | | | | | | | |
| N.E._GEN_SANDY_POND | 24062 | | | | ✓ | | ✓** (See Notes) | ✓ | |
| NE_LOAD_SANDY_PD | 55858 | | | | ✓ | | ✓** (See Notes) | ✓ | |
| NPX_GEN_CSC | 323557 | Cross Sound Scheduled Line | ✓ | | | | ✓ | | |
| NPX_LOAD_CSC | 355535 | Cross Sound Scheduled Line | ✓ | | | | ✓ | | |
| NPX_GEN_1385_PROXY | 323591 | Northport Norwalk Scheduled Line | | | | | ✓ | | |
| NPX_LOAD_1385_PROXY | 355589 | Northport Norwalk Scheduled Line | | | | | ✓ | | |
| Ontario | | | | | | | | | |
| OH_GEN_PROXY | 24063 | | | | | | ✓ | | |
| OH_LOAD_PROXY | 55859 | | | | | | ✓ | | |

Notes:

* At specifically identified Proxy Generator Buses (“* See Notes”), only Wheels Through (the NYCA) are scheduled on an hourly basis.

** At specifically identified Proxy Generator Buses (“** See Notes”), only wheels through the NYCA or a neighboring Control Area are scheduled on an hourly basis.

Pricing rules for Proxy Generator Buses are set forth in Section 17 of the Services Tariff.

The ISO may offer a more frequent scheduling option at a Proxy Generator Bus identified on the table.  The ISO shall inform its Market Participants of the availability of such an option by providing notice at least two weeks in advance of the implementation of any such change.  At the same time, the ISO shall update the above table to reflect the change in scheduling options by submitting a compliance filing in FERC Docket No. ER11-2547.  Unless FERC acts on the ISO's compliance filing, the ISO shall effectuate the change in scheduling capability on the date it proposed in its compliance filing.  The addition of new Proxy Generator Buses to the table, or changing the pricing rules that apply at a Proxy Generator Bus, may not be accomplished by submitting a compliance filing in Docket No. ER11-2547.  The ISO may revert to establishing hourly Import and Export schedules using all available External Transaction Bids at a Proxy Generator Bus that is identified as a Dynamically or Variably Scheduled Proxy Generator Bus when the ISO or a neighboring Balancing Authority is not able to implement schedules as expected, or when necessary to ensure or preserve system reliability.  When it reverts to hourly Import and Export schedules at a Dynamically or Variably Scheduled Proxy Generator Bus, the ISO shall apply the pricing rules for a corresponding Proxy Generator Bus that is not Dynamically Scheduled or Variably Scheduled.  The ISO may cease evaluating CTS Interface Bids at CTS Enabled Proxy Generator Buses when the ISO or a neighboring Balancing Authority is not able to implement schedules as expected, or when necessary to ensure or preserve system reliability.

## 4.5 Real-Time Market Settlements

Transmission Customers and Customers taking service under this ISO Services Tariff or the ISO OATT, shall be subject to the Real-Time Market Settlement. All withdrawals, injections, and Demand Reductions not scheduled on a Day-Ahead basis, including Real-Time deviations from any Day-Ahead External Transaction schedules, shall be subject to the Real-Time Market Settlement. Transmission Customers not taking service under this Tariff shall be subject to balancing charges as provided for under the ISO OATT. Settlements with Suppliers scheduling service from External Suppliers to the LBMP Market or to External Loads from the LBMP Market will be based upon scheduled withdrawals or injections. Real-Time Market Settlements for Energy provided by Resources supplying Regulation Service or Operating Reserves shall follow the rules which are described in Rate Schedules 15.3 and 15.4, respectively.

For the purposes of this section, the scheduled output of each of the following Generators in each RTD interval in which it has offered Energy shall retroactively be set equal to its actual output in that RTD interval:

(i) Generators, except for the Generator of a Behind-the-Meter Net Generation Resource and Generators in an Aggregation, providing Energy under contracts executed and effective on or before November 18, 1999 (including PURPA contracts) in which the power purchaser does not control the operation of the supply source but would be responsible for penalties for being off-schedule, with the exception of Generators under must-take PURPA contracts executed and effective on or before November 18, 1999 who have not provided telemetering to their local TO and historically have not been eligible to participate in the NYPP market, which will continue to be treated as TO Load modifiers under the ISO-administered markets;

(ii) Existing topping turbine Generators and extraction turbine Generators producing electric Energy resulting from the supply of steam to the district steam system located in New York City (LBMP Zone J) in operation on or before November 18, 1999 and/or Generators utilized in replacing or repowering existing steam supplies from such units (in accordance with good engineering and economic design) that cannot follow schedules, up to a maximum total of 533 MW of such units.

This procedure shall not apply to Behind-the-Meter Net Generation Resources, Aggregations or a Generator for those hours it has used the ISO-Committed Flexible or Self-Committed Flexible bid mode.

In Sections 4.5.1, 4.5.2, 4.5.3, and 4.5.4 of this Tariff, references to “scheduled” Energy injections and withdrawals shall encompass injections, including Demand Reductions, and withdrawals that are scheduled Day-Ahead, unless otherwise noted, as well as injections and withdrawals that occur in connection with real-time Bilateral Transactions. In Sections 4.5.2 and 4.5.3 of this Tariff, references to Energy Withdrawals and Energy Injections shall not include Energy Withdrawals or Energy Injections in Virtual Transactions, or Energy Withdrawals or Energy Injections at Trading Hubs. Generators, including Limited Energy Storage Resources and Aggregations, that are providing Regulation Service shall not be subject to the real-time Energy market settlement provisions set forth in this Section, but shall instead be subject to the Energy settlement rules set forth in Rate Schedule 15.3 of this ISO Services Tariff.

### 4.5.1 Settlement for Customers Scheduled To Sell Energy in Virtual Transactions in Load Zones

The Actual Energy Injection in a Load Zone by a Customer scheduled Day-Ahead to sell Energy in a Virtual Transaction is zero and the Customer shall pay a charge for the Energy imbalance equal to the product of: (a) the Real-Time LBMP calculated in that hour for the applicable Load Zone; and (b) the scheduled Day-Ahead Energy Injection of the Customer for that Hour in that Load Zone.

### 4.5.2 Real-Time Market Settlements for Energy

#### 4.5.2.1 General Rules for Suppliers

A Supplier, which is not a DER Aggregation, shall pay or be paid for Energy imbalance to account for differences between Actual Energy Injections, compensable Demand Reductions, real-time Energy schedules and Day-Ahead Energy schedules.

A DER Aggregation shall pay or be paid for Energy imbalance based on the (1) Actual Energy Injections, real-time Energy schedules, Day-Ahead Energy schedules, and (2) all compensable Demand Reductions eligible for payment at the applicable LBMP pursuant to Services Tariff Section 4.5.7.

A Generator or Aggregation that is not following Base Point Signals shall not be compensated for Energy in excess of its Real-Time Scheduled Energy injection if its applicable upper operating limit has been reduced below its bid-in upper operating limit by the ISO in order to reconcile the ISO's dispatch with the Generator or Aggregation's actual output, or to address reliability concerns.

If the Energy provided by a Supplier over an RTD interval is less than the Supplier's Day-Ahead Energy schedule, and if the Supplier reduced the Energy it provides in response to instructions by the ISO or a Transmission Owner that were issued in order to maintain a secure and reliable dispatch, the Supplier may be entitled to a Day-Ahead Margin Assurance Payment, pursuant to Attachment J of this ISO Services Tariff.

#### 4.5.2.1.1 Supplier Payments when LBMP is Positive

When the LBMP calculated in that RTD interval at the applicable Generator or Aggregation's bus is positive, the Supplier payment shall be calculated as follows:

Supplier payment for Energy injections and withdrawals = $((\mathrm{MIN}(AE_{iu},RTS_{iu}) - DAS_{hu}) * LBMP_{iu}^{RT}) * \frac{S_i}{3600}$

Where:

$AE_{iu}$ = (1) average Actual Energy Injection by Supplier *u* in interval *i* expressed in terms of MW; or (2) average Actual Energy Withdrawal by an Energy Storage Resource *u* or Aggregation *u* that includes Energy Storage Resource(s) in interval *i* expressed in terms of MW;

$RTS_{iu}$ = (1) real-time Energy scheduled by Supplier *u* in interval *i* plus Compensable Overgeneration; or (2) real-time Energy scheduled for withdrawal by Energy Storage Resource *u* or Aggregation *u* that includes Withdrawal-Eligible Generator(s) in interval *i* plus 3% of the absolute value of the Energy Storage Resource's or Aggregation's Lower Operating Limit; or (3) average Actual Energy Withdrawal by an Energy Storage Resource *u* or Aggregation *u* that includes Withdrawal-Eligible Generator(s) in interval *i* when it has been designated as operating Out-of-Merit to withdraw at the request of a Transmission Owner or the ISO;

$DAS_{hu}$ = Day-Ahead Energy schedule for Supplier *u* in hour *h* containing interval *i*;

$LBMP_{iu}^{RT}$ = real-time price of Energy at the location of Supplier *u* in interval *i*;

$S_i$ = number of seconds in RTD interval *i*;

Supplier payment for Demand Reductions =

$(\mathrm{MIN}(ADR_{iu}, \mathrm{MAX}(RTS_{iu} - AE_{iu}, 0)) * LBMP_{iu}^{RT}) * \frac{S_i}{3600}$

Where:

$ADR_{iu}$ = average Actual Demand Reduction that is eligible for Energy payments pursuant to Services Tariff Section 4.5.7 by Supplier *u* in interval *i*, the $ADR_{iu}$ term will be set to zero if the Actual Demand Reduction is not eligible for Energy payments pursuant to Services Tariff Section 4.5.7;

The remaining variables are defined above in this Section 4.5.2.1.1.

#### 4.5.2.1.2 Supplier Payments when LBMP is negative, during a large event reserve pickup, during a maximum generation pickup, or during a Transmission Owner initiated reserve pickup

When: (1) the LBMP calculated in that RTD interval at the applicable Generator or Aggregation bus is negative; or (2) the ISO initiates a large event reserve pickup or a maximum generation pickup under RTD-CAM that applies to the Load Zone where the Generator or Aggregation is located; or (3) a Transmission Owner initiates a reserve pickup in accordance with a Reliability Rule, including a Local Reliability Rule, then the Supplier payment shall be calculated as follows:

Supplier payment for Energy injections and withdrawals = $((AE_{iu} - DAS_{hu}) * LBMP_{iu}^{RT}) * \frac{S_i}{3600}$

Where:

The variables are defined above in this Section 4.5.2.1.1.

Supplier payment for Demand Reductions = $ADR_{iu} * LBMP_{iu}^{RT} * \frac{S_i}{3600}$

Where:

$ADR_{iu}$ = average Actual Demand Reduction by Supplier *u* in interval *i*;

The remaining variables are defined above in Section 4.5.2.1.1.

#### 4.5.2.1.3 Supplier Payments for Imports

Suppliers scheduling Imports shall pay or be paid for Energy imbalance to account for differences between real-time Energy schedules and Day-Ahead Energy schedules. For an

Import to the LBMP Market that is only scheduled in the Real-Time Market, or to the extent it is scheduled to supply additional or less Energy to the LBMP Market in real-time than it was scheduled to supply Day-Ahead, the Supplier payment shall be calculated as follows:

$$\text{Supplier payment for Imports} = ((RTS_{iup} - DAS_{hup}) * LBMP_{ip}^{RT}) * \frac{S_i}{3600}$$

Where:

| | | |
|---|---|---|
| $RTS_{iup}$ | = | real-time Energy scheduled for injection by Supplier *u* in interval *i* at Proxy Generator Bus *p*; |
| $DAS_{hup}$ | = | Day-Ahead Energy schedule for Supplier *u* in hour *h* containing interval *i* at Proxy Generator Bus *p*; |
| $LBMP_{ip}^{RT}$ | = | real-time price of Energy at the Point of Receipt *p* (*i.e.*, the Proxy Generator Bus) in interval *i*; |
| $S_i$ | = | number of seconds in RTD interval *i*; |

#### 4.5.2.2 Failed Transactions

If an Energy injection scheduled by RTC at a Proxy Generator Bus fails in the ISO's checkout process and the checkout failure occurred for reasons within the Supplier's or Transmission Customer's control, it will be required to pay the "Financial Impact Charge" described below. The ISO will determine whether the Transaction associated with an injection failed for reasons within a Supplier's or Transmission Customer's control.

If an Energy injection at a Proxy Generator Bus is determined to have failed for reasons within a Supplier's or Transmission Customer's control, the Financial Impact Charge will equal: (i) the difference computed by subtracting the actual real-time Energy injection from the amount of the Import scheduled by RTC; multiplied by (ii) the greater of the Real-Time Market Congestion Component of the LBMP in the relevant interval, or zero.

If a Wheel Through fails for reasons within a Supplier's or Transmission Customer's control, the Financial Impact Charge will equal the sum of the Financial Impact Charge described in this section and the Financial Impact Charge described below in Section 4.5.3.2.

All Financial Impact Charges collected by the ISO shall be used to reduce the charges assessed under Rate Schedule 1 of this ISO Services Tariff. In the event that the Energy injections for an Import scheduled by RTC or RTD, at a Proxy Generator Bus is Curtailed at the request of the ISO, and (i) the real-time Energy Profile MW is equal to or greater than the Day-Ahead Energy Schedule for that interval, and (ii) the real-time Decremental Bid is less than or equal to the default real-time Decremental Bid amount as established by ISO procedures, then the Supplier or Transmission Customer that is subjected to the Curtailment, in addition to the charge for Energy Imbalance, shall be eligible to receive an Import Curtailment Guarantee Payment for its curtailed Import pursuant to Attachment J of this ISO Services Tariff.

**4.5.2.3 Capacity Limited Resources and Energy Limited Resources**

For any hour in which: (i) a Capacity Limited Resource or an Aggregation comprised entirely of Capacity Limited Resources is scheduled to supply Energy, Operating Reserves, or Regulation Service in the Day-Ahead Market; (ii) the sum of its schedules to provide these services exceeds its bid-in upper operating limit; (iii) the Capacity Limited Resource or Aggregation comprised entirely of Capacity Limited Resources requests a reduction for Capacity limitation reasons; and (iv) the ISO reduces the Capacity Limited Resource's or Aggregation comprised entirely of Capacity Limited Resources upper operating limit to a level equal to, or greater than, its bid-in upper operating limit; the imbalance charge for Energy, Operating Reserve Service or Regulation Service imposed on that Capacity Limited Resource or Aggregation comprised entirely of Capacity Limited Resources for that hour for its Day-Ahead

Market obligations above its Capacity limited upper operating limit shall be equal to the product of: (a) the Real-Time price for Energy, Operating Reserve Service and Regulation Capacity; and (b) the Capacity Limited Resource's or the Aggregation comprised entirely of Capacity Limited Resources Day-Ahead schedule for each of these services minus the amount of these services that it has an obligation to supply pursuant to its ISO-approved schedule. When a Capacity Limited Resource's or the Aggregation comprised entirely of Capacity Limited Resources Day-Ahead obligation above its Capacity limited upper operating limit is balanced as described above, any real-time variation from its obligation pursuant to its Capacity limited schedules shall be settled pursuant to the methodology set forth in Section 4.5.2.1.

For any day in which: (i) an Energy Limited Resource or an Aggregation comprised entirely of Capacity Limited Resources is scheduled to supply Energy, Operating Reserves or Regulation Service in the Day-Ahead Market; (ii) the sum of its schedules to provide these services exceeds its bid-in Normal Upper Operating Limit; (iii) the Energy Limited Resource or the Aggregation comprised entirely of Capacity Limited Resources requests a reduction for Energy limitation reasons; and (iv) the ISO reduces the Energy Limited Resource's Day-Ahead Emergency Upper Operating Limit to a limit no lower than the Normal Upper Operating Limit; the Resource may be eligible to receive a Day-Ahead Margin Assurance Payment pursuant to Attachment J of this ISO Services Tariff.

#### 4.5.2.4 Demand Reductions

When the verified actual Demand Reduction over an hour from a Demand Reduction Provider that is also the LSE providing Energy service to the Demand Side Resource(s) that produced the reduction is less than the Demand Reduction scheduled for that hour, that-LSE shall pay a Demand Reduction imbalance charge consisting of the product of: (a) the greater of the

Day-Ahead LBMP or the Real-Time LBMP for that hour and (b) the difference between the scheduled Demand Reduction and the verified actual Demand Reduction in that hour.

When the verified actual Demand Reduction over an hour from a Demand Reduction Provider that is not the LSE providing Energy service to the Demand Side Resource(s) that produced the reduction is less than the Demand Reduction scheduled over that hour, then (1) the LSE providing Energy service to the Demand Reduction Provider's Demand Side Resource(s) shall pay a Demand Reduction imbalance charge equal to the product of (a) the Day-Ahead LBMP calculated for that hour for the applicable Load bus and (b) the difference between the scheduled Demand Reduction and the verified actual Demand Reduction at that bus in that hour, and (2) the Demand Reduction Provider will pay an amount equal to (a) the product of (i) the higher of the Day-Ahead LBMP or the Real-Time LBMP calculated for that hour for the applicable Load bus, and (ii) the difference between the scheduled Demand Reduction and the verified actual Demand Reduction at that bus in that hour, and (b) minus the amount paid by the LSE providing service to the Demand Reduction Provider's Demand Side Resource(s) under (1), above.

### 4.5.3 Real-Time Market Settlements for Energy Withdrawals Other Than in Virtual Transactions

#### 4.5.3.1 General Rules

A Customer (other than a Generator that is eligible to withdraw Energy) shall pay or be paid for Energy imbalance to account for differences between Actual Energy Withdrawals over an RTD interval and its Energy withdrawals scheduled Day-Ahead. The ISO shall charge the Customer as follows for each applicable Load Zone:

$$\text{Customer Charge} = ((\text{AEW}_{icz} - \text{DAS}_{hcz}) * LBMP_{iz}^{RT}) * \frac{S_i}{3600}$$

Where:

$AEW_{icz}$ = Actual Energy Withdrawal by Customer *c* in Load Zone *z* in interval *i*;

$DAS_{hcz}$ = Day-Ahead scheduled Energy withdrawals by Customer *c* in Load Zone *z* in hour *h* containing interval *i*;

$LBMP_{iz}^{RT}$ = real-time price of Energy for Load Zone *z* in interval *i*;

$S_i$ = number of seconds in RTD interval i;

A Customer LSE providing Energy service to a Demand Reduction Provider's Demand Side Resource in a Load Zone shall be charged the product of: (a) the Real-Time hourly LBMP for that Load Zone; and (b) the actual Demand Reduction at the Demand Reduction Bus in that Load Zone.

If the Generator of a Behind-the-Meter Net Generation Resource is not able to serve the Resource's Host Load at any time, any resulting Actual Energy Withdrawals that serve the Host Load will be charged to the Load Serving Entity responsible for serving the Behind-the-Meter Net Generation Resource.

**4.5.3.1.1 Customer Settlements for Exports**

Customers scheduling Exports shall pay or be paid for Energy imbalance to account for differences between real-time Energy schedules and Day-Ahead Energy schedules. For an Export from the LBMP Market that is only scheduled in the Real-Time Market, or to the extent it is scheduled to withdraw additional or less Energy from the LBMP Market in real-time than it was scheduled to withdraw Day-Ahead, the ISO shall charge the Customer as follows:

Customer Charge for Exports = $((RTS_{iup} - DAS_{hup}) * LBMP_{ip}^{RT}) * \frac{S_i}{3600}$

Where:

$RTS_{iup}$ = real-time Energy scheduled for withdrawal by Customer *u* in interval *i* at Proxy Generator Bus *p*;

$DAS_{hup}$ = Day-Ahead Energy schedule for Customer *u* in hour *h* containing interval *i* at Proxy Generator Bus *p*;

$LBMP_{ip}^{RT}$ = real-time price of Energy at the Point of Delivery *p* (*i.e.*, the Proxy Generator Bus) in interval *i*;

$S_i$ = number of seconds in RTD interval i;

#### 4.5.3.2 Failed Transactions

If an Energy withdrawal at a Proxy Generator Bus scheduled by RTC fails in the ISO's checkout process and the checkout failure occurred for reasons within the Supplier's or Transmission Customer's control, it will be required to pay the "Financial Impact Charge" described below. The ISO will determine whether the Transaction associated with a withdrawal failed for reasons within a Supplier's or Transmission Customer's control.

If an Energy withdrawal at a Proxy Generator Bus is determined to have failed for reasons within a Supplier's or Transmission Customer's control, the Financial Impact Charge will equal: (i) the difference computed by subtracting the actual real-time Energy withdrawal from the amount of the Export scheduled by RTC; multiplied by (ii) the product of negative one and the lesser of the Real-Time Market Congestion Component of the LBMP in the relevant interval, or zero.

If a Wheel Through fails for reasons within a Supplier's or Transmission Customer's control, the Financial Impact Charge will equal the sum of the Financial Impact Charge described in this subsection and the Financial Impact Charge described above in Section 4.5.2.2.

All Financial Impact Charges collected by the ISO shall be used to reduce the charges assessed under Rate Schedule 15.1 of this ISO Services Tariff.

### 4.5.4 Settlement for Customers Scheduled To Purchase Energy in Virtual Transactions in Load Zones

The Actual Energy Withdrawal in a Load Zone by a Customer scheduled Day-Ahead to purchase Energy in a Virtual Transaction is zero and the Customer shall be paid the product of: (a) the Real-Time LBMP calculated in that hour for the applicable Load Zone; and (b) the scheduled Day-Ahead Energy Withdrawal of the Customer for that Hour in that Load Zone.

### 4.5.5 Settlement for Trading Hub Energy Owner when POI is a Trading Hub

Each Trading Hub Energy Owner who bids a Bilateral Transaction into the Real-Time Market with a Trading Hub as its POI and has its schedule accepted by the ISO will pay the product of: (a) the hourly integrated Real-Time LBMP for the Load Zone associated with that Trading Hub; and (b) the Bilateral Transaction scheduled MW.

### 4.5.6 Settlement for Trading Hub Energy Owner when POW is a Trading Hub

Each Trading Hub Energy Owner who bids a Bilateral Transaction into the Real-Time Market with a Trading Hub as its POW and has its schedule accepted by the ISO will be paid the product of: (a) the hourly integrated Real-Time LBMP for the Load Zone associated with that Trading Hub; and (b) the Bilateral Transaction scheduled MW.

### 4.5.7 Settlement for Demand Reductions

#### 4.5.7.1 Monthly Net Benefits Test

The ISO shall perform the Net Benefits Test and post on its web site the Monthly Net Benefit Threshold for each month by the 15th of the preceding month in accordance with ISO Procedures. The Net Benefits Test shall establish the threshold price below which the dispatch of Energy from Demand Side Resources is not cost-effective. The Net Benefits Test shall consist of the following steps: (1) the ISO shall compile hourly supply curves for the Reference

Month; (2) the ISO shall develop the average supply curve for the Study Month by updating the Reference Month supply curves for retirements and new entrants, and adjusting offers for changes in fuel prices; (3) the ISO shall apply an appropriate mathematical formula to smooth the average supply curve; and (4) the ISO shall evaluate the smoothed average supply curve to determine the Monthly Net Benefit Floor/Threshold for the Study Month.

The ISO shall promptly post corrections, where necessary, to the Monthly Net Benefit Threshold. Corrections shall only apply to errors in conducting the calculations described above and/or in posting the properly calculated Monthly Net Benefit Threshold. Corrections shall not include recalculations based on changes in gas prices.

#### 4.5.7.2 Settlement Eligibility for Demand Reductions

A DER Aggregation may offer into the Day-Ahead Market or Real-Time Market below the Monthly Net Benefit Threshold. However, when a DER Aggregation receives a real-time Energy schedule, and the Real-Time LBMP calculated in that RTD interval for the applicable Transmission Node is less than the Monthly Net Benefit Threshold price, Demand Reductions by the DER Aggregation shall not be eligible for Energy payments, Day Ahead Margin Assurance Payments or Bid Production Cost guarantee payments otherwise available under this Services Tariff. Provided, however, if the DER Aggregation is dispatched by the ISO or Transmission Owner to meet NYCA or local system reliability, the Demand Reductions shall be eligible for Energy payments. The DER Aggregation may also be eligible for Day Ahead Margin Assurance Payments pursuant to Attachment J of this ISO Services Tariff and Bid Production Cost guarantee payments pursuant to Attachment C of this ISO Services Tariff.

### 4.5.8 Performance Tracking

The ISO shall use a Performance Tracking System to compute the difference between the Energy actually supplied and the Energy scheduled by the ISO for all Suppliers located within the NYCA and shall use it to measure compliance with criteria associated with the provision of Energy and Ancillary Services as set forth in the ISO Procedures. The Performance Tracking System shall also be used to report metrics for Loads.

## 4.6 Payments

### 4.6.1 Payments to Suppliers of Regulation Service

Suppliers of Regulation Service shall receive a payment that is calculated pursuant to Rate Schedule 15.3 of this ISO Services Tariff

### 4.6.2 Payments to Suppliers of Reactive Supply and Voltage Support Service ("Voltage Support Service")

Suppliers of Voltage Support Service shall receive a Voltage Support Service payment in accordance with the criteria and formula in Rate Schedule 15.2.

### 4.6.3 Payments to Suppliers for Operating Reserves

Suppliers of each type of Operating Reserve will receive payments for each MW of Operating Reserve that they provide, as requested by the ISO, pursuant to Rate Schedule 15.4.

Additionally, Generators and Aggregations providing Operating Reserves shall receive a payment for Energy injections when the ISO requests Energy under a reserve activation. The Energy payment shall be calculated as the product of: (a) the Energy provided; and (b) the Real-Time Market LBMP.

### 4.6.4 Payments to Generators for Black Start Capability

Black Start Capability providers shall receive a payment for Black Start Capability as set forth in Rate Schedule 15.5.

### 4.6.5 Day-Ahead Margin Assurance Payments

A Supplier that is scheduled in the Day-Ahead Market to provide Energy, Regulation Service, or Operating Reserves may be eligible to receive a Day-Ahead Margin Assurance Payment pursuant to Attachment J of this ISO Services Tariff.

### 4.6.6 Bid Production Cost Guarantee Payments

#### 4.6.6.1 Day-Ahead BPCG for Generators

The ISO shall determine if a Supplier eligible under Section 18.2.1 of Attachment C of this ISO Services Tariff for a Day-Ahead Bid Production Cost guarantee payment will not recover its Day-Ahead Regulation Capacity Bid, Operating Reserves Bid, or its Minimum Generation Bid, Start-Up Bid, and Incremental Energy Bid for Energy scheduled in the Day-Ahead Market, including Energy provided by the capacity scheduled for Regulation Service, through Day-Ahead LBMP revenue, Day-Ahead Imputed LBMP Revenue and net Day-Ahead Ancillary Services revenues for Voltage Support Service, Regulation Service, and synchronized Operating Reserves. Such determination shall be made for an entire Day-Ahead Market day, and such determination shall be made separately for each Generator. On the basis of such determination (and subject to any mitigation that may apply) the ISO shall pay a Day-Ahead BPCG to the Supplier pursuant to Section 18.2 of Attachment C to this ISO Services Tariff.

#### 4.6.6.2 Day-Ahead BPCG for Imports

The ISO shall determine if a Supplier supplying an Import and eligible under Section 18.3.1 of Attachment C of this ISO Services Tariff for a Day-Ahead Bid Production Cost guarantee payment will not recover its Day-Ahead Decremental Bid through Day-Ahead LBMP revenue and Day-Ahead Imputed LBMP Revenue. Such determination shall be made for an entire Day-Ahead Market day and such determination shall be made separately for each Import transaction. On the basis of such determination, the ISO shall pay a Day-Ahead Bid Production Cost guarantee payment to the Supplier pursuant to Section 18.3 of Attachment C of this ISO Services Tariff.

#### 4.6.6.3 Real-Time BPCG for Generators in RTD Intervals Other than Supplemental Event Intervals

The ISO shall determine if a Supplier eligible under Section 18.4.1 of Attachment C of this ISO Services Tariff for a real-time Bid Production Cost guarantee payment will not recover its real-time Regulation Capacity Bid, Regulation Movement Bid, Operating Reserves Bid, or its Minimum Generation Bid, Start-Up Bid, and Incremental Energy Bid for Energy that was not scheduled in the Day-Ahead Market, including Energy provided by the capacity scheduled for Regulation Service, through real-time LBMP revenue, real-time Imputed LBMP Revenue and net real-time Ancillary Services revenues for Voltage Support Service, Regulation Service, and synchronized Operating Reserves. Such determination shall be made for an entire Dispatch Day (except for Supplemental Event Intervals). Such determination shall be made separately for each Generator. On the basis of such determination, and subject to any mitigation that may apply, the ISO shall pay a real-time Bid Production Cost guarantee payment to the Supplier pursuant to Section 18.4 of Attachment C to this ISO Services Tariff and, as applicable, Section 15.3.

Suppliers bidding on behalf of Resources that were not committed by the ISO to operate in a given Dispatch Day, but which continue to operate due to minimum run time Constraints, shall not receive such a supplemental payment.

#### 4.6.6.4 BPCG for Generators for Supplemental Event Intervals

The ISO shall determine if a Supplier eligible under Section 18.5.1 of Attachment C of this ISO Services Tariff for a Bid Production Cost guarantee payment for a Supplemental Event Interval will not recover its real-time Regulation Capacity Bid, Regulation Movement Bid, Operating Reserves Bid, or its Minimum Generation Bid and Incremental Energy Bid for Energy that was not scheduled Day-Ahead, including Energy provided by the capacity scheduled for

Regulation Service, through real-time LBMP revenue, real-time Imputed LBMP Revenue and net real-time Ancillary Services revenues for Voltage Support Service, Regulation Service, and Operating Reserves in that interval. Such determination shall be made separately for each Supplemental Event Interval, and such determination shall be made separately for each Generator. On the basis of such determination, the ISO shall pay a Bid Production Cost guarantee payment to the Supplier for a Supplemental Event Interval pursuant to Section 18.5 of Attachment C of this ISO Services Tariff.

**4.6.6.5 Real-Time BPCG for External Transactions**

External Transactions are not eligible to receive Bid Production Cost guarantee payments in the Real-Time Market pursuant to Section 18.6 of Attachment C of this ISO Services Tariff.

**4.6.6.6 BPCG for Long Start-Up Time Generators Whose Starts Are Aborted by the ISO Prior to their Dispatch**

The ISO shall pay a Supplier eligible under Section 18.7.1 of Attachment C of this ISO Services Tariff for a Bid Production Cost guarantee payment for a long start-up time Generator (i.e., a Generator that cannot be scheduled by SCUC to start up in time for the next Dispatch Day) whose start is aborted by the ISO prior to its dispatch for that portion of its Start-Up Bid that corresponds to that portion of its start-up sequence that it completed prior to being aborted. Such determination shall be made for an entire Dispatch Day, and such determination shall be made separately for each long start-up time Generator. On the basis of such determination, the ISO shall pay a Bid Production Cost guarantee payment to the Supplier pursuant to Section 18.7 of Attachment C of this ISO Services Tariff.

#### 4.6.6.7 BPCG for Demand Reduction in the Day-Ahead Market

The ISO shall determine if a Demand Reduction Provider eligible under Section 18.8.1 of Attachment C of this ISO Services Tariff for a Bid Production Cost guarantee payment for Demand Reduction in the Day-Ahead Market will not recover its Day-Ahead Curtailment Initiation Cost and its Day-Ahead Demand Reduction Bid through Day-Ahead LBMP revenues. Such determination shall be made for an entire Day-Ahead Market day, and such determination shall be made separately for each Demand Side Resource. On the basis of such determination, the ISO shall pay a Bid Production Cost guarantee payment to the Demand Reduction Provider pursuant to Section 18.8 of Attachment C of this ISO Services Tariff.

#### 4.6.6.8 BPCG for Special Case Resources

The ISO shall determine if a Supplier eligible under Section 18.9.1 of Attachment C of this ISO Services Tariff for a Bid Production Cost guarantee payment for a Special Case Resource will not recover its Minimum Payment Nomination through real-time LBMP revenues. Such determination shall be made for an entire Dispatch Day, and such determination shall be made separately for each Special Case Resource. On the basis of such determination, the ISO shall make a Bid Production Cost guarantee payment to the Supplier pursuant to Section 18.9 of Attachment C of this ISO Services Tariff.

#### 4.6.6.9 Day-Ahead BPCG for Demand Side Resources Scheduled to Provide Synchronized Operating Reserves and/ or Regulation Service

The ISO shall determine if a Supplier that bids Demand Side Resources committed by the ISO to provide synchronized Operating Reserves and/or Regulation Service in the Day-Ahead Market will not recover its Day-Ahead synchronized Operating Reserves Bid to provide the amount of synchronized Operating Reserves that it was scheduled to provide, and/or its Day-

Ahead Regulation Capacity Bid to provide the amount of Regulation Capacity that it was scheduled to provide. Such supplier shall be eligible under Section 18.10.1 of Attachment C to this ISO Services Tariff for a Day-Ahead Bid Production Cost guarantee payment. Such determination shall be made for an entire Day-Ahead Market day, and such determination shall be made separately for each Demand Side Resource. On the basis of such determination, the ISO shall make a Bid Production Cost guarantee payment to the Customer pursuant to Section 18.10 of Attachment C of this ISO Services Tariff.

#### 4.6.6.10 Real-Time BPCG for Demand Side Resources Scheduled to Provide Synchronized Operating Reserves and/ or Regulation Service

The ISO shall determine if a Supplier that bids Demand Side Resources committed by the ISO to provide synchronized Operating Reserves and/or Regulation Service will not recover its real-time synchronized Operating Reserves Bid to provide the amount of synchronized Operating Reserves that it was scheduled to provide, and/or its real-time Regulation Capacity and Regulation Bids to provide Regulation Service. Such Supplier shall be eligible under Section 18.11.1 of Attachment C to this ISO Services Tariff for a real-time Bid Production Cost guarantee payment. Such determination shall be made for an entire Dispatch Day, and such determination shall be made separately for each Demand Side Resource. On the basis of such determination, the ISO shall make a Bid Production Cost guarantee payment to the Customer pursuant to Section 18.11 of Attachment C of this ISO Services Tariff.

## 5.7 Requirements For Entities Not Located Within The New York Control Area

In order for a Supplier or a Load that is not included within the NYCA to take services under the Tariff, it must be contained, in whole or in part, within a separate Control Area that meets all of the requirements for a Control Area defined by NERC, NPCC and any succeeding organizations. An entity that is contained in a Control Area other than the NYCA may take services under the ISO Services Tariff for the purpose of engaging in Control Area to Control Area Capacity and Energy Transactions with the ISO. In order for a Supplier or a Load not contained in the NYCA to take services under the ISO Services Tariff, an inter-Control Area agreement between the Control Area in which the entity is located and the ISO, that satisfies the reasonable requirements of both Control Area operators, must be in place. Energy Storage Resources, Intermittent Power Resources, and Limited Control Run of River Hydro Resources that are not electrically located within the NYCA are not eligible to participate in the ISO Installed Capacity market. Resources in External Control Areas that have an Energy Duration Limitation or are seeking to participate in the ISO's markets in an Aggregation are not eligible to participate in the ISO's Installed Capacity market.

## 5.8 Communication and Metering Requirements for Control Area Services

The ISO shall arrange for and maintain reliable communications and metering facilities between the ISO and the Transmission Owners in the NYCA and the Control Area operators of all neighboring interconnected Control Areas. Such facilities may consist of data circuits, voice lines, meters and other facilities deemed necessary by the ISO to maintain reliable communication links for the sole purpose of transmitting operations and reliability data and instructions. The ISO shall be responsible for the specification, installation and maintenance of the required facilities according to ISO Procedures. The costs incurred by the ISO to establish communications facilities between the ISO and a Security Coordinators of a neighboring Control Area shall be borne by the Control Area that requested the establishment of the communications facilities unless a different arrangement is agreed to by both Control Areas. The total cost of the communications facilities between the ISO and the Transmission Owners and the portion of the cost of inter-Control Area communication facilities assigned to the ISO shall be collected from all Customers in accordance with Rate Schedule 15.1 of the ISO Services Tariff. Transmission Owners with communications requirements which exceed those required by the ISO shall procure and maintain such additional facilities at their own expense.

Generators, Suppliers and Loads are required to exchange certain operating and reliability data with the ISO and the Transmission Owners' Control Centers in accordance with the ISO Agreement and the ISO/TO Agreement, applicable ISO operating and reliability requirements, and in conjunction with any requirements for interconnection with the Transmission Owner.

In addition, Suppliers wishing to submit Bids in the RTC for Energy or Regulation Service must make provision to receive command and control information from the ISO. Those Generators or Suppliers currently providing this capability via a Transmission Owner may continue to do so.  Those requiring installation of this capability must contract with the ISO or with the interconnected Transmission Owner and must comply with applicable ISO or Transmission Owner data and other technical requirements.

Suppliers with multiple units at a single location must maintain a consistent representation of the plant with the ISO with respect to the combination of all of the units at a single location, for purposes of bidding.  If an single Bid is to be provided for a group of specific units at a plant and those units are bidding in the RTC, or providing Regulation Service, then the ISO shall model those units as a single group for purposes of dispatch, control and security modeling.  The ISO will provide a single aggregate Base Point Signal and unit control error.  If, however, the Supplier wishes to dispatch units individually, then it must configure both its bidding and data interfaces accordingly.  Each Supplier must initially specify the configuration of the plant for purposes of bidding aggregation and must then maintain bidding and data interfaces consistent with that configuration.  Similar modeling, control and bidding Constraints apply to an LSE that bids Load that is dispatchable by the ISO.

### 5.8.1 Collection and Communication of Energy Forecasting Data by Intermittent Power Resources that Depend on Wind or Solar Energy as Their Fuel

Pursuant to ISO Procedures, Intermittent Power Resources that depend on wind or solar energy as their fuel shall maintain in good working order equipment to collect data required for energy forecasting and shall provide the ISO, or its agent, with this data in the manner identified by the ISO, provided however this requirement shall not apply to (i) any Intermittent Power Resource that depends on solar energy as its fuel with a nameplate capacity of 20 MW or fewer, or (ii) any Intermittent Power Resource in commercial operation as of January 1, 2002 with nameplate capacity of 12 MWs or fewer, and (iii) an Intermittent Power Resource depending on wind as its fuel that participates in a DER Aggregation. An Intermittent Power Resource (except an Intermittent Power Resource participating in a DER Aggregation) that depends on wind as its fuel shall, in accordance with ISO Procedures, provide the ISO with wind speed and wind direction data for its site, and maximum available megawatt data. An Intermittent Power Resource (except an Intermittent Power Resource participating in a DER Aggregation) that depends on solar energy as its fuel shall, in accordance with ISO Procedures, provide the ISO with plane of array irradiance and back panel temperature data for its site, and maximum available megawatt data. Each Intermittent Power Resource subject to this Section shall be responsible for the cost of installing and maintaining such equipment at its site, as well as the cost of installing and maintaining the software and hardware necessary to provide the required data described above, in accordance with ISO Procedures.

The ISO may impose financial sanctions for failure to provide the required data described above.

Upon a determination of failure to provide the required data, the ISO shall take the following actions. The ISO shall notify the Intermittent Power Resource by written notice of its determination of failure to provide the required data and that the ISO may impose financial sanctions if the failure is not corrected. The ISO shall offer a reasonable opportunity to correct the failure to provide the required data. If, following such reasonable opportunity to cure, such failure is not cured, the ISO may impose daily sanctions of the greater of $500 or $20/MW of nameplate capacity until such failure is cured. The ISO shall offer the Intermittent Power Resource an opportunity to be heard by senior officers of the ISO prior to imposing sanctions.

## 5.11 Requirements Applicable to LSEs

### 5.11.1 Allocation of the NYCA Minimum Unforced Capacity Requirement

Each Transmission Owner must submit aggregate Adjusted Load data, coincident with the hour of the NYCA Peak Load Forecast, for all customers served by each LSE active within its Transmission District. The aggregate Load data may be derived from direct meters or Load profiles of the customers served. Each Transmission Owner shall be required to submit such forecasts and aggregate peak Load data in accordance with the ISO Procedures. Each municipal electric utility may choose to submit its peak Load forecast based on the Transmission District's peak Load forecast provided by a Transmission Owner or to provide its own. The ISO shall consider, in accordance with ISO Procedures, the effects of Demand Reductions by DER participating in the Installed Capacity Market to determine the Adjusted Actual Load to prevent double-counting the Demand Reduction in the LSE Unforced Capacity Obligation. Any disputes arising out of the submittals required in this paragraph shall be resolved through the Expedited Dispute Resolution Procedures set forth in Section 5.17 of this Tariff.

All aggregate Load data submitted by a Transmission Owner must be accompanied by documentation indicating that each affected LSE has been provided the data regarding the assignment of customers to the affected LSE. Any disputes between LSEs and Transmission Owners regarding such data or assignments shall be resolved through the Expedited Dispute Resolution Procedures set forth in Section 5.17 of this Tariff, or the Transmission Owner's retail access procedures, as applicable.

The ISO shall allocate the NYCA Minimum Unforced Capacity Requirement among all LSEs serving Load in the NYCA prior to the beginning of each Capability Year. It shall then adjust the NYCA Minimum Unforced Capacity Requirement and reallocate it among LSEs before each Winter Capability Period as necessary to reflect changes in the factors used to translate ICAP requirements into Unforced Capacity requirements. Each LSE's share of the NYCA Minimum Unforced Capacity Requirement will equal the product of: (i) the NYCA Minimum Installed Capacity Requirement as translated into a NYCA Minimum Unforced Capacity Requirement; and (ii) the ratio of the sum of the Load forecasts coincident with the NYCA Peak Load Forecast for that LSE's customers in each Transmission District to the NYCA Peak Load Forecast.

Each LSE Unforced Capacity Obligation will equal the product of (i) the ratio of that LSE's share of the NYCA Minimum Unforced Capacity Requirement to the total NYCA Minimum Unforced Capacity Requirement and (ii) the total of all of the LSE Unforced Capacity Obligations for the NYCA established by the ICAP Spot Market Auction. The LSE Unforced Capacity Obligation will be determined in each Obligation Procurement Period by the ICAP Spot Market Auction, in accordance with the ISO Procedures. Each LSE will be responsible for acquiring sufficient Unforced Capacity to satisfy its LSE Unforced Capacity Obligations. LSEs with Load in more than one Locality will have an LSE Unforced Capacity Obligation for each Locality.

Prior to the beginning of each Capability Period, Transmission Owners shall submit the required Load-shifting information to the ISO and to each LSE affected by the Load-shifting, in accordance with the ISO Procedures. In the event that there is a pending dispute regarding a Transmission Owner's forecast, the ISO shall nevertheless establish each LSE's portion of the NYCA Minimum Unforced Capacity Requirement applicable at the beginning of each Capability Period in accordance with the schedule established in the ISO Procedures, subject to possible adjustments that may be required as a result of resolution of the dispute through the Expedited Dispute Resolution Procedures set forth in Section 5.17 of this Tariff.

Each month, as Transmission Owners report customers gained and lost by LSEs through Load-shifting, the ISO will adjust each LSE's portion of the NYCA Minimum Unforced Capacity Requirement such that (i) the total Transmission District Installed Capacity requirement remains constant and (ii) an individual LSE's allocated portion reflects the gains and losses. If an LSE loses a customer as a result of that customer leaving the Transmission District, the Load-losing LSE shall be relieved of its obligation to procure Unforced Capacity to cover the Load associated with the departing customer as of the date that the customer's departure is accepted by the ISO and shall be free to sell any excess Unforced Capacity. In addition, when a customer leaves the Transmission District, the ISO will adjust each LSE's portion of the NYCA Minimum Unforced Capacity Requirement so that the total Transmission District's share of the NYCA Minimum Unforced Capacity Requirement remains constant.

### 5.11.2 LSE Obligations

Each LSE must procure Unforced Capacity in an amount equal to its LSE Unforced Capacity Obligation from any Installed Capacity Supplier through Bilateral Transactions with purchases in ISO-administered Installed Capacity auctions, by self-supply from qualified sources, or by a combination of these methods. Each LSE must certify the amount of Unforced Capacity it has or has obtained prior to the beginning of each Obligation Procurement Period by submitting completed Installed Capacity certification forms to the ISO by the date specified in the ISO Procedures. The Installed Capacity certification forms submitted by the LSEs shall be in the format and include all the information prescribed by the ISO Procedures.

All LSEs shall participate in the ICAP Spot Market Auction pursuant to Section 5.14.1 of this Tariff.

**5.11.3 Load-Shifting Adjustments**

The ISO shall account for Load-shifting among LSEs each month using the best available information provided to it and the affected LSEs by the individual Transmission Owners. The ISO shall, upon notice of Load-shifting by a Transmission Owner and verification by the relevant Load-losing LSE, increase the Load-gaining LSE's LSE Unforced Capacity Obligation, as applicable, and decrease the Load-losing LSE's LSE Unforced Capacity Obligation, as applicable, to reflect the Load-shifting.

The Load-gaining LSE shall pay the Load-losing LSE an amount, pro-rated on a daily basis, based on the Market-Clearing Price of Unforced Capacity determined in the most recent previous applicable ICAP Spot Market Auction until the first day of the month after the nearest following Monthly Installed Capacity Auction is held. The amount paid by a Load-gaining LSE shall reflect any portion of the Load-losing LSE's LSE Unforced Capacity Obligation that is attributable to the shifting Load for the applicable Obligation Procurement Period, in accordance with the ISO Procedures. In addition, the amount paid by a Load-gaining LSE shall be reduced by the Load-losing LSE's share of any rebate associated with the lost Load paid pursuant to Section 5.15 of this Tariff.

Each Transmission Owner shall report to the ISO and to each LSE serving Load in its Transmission District the updated, aggregated LSE Loads with documentation in accordance with and by the date set forth in the ISO Procedures. The ISO shall reallocate a portion of the NYCA Minimum Unforced Capacity Requirement and the Locational Minimum Unforced Capacity Requirement, as applicable, to each LSE for the following Obligation Procurement

Period, which shall reflect all documented Load-shifts as of the end of the current Obligation Procurement Period. Any disputes among Market Participants concerning Load-shifting shall be resolved through the Expedited Dispute Resolution Procedures set forth in Section 5.17 of this Tariff, or the Transmission Owner's retail access procedures, as applicable. In the event of a pending dispute concerning a Load-shift, the ISO shall make its Obligation Procurement Period Installed Capacity adjustments as if the Load-shift reported by the Transmission Owners had occurred, or if the dispute pertains to the timing of a Load-shift, as if the Load-shift occurred on the effective date reported by the Transmission Owner, but will retroactively modify these allocations, as necessary, based on determinations made pursuant to the Expedited Dispute Resolution Procedures set forth in Section 5.17 of this Tariff, or the Transmission Owner's retail access procedures, as applicable.

**5.11.4 LSE Locational Minimum Installed Capacity Requirements**

The ISO will determine the Locational Minimum Installed Capacity Requirements, stated as a percentage of the Locality's forecasted Capability Year peak Load and expressed in Unforced Capacity terms, that shall be uniformly applicable to each LSE serving Load within a Locality. In establishing Locational Minimum Installed Capacity Requirements, the ISO will take into account all relevant considerations, including the total NYCA Minimum Installed Capacity Requirement, the NYS Power System transmission Interface Transfer Capability, the election by the holder of rights to UDRs that can provide Capacity from an External Control Area with a capability year start date that is different than the corresponding ISO Capability Year start date ("dissimilar capability year"), the Reliability Rules and any other FERC-approved Locational Minimum Installed Capacity Requirements.

The ISO shall compute the Locational Minimum Installed Capacity Requirements in accordance with ISO Procedures:

(a) to minimize the total cost of capacity at the prescribed level of excess. For purposes of this computation, the ISO shall use the prescribed level of excess (as such term is defined in Section 5.14.1.2.2 of this Tariff,) and shall take into account the cost curves established with the results of net Energy and Ancillary Services revenue offset (as such term is defined in Section 5.14.1.2.2 of this Tariff,) that are (i) if for the first Capability Year covered by the applicable periodic review (as described in Section 5.14.1.2.2 of this Tariff,) the values utilized by the ISO in calculating the reference points for each ICAP Demand Curve as proposed by the ISO to be applicable for such first year in the ISO's filing referenced in Section 5.14.1.2.2.4.11 of this Tariff; and (ii) if for any subsequent Capability Year covered by such periodic review, the values utilized by the ISO in calculating the reference points for each ICAP Demand Curve for the respective Capability Year.

(b) to maintain the loss of load expectation of no more than 0.1 days per year; and

(c) so that the transmission security limits determined by the ISO in accordance with this paragraph and ISO Procedures, are respected. The ISO will determine these limits using inputs consistent with the NYSRC Installed Reserve Margin base case for the Capability Year to which the Locational Minimum Installed Capacity Requirements will apply. The ISO will compute such limits by determining the bulk power system transmission capability into the Locality, the MW of generation within the Locality accounting for capacity unavailability, the minimum MW of available capacity required for each Locality based on forecasted Load, and using the N-1-1 system planning criteria (*i.e.*, a sequence of a primary contingency event followed by a secondary contingency event) to analyze thermal limits affecting the Locality. The ISO will post on its web site a report of its determination.

In computing the Locational Minimum Installed Capacity Requirements, the ISO shall utilize results from probabilistic modeling of reliability simulations, recognizing system constraints.

The Installed Capacity Supplier holding rights to UDRs from an External Control Area with a dissimilar capability year shall have one opportunity for a Capability Year in which the Scheduled Line will first be used to offer Capacity associated with the UDRs, to elect that the ISO determine Locational Minimum Installed Capacity Requirements without a quantity of MW from the UDRs for the first month in the Capability Year, and with the same quantity of MW as Unforced Capacity for the remaining months, in each case (a) consistent with and as demonstrated by a contractual arrangement to utilize the UDRs to import the quantity of MW of Capacity into a Locality, and (b) in accordance with ISO Procedures (a "capability year adjustment election"). If there is more than one Installed Capacity Supplier holding rights to UDRs concurrently, an Installed Capacity Supplier's election pursuant to the preceding sentence (x) shall be binding on the entity to which the NYISO granted the UDRs up to the quantity of MW to which the Installed Capacity Supplier holds rights, and a subsequent assignment of these UDRs to another rights holder will not create the option for another one-time election by the new UDR rights holder, and (y) shall not affect the right another Installed Capacity Supplier may have to make an election. The right to make an election shall remain unless and until an election has been made by one or more holders of rights to the total quantity of MW corresponding to the

UDRs.  Absent this one-time election, the UDRs shall be modeled consistently for all months in each Capability Year as elected by the UDR rights holder in its notification to the ISO in accordance with ISO Procedures.  Upon such an election, the ISO shall determine the Locational Minimum Unforced Capacity Requirement (i) for the first month of the Capability Year without the quantity of MW of Capacity associated with the UDRs, and (ii) for the remaining eleven months as Unforced Capacity.  After the Installed Capacity Supplier has made its one-time election for a quantity of MW, the quantity of MW associated with the UDRs held by the Installed Capacity Supplier shall be modeled consistently for all months in any future Capability Period.

Notwithstanding anything to the contrary in the ISO Tariffs and ISO Procedures, the Locational Minimum Installed Capacity Requirements for the 2020/2021 Capability Year that were approved by the Operating Committee on January 16, 2020 shall not be modified based on the revised ICAP Demand Curves set forth in Section 5.14.1.2.2.5 of this Tariff that are applicable for all months covered by the 2020/2021 Winter Capability Period.

### 5.11.5 The Locational Minimum Unforced Capacity Requirement

The Locational Minimum Unforced Capacity Requirement represents a minimum level of Unforced Capacity that must be secured by LSEs in each Locality in which it has Load for each Obligation Procurement Period.  For each Capability Period prior to the Capability Period starting May 1, 2024 the Locational Minimum Unforced Capacity Requirement for each Locality shall equal the product of the Locational Minimum Installed Capacity Requirement for a given Locality ((A) with or without the UDRs if there is a capability year adjustment election by a rights holder and (B) without the Locality Exchange MW) and the ratio of (1) the total amount of Unforced Capacity that the specified Resources are qualified to provide (with or without the

UDRs associated with dissimilar capability periods, as so elected by the rights holder) during each month in the Capability Period, as of the time the Locational Minimum Unforced Capacity Requirement is determined as specified in ISO Procedures, to (2) the sum of the Adjusted Installed Capacity values used to determine the Unforced Capacities of such Resources for such Capability Period (with or without the DMNCs associated with the UDRs, as so elected by the rights holder). Starting with the Capability Period that begins on May 1, 2024 and for each subsequent Capability Period, the Locational Minimum Unforced Capacity Requirement for each Locality shall equal the product of the Locational Minimum Installed Capacity Requirement for a given Locality ((A) with or without the UDRs if there is a capability year adjustment election by a rights holder and (B) without the Locality Exchange MW) and the ratio of (1) the total amount of Unforced Capacity that the specified Resources are qualified to provide (with or without the UDRs associated with dissimilar capability periods, as so elected by the rights holder) during each month in the Capability Period, as of the time the Locational Minimum Unforced Capacity Requirement is determined as specified in ISO Procedures, to (2) the sum of the Installed Capacity values used to determine the Unforced Capacities of such Resources for such Capability Period (with or without the DMNCs associated with the UDRs, as so elected by the rights holder)..

The foregoing calculation shall be determined using the Resources in the given Locality in the most recent final version of the ISO's annual Load and Capacity Data Report, with the addition of Resources commencing commercial operation since completion of that report and the deletion of Resources with scheduled or planned retirement dates before or during such Capability Period.  The ISO will apply the Locality Exchange Factor for the applicable External Control Area to the MW of Locational Export Capacity that are the lesser of (i) the lesser of the

Generator's CRIS and its most recent DMNC, and (ii) the MW pursuant to the notice provided pursuant to Section 5.9.2.2.1 of this Services Tariff.

Under the provisions of this Services Tariff and the ISO Procedures, each LSE will be obligated to procure its LSE Unforced Capacity Obligation. The LSE Unforced Capacity Obligation will be determined for each Obligation Procurement Period by the ICAP Spot Market Auction, in accordance with the ISO Procedures.

Installed Capacity Suppliers will have the opportunity to supply amounts of Unforced Capacity to meet the LSE Unforced Capacity Obligation as established by the ICAP Spot Market Auction.

To be counted towards the locational component of the LSE Unforced Capacity Obligation, Unforced Capacity owned by the holder of UDRs or contractually combined with UDRs must be deliverable to the NYCA interface with the UDR transmission facility pursuant to NYISO requirements and consistent with the election of the holder of the rights to the UDRs set forth in this Section.

The ISO shall have the right to audit all executed Installed Capacity contracts and related documentation of arrangements by an LSE to use its own generation to meet its Locational Minimum Installed Capacity Requirement for an upcoming Obligation Procurement Period.

### 5.11.6 Determination of Locality Exchange Factor:

No later than January 31 each year, the ISO shall determine the Locality Exchange Factor for each Import Constrained Locality relative to each neighboring Control Area.

The ISO shall make each such determination by performing a power flow based analysis according to applicable transmission system planning practices for the determination of interface transfer limits used for the resource adequacy topology. Base case data from the most recent

Reliability Planning Process will be incorporated.  The Locality Exchange Factor is the ratio of the shift factor on the applicable NYCA interface of a transfer from the Import Constrained Locality to the respective neighboring Control Area, to the shift factor of a transfer from Rest of State to the Import Constrained Locality, calculated in accordance with ISO Procedures.  Only the AC circuits comprising the respective neighboring Control Area's interface with the NYCA will participate in the shift.  The ISO shall post its Locality Exchange Factors on its website prior to the opening of the Summer Capability Period Auction, and notify the New York State Reliability Council.

## 5.12 Requirements Applicable to Installed Capacity Suppliers

### 5.12.1 Installed Capacity Supplier Qualification Requirements

In order to qualify as an Installed Capacity Supplier or be part of an Aggregation that is qualified as an Installed Capacity Supplier, Generators, controllable transmission projects electrically located in the NYCA, transmission projects with associated incremental transfer capability, and Distributed Energy Resources that have the ability to inject Energy must have obtained Capacity Resource Interconnection Service ("CRIS") pursuant to the applicable provisions of Attachment S to the ISO OATT and have entered service: controllable transmission projects must also have obtained Unforced Capacity Deliverability Rights and transmission projects with associated incremental transfer capability must also have obtained External-to-ROS Deliverability Rights. Generators that are Co-located Storage Resources must each, independently, obtain CRIS in order to qualify as Installed Capacity Suppliers. Even if a Resource has otherwise satisfied the requirements to participate in the ISO's Installed Capacity market, a Resource in Inactive Reserves, an ICAP Ineligible Forced Outage, a Mothball Outage, or that is Retired is ineligible to participate in the ISO's Installed Capacity market. A Resource that elects to participate in the ICAP Market, and is within a defined electrical boundary, electrically interconnected with, and routinely serves a Host Load (which Host Load does not consist solely of Station Power) at a single PTID may only participate in the Installed Capacity market as a Behind-the-Meter Net Generation Resource. In order to participate as part of an Aggregation or as an Energy Storage Resource, such a resource may not participate with the Behind-The-Meter Net Generation configuration. Generators that are Co-located Storage Resources must each, independently, comply with all applicable market rules contained in this

Services Tariff Section 5.12 as an Energy Storage Resource or as an Intermittent Power Resource, as appropriate.

In addition, to qualify as an Installed Capacity Supplier in the NYCA, Energy Limited Resources, Generators, Installed Capacity Marketers, Intermittent Power Resources, Behind-the-Meter Net Generation Resources, Limited Control Run-of-River Hydro Resources and System Resources rated 1 MW or greater, other than External System Resources and Control Area System Resources which have agreed to certain Curtailment conditions as set forth in the third to last paragraph of Section 5.12.1 below, Responsible Interface Parties, existing municipally-owned generation, Energy Limited Resources, and Intermittent Power Resources, to the extent those entities are subject to the requirements of Section 5.12.11 of this Tariff, Aggregations with a capacity rating of 0.1 MW or greater, and Energy Storage Resources with a nameplate capacity rating that allows a minimum injection to the NYS Transmission System or distribution system of 0.1 MW or greater shall:

5.12.1.1 provide information reasonably requested by the ISO including the name and location of Resources, and System Resources;

5.12.1.2 in accordance with the ISO Procedures, perform DMNC or DMGC tests and submit the results to the ISO, or provide to the ISO appropriate historical production data;

5.12.1.3 abide by the ISO Generator maintenance coordination procedures;

5.12.1.4 provide the expected return date from any outages (including partial outages) to the ISO;

5.12.1.5 in accordance with the ISO Procedures, 5.12.1.5.1 provide documentation demonstrating that it will not use the same Unforced Capacity for more than one (1) buyer at the same time, and

5.12.1.5.2 in the event that the Installed Capacity Supplier supplies more Unforced Capacity than it is qualified to supply in any specific month (*i.e.*, is short on Capacity), documentation that it has procured sufficient Unforced Capacity to cover this shortfall.

5.12.1.6 except for Installed Capacity Marketers and Intermittent Power Resources that depend upon wind or solar as their fuel or Aggregations that are comprised of Intermittent Power Resources that depend on the same type of fuel, with that fuel being wind or solar, Bid into the Day-Ahead Market, unless the Energy Limited Resource, Generator, Aggregation, Limited Control Run-of-River Hydro Resource or System Resource is unable to do so due to an outage as defined in the ISO Procedures or due to temperature related de-ratings. Resources may also enter into the MIS an upper operating limit that would define the operating limit under normal system conditions. The circumstances under which the ISO will direct a Resource to exceed its upper operating limit are described in the ISO Procedures;

5.12.1.6.1 Co-located Storage Resources must each submit a CSR injection Scheduling Limit and a CSR withdrawal Scheduling Limit for each hour of the Day-Ahead Market consistent with Section 5.12.7.1 below;

5.12.1.7 provide Operating Data in accordance with Section 5.12.5 of this Tariff;

5.12.1.8 provide notice to the ISO of any proposed transfers of deliverability rights to be carried out pursuant to Sections 25.9.4 - 25.9.6 of Attachment S to the ISO

OATT, on the Class Year Start Date if a request to transfer CRIS at a different location, and upon the submission of the request if it is a request to transfer CRIS at the same location.

5.12.1.9 comply with the ISO Procedures;

5.12.1.10 when the ISO issues a Supplemental Resource Evaluation request (an SRE), NYCA Resources must Bid into the in-day market unless (and only to the extent) the entity has a bid pending in the Real-Time Market when the SRE request is made or is unable to bid in response to the SRE request due to an outage as defined in the ISO Procedures, or due to other operational issues, or due to temperature related deratings.

If an External Installed Capacity Supplier is a Generator, or if an External Generator is associated with an Unforced Capacity sale using UDRs or EDRs, then except to the extent such a Generator is unable to Bid in response to the SRE request due to an outage as defined in the ISO Procedures, due to physical operating limitations affecting the Generator, or due to other operational issues that are outside the Installed Capacity Supplier's control, as determined by the ISO, it must take all of the following actions for each hour of an SRE request (a) Bid an Import to the NYCA in a MW quantity equal to the lesser of (i) the ICAP equivalent of the UCAP sold, or (ii) the maximum MW the Generator is able to produce, at the approved Proxy Generator Bus, at the applicable minimum Bid Price, and (b) ensure that the External Generator is operating and is available to provide all of the MW that were Bid to be imported into the NYCA, up to the ICAP equivalent of the UCAP sold, for the entire duration of the SRE request, and (c) obtain all reservations and transmission service necessary to deliver all of the MW that were Bid to be imported into the NYCA or to a Locality from the Generator, up to the ICAP equivalent of the UCAP sold from the External Generator, at the approved Proxy Generator Bus.

If the External Installed Capacity Supplier that is a Generator, or the External Generator associated with an Unforced Capacity sale using UDRs or EDRs, is not able to Import the quantity of Energy equal to the ICAP equivalent of the UCAP sold from the Generator or EDR to the NYCA, or if a UDR to the Locality, for every hour of an SRE request then, except to the extent already addressed by a declared outage, the Generator shall provide to the ISO an explanation of the reasons for its failure or inability to perform, including evidence demonstrating any physical operating limitations or other operational issues that prevented the Generator from Importing the quantity of Energy equal to the ICAP equivalent of the UCAP sold from the Generator to the NYCA. To the extent the ISO determines that the information and supporting evidence provided demonstrates that the failure or inability to deliver occurred for reasons outside the control of the External Installed Capacity Supplier or the External Generator associated with an Unforced Capacity sale using UDRs or EDRs, then the deficiency charge set forth in Section 5.12.12.2 below that applies solely to violations of this Section 5.12.1.10, shall not be assessed.

If an External Installed Capacity Supplier is a Control Area System Resource then, except to the extent it is unable to Bid in response to the SRE request due to an outage as defined in the ISO Procedures or due to operational issues that are outside the Installed Capacity Supplier's control, it must take all of the following actions for each hour of an SRE request (x) Bid an Import in a MW quantity equal to the ICAP equivalent of the UCAP sold, at the approved Proxy Generator Bus, at the applicable minimum Bid Price, and (y) obtain all reservations and transmission service necessary to deliver the ICAP equivalent of the UCAP sold from the Control Area System Resource to the NYCA at the approved Proxy Generator Bus.

If the External Installed Capacity Supplier that is a Control Area System Resource is not able to Import the quantity of Energy equal to the ICAP equivalent of the UCAP sold from the Control Area System Resource to the NYCA for every hour of an SRE request then, except to the extent already addressed by a declared outage, the External Installed Capacity Supplier shall provide to the ISO an explanation of the reasons for its failure or inability to perform, including evidence demonstrating any operational issues that prevented the External ICAP Supplier from Importing the quantity of Energy equal to the ICAP equivalent of the UCAP sold from the Control Area System Resource to the NYCA.  To the extent the ISO determines that the information and supporting evidence provided demonstrates that the failure or inability to deliver occurred for reasons outside the External Installed Capacity Supplier's control, then the deficiency charge set forth in Section 5.12.12.2 below that applies solely to violations of this Section 5.12.1.10, shall not be assessed.  A Control Area System Resource must demonstrate that transmission outage(s) prevented delivery of all available Resources in order for the ISO to determine that the Control Area

System Resource's failure to Import the quantity of Energy equal to the ICAP equivalent of the UCAP sold occurred for a reason that was outside the External Installed Capacity Supplier's control.

When an External Installed Capacity Supplier that is responding to an ISO SRE request Bids its Import at a Non-Competitive Proxy Generator Bus, its obligation to Bid an Import at the applicable minimum Bid Price includes the obligation to ensure that neither the External Installed Capacity Supplier nor any of its Affiliates are offering other Imports at an equivalent or greater economic priority at the Non-Competitive Proxy Generator Bus.

5.12.1.11 Installed Capacity Suppliers located East of Central-East shall Bid in the Day-Ahead and Real-Time Markets all Capacity available for supplying 10-Minute Non-Synchronized Reserve (unless the Generator or Aggregation is unable to meet its commitment because of an outage as defined in the ISO Procedures), except for the Resources described in Subsections 5.12.1.11.1, 5.12.1.11.2 and 5.12.1.11.3 below;

5.12.1.11.1 Generators providing Energy under contracts executed and effective on or before November 18, 1999 (including PURPA contracts) in which the power purchasers do not control the operation of the supply source but would be responsible for penalties for being off-schedule, with the exception of Generators under must-take PURPA contracts executed and effective on or before November 18, 1999, who have not provided telemetering to their local TO and historically have not been eligible to participate in the NYPP market, which will continue to be treated as TO Load modifiers under the ISO-administered markets;

5.12.1.11.2 Existing topping turbine Generators and extraction turbine Generators producing Energy resulting from the supply of steam to the district steam system located in New York City (LBMP Zone J) in operation on or before November 18, 1999 and/or Generators used in replacing or repowering steam supplies from such units (in accordance with good engineering and economic design) that cannot follow schedules, up to a maximum total of 533 MW of such units; and

5.12.1.11.3 Resources that have demonstrated to the ISO that they are subject to environmental, contractual or other legal or physical requirements that would otherwise preclude them from providing 10-Minute NSR.

5.12.1.12 A Resource that was determined by the ISO to be qualified as a Behind-the-Meter Net Generation Resource and for which Net Unforced Capacity was calculated by the ISO for a Capability Year can annually, by written notice received by the NYISO prior to August 1, elect not to participate in the ISO Administered Markets as a Behind-the-Meter Net Generation Resource. Such notice shall be in accordance with ISO Procedures. A Resource that makes such an election cannot participate as a Behind-the-Meter Net Generation Resource for the entire Capability Year for which it made the election, but can, however, prior to August 1 of any subsequent Capability Year, provide all required information in order to seek to re-qualify as a Behind-the-Meter Net Generation Resource.

5.12.1.13 An Energy Storage Resource, or Aggregation comprised entirely of Energy Storage Resources, may de-rate its maximum capability in order to meet the applicable Services Tariff Section 5.12.14 run-time requirement. ESRs electing to de-rate their maximum capability shall perform a DMNC test at an output level consistent with its de-rated capability in accordance with Services Tariff Section 5.12.14 and ISO Procedures (*see*, Installed Capacity Manual § 4).

5.12.1.14 Energy Limited Resources, Energy Storage Resources, Aggregations comprised entirely of Energy Storage Resources, DER Aggregations, and Aggregations that are Energy Limited Resources must elect an Energy Duration Limitation that corresponds to a Duration Adjustment Factor, as described in Section 5.12.14 below, and validate the Energy Duration Limitation pursuant to Section 5.12.1.2 above. An Installed Capacity Supplier may elect any Energy Duration Limitation that it can demonstrate pursuant to Section 5.12.1.2.

The ISO shall inform each potential Installed Capacity Supplier that the ISO must receive and approve DMNC or DMGC data, as applicable of its approved DMNC or DMGC ratings for the Summer Capability Period and the Winter Capability Period in accordance with the ISO Procedures.

Requirements to qualify as Installed Capacity Suppliers for External System Resources and Control Area System Resources located in External Control Areas that have agreed not to Curtail the Energy associated with such Installed Capacity or to afford it the same Curtailment priority that it affords its own Control Area Load shall be established in the ISO Procedures.

External Installed Capacity not associated with UDRs, including capacity associated with External CRIS Rights, EDRs, Grandfathered External Installed Capacity Agreements listed in Attachment E of the ISO Installed Capacity Manual, the Existing Transmission Capacity for Native Load listed for New York State Electric & Gas Corporation in Table 3 of Attachment L to the ISO OATT, Import Rights, and External System Resources, is only qualified to satisfy a

NYCA Minimum Unforced Capacity Requirement and is not eligible to satisfy a Locational Minimum Installed Capacity Requirement.

Not later than 30 days prior to each ICAP Spot Market Auction, each Market Participant that may make offers to sell Unforced Capacity in such auction shall submit information to the ISO, in accordance with ISO Procedures and in the format specified by the ISO that identifies each Affiliated Entity, as that term is defined in Section 23.2.1 of Attachment H of the Services Tariff, of the Market Party or with which the Market Party is an Affiliated Entity. The names of entities that are Affiliated Entities shall not be treated as Confidential Information, but such treatment may be requested for the existence of an Affiliated Entity relationship. The information submitted to the ISO shall identify the nature of the Affiliated Entity relationship by the applicable category specified in the definition of "Affiliated Entity" in Section 23.2.1 of Attachment H of the Services Tariff.

### 5.12.2 Additional Provisions Applicable to External Installed Capacity Suppliers

Terms in this Section 5.12.2 not defined in the Services Tariff have the meaning set forth in the OATT.

#### 5.12.2.1 Provisions Addressing the Applicable External Control Area

External Generators, External System Resources, and Control Area System Resources qualify as Installed Capacity Suppliers if they demonstrate to the satisfaction of the NYISO that the Installed Capacity Equivalent of their Unforced Capacity is deliverable to the NYCA; in the case of an entity using a UDR to meet a Locational Minimum Installed Capacity Requirement, to the NYCA interface associated with that UDR transmission facility and will not be recalled or curtailed by an External Control Area to satisfy its own Control Area Loads; in the case of an EDR, to the NYCA interface over which it creates increased transfer capability; and in the case of Control Area System Resources, if they demonstrate that the External Control Area will afford the NYCA Load the same curtailment priority that they afford their own Control Area Native Load Customers. The amount of Unforced Capacity that may be supplied by such entities qualifying pursuant to the alternative criteria may be reduced by the ISO, pursuant to ISO Procedures, to reflect the possibility of curtailment. External Installed Capacity associated with Import Rights, EDRs or UDRs is subject to the same deliverability requirements applied to Internal Installed Capacity Suppliers associated with UDRs.

#### 5.12.2.2 Additional Provisions Addressing Internal Deliverability and Import Rights

In addition to the provisions contained in Section 5.12.2.1 above, External Installed Capacity not associated with UDRs, EDRs, or External CRIS Rights will be subject to the deliverability test in Section 25.7.8 and 25.7.9 of Attachment S to the ISO OATT. The deliverability of External Installed Capacity not associated with UDRs, EDRs, or External CRIS Rights will be evaluated annually as a part of the process that sets import rights for the upcoming Capability Year, to determine the amount of External Installed Capacity that can be imported to the New York Control Area across any individual External Interface and across all of those External Interfaces, taken together. The External Installed Capacity deliverability test will be performed using the ISO's forecast, for the upcoming Capability Year, of New York Control Area CRIS resources, transmission facilities, and load. Under this process (i) Grandfathered External Installed Capacity Agreements listed in Attachment E of the ISO Installed Capacity Manual, and (ii) the Existing Transmission Capacity for Native Load listed for New York State Electric & Gas Corporation in Table 3 of Attachment L to the ISO OATT, will be considered deliverable within the Rest of State. Additionally, 1090 MW of imports made over the Quebec (via Chateauguay) Interface will be considered to be deliverable until the end of the 2010 Summer Capability Period.

The import limit set for External Installed Capacity not associated with UDRs, EDRs or External CRIS Rights will be set no higher than the amount of imports deliverable into Rest of State that (i) would not increase the LOLE as determined in the upcoming Capability Year IRM consistent with Section 2.7 of the NYISO Installed Capacity Manual, “Limitations on Unforced Capacity Flow in External Control Areas,” (ii) are deliverable within the Rest of State Capacity Region when evaluated with the New York Control Area CRIS resources (including EDRs and UDRs) and External CRIS Rights forecast for the upcoming Capability Year, and (iii) would not degrade the transfer capability of any Other Interface by more than the threshold identified in Section 25.7.9 of Attachment S to the ISO OATT. Import limits set for External Installed Capacity will reflect the modeling of awarded External CRIS rights, but the awarded External CRIS rights will not be adjusted as part of import limit-setting process. Procedures for qualifying selling, and delivery of External Installed Capacity are detailed in the Installed Capacity Manual.

Until the grandfathered import rights over the Quebec (via Chateauguay) Interface expire at the end of the 2010 Summer Capability Period, the 1090 MW of grandfathered import rights will be made available on a first-come, first-served basis pursuant to ISO Procedures. Any of the grandfathered import rights over the Quebec (via Chateauguay) Interface not utilized for a Capability Period will be made available to other external resources for that Capability Period, pursuant to ISO Procedures, to the extent the unutilized amount is determined to be deliverable.

Additionally, any of the Existing Transmission Capacity for Native Load listed for New York State Electric & Gas Corporation not utilized by New York State Electric & Gas

Corporation for a Capability Period will be made available to other external resources for that Capability Period, pursuant to ISO procedures, to the extent the unutilized amount is determined to be deliverable within the Rest of State Capacity Region.

LSEs with External Installed Capacity as of the effective date of this Tariff will be entitled to designate External Installed Capacity at the same NYCA Interface with another Control Area, in the same amounts in effect on the effective date of this Tariff. To the extent such External Installed Capacity corresponds to Existing Transmission Capacity for Native Load as reflected in Table 3 of Attachment L to the ISO OATT, these External Installed Capacity rights will continue without term and shall be allocated to the LSE's retail access customers in accordance with the LSE's retail access program on file with the PSC and subject to any necessary filings with the Commission. External Installed Capacity rights existing as of September 17, 1999 that do not correspond to Table 3 of Attachment L to the ISO OATT shall survive for the term of the relevant External Installed Capacity contract or until the relevant External Generator is retired.

#### 5.12.2.3 One-Time Conversion of Grandfathered Quebec (via Chateauguay) Interface Rights.

An entity can request to convert a specified number of MW, up to 1090 MW over the Quebec External Interface (via Chateauguay), into External CRIS Rights by making either a Contract Commitment or Non-Contract Commitment that satisfies the requirements of Section 25.7.11.1 of Attachment S to the ISO OATT. The converted number of MW will not be subject to further evaluation for deliverability within a Class Year Deliverability Study under Attachment S to the ISO OATT, as long as the External CRIS Rights are in effect.

5.12.2.3.1 The External CRIS Rights awarded under this conversion process will first become effective for the 2010-2011 Winter Capability Period.

5.12.2.3.2 Requests to convert these grandfathered rights must be received by the NYISO on or before 5:00 pm Eastern Time on February 1, 2010, with the following information: (a) a statement that the entity is electing to convert by satisfying the requirements of a Contract Commitment or a Non-Contract Commitment in accordance with Section 25.7.11.1 of Attachment S to the ISO OATT; (b) the length of the commitment in years; (c) for the Summer Capability Period, the requested number of MW; (d) for the Winter Capability Period, the Specified Winter Months, if any, and the requested number of MW; and (e) a minimum number of MW the entity will accept if granted ("Specified Minimum") for the Summer Capability Period and for all Specified Winter Months, if any.

5.12.2.3.3 An entity cannot submit one or more requests to convert in the aggregate more than 1090 MW in any single month.

5.12.2.3.4 If requests to convert that satisfy all other requirements stated herein are equal to or less than the 1090 MW limit, all requesting entities will be awarded the requested number of MW of External CRIS Rights. If conversion requests exceed the 1090 MW limit, the NYISO will prorate the allocation based on the weighted average of the requested MW times the length of the contract/commitment (*i.e.*, number of Summer Capability Periods) in accordance with the following formula:

$$Rights\ allocated\ to\ entity\ i = 1090 * (MW_i * contract/commitment\ length_i) / \sum_j \left(MW_j * contract/commitment\ length_j\right)$$

j = l,…# entities requesting import rights

In the formula, contract/commitment length means the lesser of the requested contract/commitment length and twenty (20) years. The NYISO will perform separate calculations for the Summer and Winter Capability Periods. The NYISO will determine whether the prorated allocated number of MW for any requesting entity is less than the entity's Specified Minimum. If any allocation is less, the NYISO will remove such request(s) and recalculate the prorated allocations among the remaining requesting entities using the above formula. This process will continue until the prorated allocation meets or exceeds the specified minimum for all remaining requests.

5.12.2.3.5 Any portion of the previously grandfathered 1090 MW not converted through this process will no longer be grandfathered from deliverability. Previously grandfathered rights converted to External CRIS Rights but then terminated will no longer be grandfathered from deliverability.

**5.12.2.4 Offer Cap Applicable to Certain External CRIS Rights**

Notwithstanding any other capacity mitigation measures or obligations that may apply, the offers of External Installed Capacity submitted pursuant to a Non-Contract Commitment, as described in Section 25.7.11.1.2 of Attachment S of the ISO OATT, will be subject to an offer cap in each month of the Summer Capability Period and for all Specified Winter Months. This offer cap will be determined as the higher of:

5.12.2.4.1 1.1 times the price corresponding to all available Unforced Capacity determined from the NYCA ICAP Demand Curve for that Period; and

5.12.2.4.2 The most recent auction clearing price (a) in the External market supplying the External Installed Capacity, if any, and if none, then the most recent auction clearing price in an External market to which the capacity may be wheeled, less (b) any transmission reservation costs in the External market associated with providing the Installed Capacity, in accordance with ISO Procedures.

### 5.12.3 Installed Capacity Supplier Outage Scheduling Requirements

All Installed Capacity Suppliers, except for Control Area System Resources and Responsible Interface Parties, that intend to supply Unforced Capacity to the NYCA shall submit a confidential notification to the ISO of their proposed outage schedules in accordance with the ISO Procedures. Transmission Owners will be notified of these and subsequently revised outage schedules. Based upon a reliability assessment, if Operating Reserve deficiencies are projected to occur in certain weeks for the upcoming calendar year, the ISO will request voluntary rescheduling of outages. In the case of Installed Capacity Suppliers actually supplying Unforced Capacity to the NYCA, if voluntary rescheduling is ineffective, the ISO will invoke forced rescheduling of their outages to ensure that projected Operating Reserves over the upcoming year are adequate.

An Installed Capacity Supplier that refuses a forced rescheduling of its outages for any unit shall be prevented from supplying Unforced Capacity in the NYCA with that unit during any month where it undertakes such outages. The rescheduling process is described in the ISO Procedures.

An Installed Capacity Supplier that intends to supply Unforced Capacity in a given month that did not qualify as an Installed Capacity Supplier prior to the beginning of the Capability Period must notify the ISO in accordance with the ISO Procedures so that it may be subject to forced rescheduling of its proposed outages in order to qualify as an Installed Capacity

Supplier. A Resource that refuses the ISO's forced rescheduling of its proposed outages shall not qualify as an Installed Capacity Supplier for that unit for any month during which it schedules or conducts an outage.

Outage schedules for External System Resources and Control Area System Resources shall be coordinated by the External Control Area and the ISO in accordance with the ISO Procedures.

### 5.12.4 Required Certification for Installed Capacity

(a) Each Installed Capacity Supplier must confirm to the ISO, in accordance with ISO Procedures that the Unforced Capacity it has certified has not been sold for use in an External Control Area.

(b) Each Installed Capacity Supplier holding rights to UDRs or EDRs from an External Control Area must confirm to the ISO, in accordance with ISO Procedures, that it will not use as self-supply or offer, and has not sold, Installed Capacity associated with the quantity of MW for which it has not made its one time capability adjustment year election pursuant to Section 5.11.4 (if applicable.)

(c) On and after the execution of an RMR Agreement, and for the duration of its term, an RMR Generator shall not enter into any new agreement or extend any other agreement that impairs or otherwise diminishes its ability to comply with its obligation under an RMR Agreement, or that limits its ability to provide Energy, Capacity, or Ancillary Services directly to the ISO Administered Markets. An Interim Service Provider that is required to keep its generating unit(s) in service shall not enter into any new agreement or extend any other agreement that limits its ability to provide Energy, Capacity, or Ancillary Services directly to the ISO

Administered Markets or otherwise meet its obligations as an Interim Service Provider.

### 5.12.5 Operating Data Reporting Requirements

To qualify as Installed Capacity Suppliers in the NYCA, Resources shall submit to the ISO Operating Data in accordance with this Section 5.12.5 and the ISO Procedures. Resources that do not submit Operating Data in accordance with the following subsections and the ISO Procedures may be subject to the sanctions provided in Section 5.12.12.1 of this Tariff.

Resources that were not in operation on January 1, 2000 shall submit Operating Data to the ISO no later than one month after such Resources commence commercial operation, and in accordance with the ISO Procedures and the following subsections as applicable.

#### 5.12.5.1 Generators, System Resources, Energy Limited Resources, Energy Storage Resources, Responsible Interface Parties, Intermittent Power Resources, Limited Control Run-of-River Hydro Resources, Municipally Owned Generation, and Distributed Energy Resources

To qualify as Installed Capacity Suppliers in the NYCA, Generators, External Generators, System Resources, External System Resources, Energy Limited Resources, Responsible Interface Parties, Intermittent Power Resources, Limited Control Run-of-River Hydro Resources, Energy Storage Resources, and municipally owned generation and Distributed Energy Resources or the purchasers of Unforced Capacity associated with those Resources shall submit GADS Data, data equivalent to GADS Data, and/or other Operating Data to the ISO in accordance with the ISO Procedures. Prior to the successful implementation of a software modification that allows gas turbines to submit multiple bid points, these units shall not be considered to be forced out for any hours that the unit was available at its base load capability in accordance with the ISO Procedures. This section shall also apply to any Installed Capacity

Supplier, External or Internal, using UDRs to meet Locational Minimum Installed Capacity Requirements.

**5.12.5.2 Control Area System Resources**

To qualify as Installed Capacity Suppliers in the NYCA, Control Area System Resources, or the purchasers of Unforced Capacity associated with those Resources, shall submit CARL Data and actual system failure occurrences data to the ISO each month in accordance with the ISO Procedures.

**5.12.5.3 Transmission Projects Granted Unforced Capacity Deliverability Rights**

An owner of a transmission project that receives UDRs must, among other obligations, submit outage data or other operational information in accordance with the ISO procedures to allow the ISO to determine the number of UDRs associated with the transmission facility.

**5.12.5.4 Transmission Projects Granted External-to ROS Deliverability Rights**

An owner of a transmission project that receives EDRs must, among other obligations, submit outage data or other operational information when determined applicable by the ISO and in accordance with ISO Procedures.

**5.12.5.5 Co-located Storage Resources**

Generators that are Co-located Storage Resources must each, individually, comply with the requirements of Section 5.12.5.1 of this Services Tariff.  Generators that are Co-located Storage Resources must submit outage data or other operational information in accordance with ISO Procedures that will allow the ISO to validate the CSR Scheduling Limits associated with the Co-located Storage Resources.  CSR Scheduling Limits will be incorporated into each CSR Generator's UCAP calculation (*see* Services Tariff Section 5.12.6.2).

## 5.12.6 Capacity Calculations, Operating Data Default, Value and Collection

### 5.12.6.1 ICAP Calculation for Behind-the-Meter Net Generation Resources

The ISO shall calculate the amount of Net-ICAP for each Behind-the-Meter Net Generation Resource as the Adjusted DMGC of the Generator of the Behind-the-Meter Net Generation Resource minus the Resource's Adjusted Host Load in accordance with this Tariff and ISO Procedures.

#### 5.12.6.1.1 Adjusted DMGC

The ISO's calculation of the Adjusted DMGC of a Behind-the-Meter Net Generation Resource shall be the least of: (i) its DMGC for the Capability Period; (ii) its Adjusted Host Load plus its applicable Injection Limit; and (iii) its Adjusted Host Load plus the number of MW of CRIS it has obtained, as determined in accordance with OATT Section 25 (OATT Attachment S) and ISO Procedures.

If the Station Power of a Behind-the-Meter Net Generation Resource is separately metered from all other Load of the Resource, such that the Station Power Load can be independently measured and verified, the Generator of a Behind-the-Meter Net Generation Resource may elect to perform a DMNC Test instead of a DMGC Test pursuant to ISO Procedures. Such election must be made in writing to the ISO prior to the start of the DMNC Test Period.

If a Behind-the-Meter Net Generation Resource elects to take a DMNC Test, the Station Power measured during such DMNC Test shall not be included in the Resource's Host Load. A Behind-the-Meter Net Generation Resource's DMNC value for the Capability Period shall be used in lieu of a DMGC value in the calculation of the Resource's Adjusted DMGC for the purposes of Sections 5.12.6.1 and 5.12.6.2 of this Services Tariff.

### 5.12.6.1.2 Adjusted Host Load

A Behind-the-Meter Net Generation Resource's Adjusted Host Load shall be equal to the product of the Average Coincident Host Load multiplied by one plus the Installed Reserve Margin.

The Adjusted Host Load shall be calculated by the ISO on an annual basis prior to the start of the Summer Capability Period and in accordance with ISO Procedures, based upon the Behind-the-Meter Net Generation Resource's Average Coincident Host Load for the prior Summer Capability Period and the Winter Capability Period before that.

#### 5.12.6.1.2.1 Average Coincident Host Load

The ISO must receive the Behind-the-Meter Net Generation Resource's applicable metered Load data required to calculate an Average Coincident Host Load in accordance with ISO Procedures. The ISO shall compute the Average Coincident Host Load for each Capability Year (i) using the metered Host Load data for the applicable NYCA peak Load hours, except as provided below in this Section, and (ii) adjusted for weather normalization and Load growth as determined by the ISO in relation to developing the NYCA Minimum Installed Capacity Requirement in accordance with ISO Procedures.

For each Capability Year, the NYISO shall use the average of the highest twenty (20) one-hour peak Loads of the Host Load of the Behind-the-Meter Net Generation Resource that occur during the top forty (40) NYCA peak Load hours of the prior Summer Capability Period and the Winter Capability Period before that to calculate the Average Coincident Host Load.

If a facility meets the criteria to be, and has not previously been, a Behind-the-Meter Net Generation Resource, but does not have all of the appropriate meter data, its Average Coincident Host Load shall be a value forecasted by the Behind-the-Meter Net Generation Resource. The

Behind-the-Meter Net Generation Resource's forecast shall be based on actual meter data, or if not available, billing data or other business data of the Host Load. An estimated Average Coincident Host Load can only be applicable to a Behind-the-Meter Net Generation Resource until actual data becomes available, but in any event no longer than three (3) consecutive Capability Years beginning with the Capability Year it is first an Installed Capacity Supplier.

**5.12.6.1.2.2 Determination of Adjusted Host Load**

After the ISO has calculated a Behind-the-Meter Net Generation Resource's Average Coincident Host Load, it shall then apply the NYCA Installed Reserve Margin. The Behind-the-Meter Net Generation Resource's Adjusted Host Load will be established by multiplying the Resource's Average Coincident Host Load for the Capability Year by the quantity of one plus the NYCA Installed Reserve Margin.

**5.12.6.2 UCAP Calculations**

The ISO shall calculate for each Resource the amount of Unforced Capacity that each Installed Capacity Supplier is qualified to supply in the NYCA in accordance with formulae provided in the ISO Procedures. A Resource's Unforced Capacity will be the applicable Adjusted Installed Capacity multiplied by the quantity of 1 minus the Resource's derating factor.

The amount of Unforced Capacity that each Generator, except for the Generator of a Behind-the-Meter Net Generation Resource, System Resource, Energy Limited Resource, Special Case Resource, and municipally-owned generation is authorized to supply in the NYCA shall be based on the ISO's calculations of individual Equivalent Demand Forced Outage Rates. The amount of Unforced Capacity that each Energy Storage Resource, Aggregation that is comprised entirely of Energy Storage Resources, and DER Aggregation is authorized to supply in the NYCA shall be based on the individual availability of the Energy Storage Resource or the availability of the Aggregation in the Real-Time Market and calculated by the ISO in accordance with ISO Procedures.  Except as provided in Section 5.12.6.2.1 of this Services Tariff, this calculation shall not include hours in any month that the Energy Storage Resource or Aggregation was in an outage state that started on or after May 1, 2015 and that precluded its eligibility to participate in the Installed Capacity market.  The amount of Unforced Capacity that an Energy Storage Resource that is participating as a part of a Co-located Storage Resource is authorized to supply in the NYCA shall account for reductions to the CSR Scheduling Limits, or the unavailability of the associated facilities, in accordance with ISO Procedures.

The amount of Unforced Capacity that each Control Area System Resource is authorized to supply in the NYCA shall be based on the ISO's calculation of each Control Area System Resource's availability.  The amount of Unforced Capacity that each Intermittent Power Resource or Aggregation that is entirely comprised of Intermittent Power Resources that depend on the same type of fuel is authorized to supply in the NYCA shall be based on the ISO's calculation of the amount of capacity that the Intermittent Power Resource or an Aggregation that is entirely comprised of Intermittent Power Resources that depend on the same type of fuel can reliably provide during system peak Load hours in accordance with ISO Procedures.

Starting with the Capability Year beginning May 1, 2021 and continuing until the Capability Year that begins in May 2024, this calculation will be weighted according to the respective Peak Load Window weighting factors provided in the table below.  Separate Summer and Winter Peak Load Windows are applicable based on the penetration of duration limited resources in Section 5.12.14.

| | Summer Peak Load Window | | Winter Peak Load Window | |
|---|---|---|---|---|
| Hour Beginning | 6 Hour | 8 Hour | 6 Hour | 8 Hour |

| | | | | |
|---|---|---|---|---|
| 12 | | 5.00% | | |
| 13 | 12.50% | 10.00% | | |
| 14 | 18.75% | 17.50% | | 5.00% |
| 15 | 18.75% | 17.50% | | 5.00% |
| 16 | 18.75% | 17.50% | 18.75% | 17.50% |
| 17 | 18.75% | 17.50% | 18.75% | 17.50% |
| 18 | 12.50% | 10.00% | 18.75% | 17.50% |
| 19 | | 5.00% | 18.75% | 17.50% |
| 20 | | | 12.50% | 10.00% |
| 21 | | | 12.50% | 10.00% |

Except as provided in Section 5.12.6.2.1 of this Services Tariff, this calculation shall not include hours in any month that the Intermittent Power Resource or an Aggregation that is entirely comprised of Intermittent Power Resources that depend on the same type of fuel was in an outage state that started on or after May 1, 2015 and that precluded its eligibility to participate in the Installed Capacity market.

The amount of Unforced Capacity that an Intermittent Power Resource that is participating as part of a Co-located Storage Resource is authorized to supply in the NYCA shall account for reductions to the CSR Scheduling Limits, or the unavailability of the associated facilities, in accordance with ISO Procedures.

Until the Capability Year that begins in May 2024, the amount of Unforced Capacity that each Limited Control Run-of-River Hydro Resource is authorized to provide in the NYCA shall be determined separately for Summer and Winter Capability Periods as the rolling average of the hourly net Energy provided by each such Resource during the 20 highest NYCA integrated real-time load hours in each of the five previous Summer or Winter Capability Periods, as appropriate, stated in megawatts.  Except as provided in Section 5.12.6.2.1 of this Services Tariff, for a Limited Control Run-of-River Hydro Resource in an outage state that started on or after May 1, 2015 and that precluded its eligibility to participate in the Installed Capacity market during one of the 20 highest NYCA integrated real-time load hours in any one of the five previous Summer or Winter Capability Periods, the ISO shall replace that Winter or Summer Capability Period, as appropriate, with the next most recent Winter or Summer Capability Period such that the rolling average of the hourly net Energy provided by each such Resource shall be calculated from the 20 highest NYCA integrated real-time load hours in the five most recent prior Summer or Winter Capability Periods in which the Resource was not in an outage state that precluded its eligibility to participate in the Installed Capacity market on one of the 20 highest NYCA integrated real-time load hours in that Capability Period.

Prior to Capability Year beginning May 1, 2021, the ISO shall calculate separate Summer and Winter Capability Period Unforced Capacity values for each Generator, System Resource, Special Case Resource, Energy Limited Resource, and municipally owned generation and update them periodically using a twelve-month calculation.  Starting with the Capability Year beginning May 1, 2021, the ISO shall calculate separate Summer and Winter Capability Period Unforced Capacity values for each Special Case Resource and update them periodically using a twelve-month calculation in accordance with ISO Procedures.  Starting with the Capability Year beginning May 1, 2021, the calculation for each Generator, System Resource, Energy Limited Resource, and municipally owned generation will use the months comprising the two most recent like Capability Periods in accordance with formulae provided in the ISO Procedures; provided, however, except as provided in Section 5.12.6.2.1 of this Services Tariff, for a Generator in an outage state that started on or after May 1, 2015 and that precluded its eligibility to participate in the Installed Capacity market at any time during any month from which GADS or other operating data would otherwise be used to calculate an individual Equivalent Demand Forced Outage Rate, the ISO shall replace such month’s GADS or other operating data with GADS or other operating data from the most recent like month in which the Generator was not in an outage state that precluded its eligibility to participate in the Installed Capacity market.

The ISO shall calculate separate Summer and Winter Capability Period Unforced Capacity values for Energy Storage Resources and individual Distributed Energy Resources and update them seasonally as described in ISO Procedures.

The ISO shall calculate separate Summer and Winter Capability Period Unforced Capacity values for Intermittent Power Resources and update them seasonally as described in ISO Procedures.

The amount of Unforced Capacity that each Behind-the-Meter Net Generation Resource is authorized to supply in the NYCA shall be its Net-UCAP. Net-UCAP is the lesser of (i) the ISO's calculation of the Generator of the Behind-the-Meter Net Generation Resource Adjusted DMGC multiplied by one minus its Equivalent Demand Forced Outage Rate, and then decreased by its Adjusted Host Load translated into Unforced Capacity terms consistent with Section 5.11.1 of this Tariff, and (ii) the Resource's Net-ICAP.

**5.12.6.2.1 Exceptions**

A Resource returning to the Energy market after taking an outage that precluded its participation in the Installed Capacity market and which returns with modifications to its operating characteristics determined by the ISO to be material and which, therefore, requires the submission of a new Interconnection Request will receive, as the initial derating factor for calculation of the Resource's Unforced Capacity upon its return to service, the derating factor it would have received as a newly connecting unit in lieu of a derating factor developed from unit-specific data. A Resource returning to the Energy market after taking an outage that precluded its participation in the Installed Capacity market and which, upon its return, uses as its primary fuel a fuel not previously used at the facility for any purpose other than for ignition purposes will receive, as the initial derating factor for calculation of the Resource's Unforced Capacity upon its return to service, the default derating factor in lieu of a derating factor developed from unit-specific data even if the modifications to allow use of a new primary fuel are not material and do not require the submission of a new Interconnection Request.

This Section 5.12.6.2.1 shall apply to a Resource returning to the Energy market after taking an outage that started on or after May 1, 2015 and that precluded its participation in the Installed Capacity market.

#### 5.12.6.3 Default Unforced Capacity

In its calculation of Unforced Capacity, the ISO shall deem a Resource to be completely forced out for each month for which the Resource has not submitted its Operating Data in accordance with Section 5.12.5 of this Tariff and the ISO Procedures.  A Resource that has been deemed completely forced out for a particular month may submit new Operating Data, for that month, to the ISO at any time.  The ISO will use such new Operating Data when calculating, in a timely manner in accordance with the ISO Procedures, an Unforced Capacity value for the Resource.

Upon a showing of extraordinary circumstances, the ISO retains the discretion to accept at any time Operating Data which have not been submitted in a timely manner, or which do not fully conform with the ISO Procedures.

#### 5.12.6.4 Exception for Certain Equipment Failures

When a Generator, Special Case Resource, Energy Limited Resource, or System Resource is forced into an outage by an equipment failure that involves equipment located on the high voltage side of the electric network beyond the step-up transformer, and including such step-up transformer, the outage will not be counted for purposes of calculating that Resource's Equivalent Demand Forced Outage Rate.

#### 5.12.6.5 Unforced Capacity, Outage Data and Operational Information Associated with External-to-ROS Deliverability Rights

The ISO shall calculate the availability of the External interface associated with each project granted EDRs, in accordance with ISO Procedures. The availability factor (percentage) of the interface will be used to reduce the amount of EDRs for which Unforced Capacity may be offered. This calculation is distinct from and in addition to the calculation the ISO performs for each Installed Capacity Resource qualified for use with EDRs.

### 5.12.7 Availability Requirements

Subsequent to qualifying, each Installed Capacity Supplier shall, except as noted in Section 5.12.11 of this Tariff, on a daily basis: (i) schedule a Bilateral Transaction; (ii) Bid Energy in each hour of the Day-Ahead Market in accordance with the applicable provisions of Section 5.12.1 of this Tariff; or (iii) notify the ISO of any outages.

Until the Capability Year that begins in May 2024, Installed Capacity Suppliers with Energy Duration Limitations corresponding to a Duration Adjustment Factor, as described in Section 5.12.14 below, must on a daily basis during the Peak Load Window and for the number of consecutive hours that correspond to its Energy Duration Limitation, or for the entirety of the Peak Load Window for an Energy Storage Resource or an Aggregation comprised entirely of Energy Storage Resources: (i) schedule a Bilateral Transaction; (ii) Bid Energy in the Day-Ahead Market in accordance with the applicable provisions of Section 5.12.1 of this Tariff; or (iii) notify the ISO of any outages.

Starting with the Capability Year that begins in May 2024, Installed Capacity Suppliers with Energy Duration Limitations less than or equal in length to the number of hours comprising the applicable Peak Load Window, must on a daily basis during the Peak Load Window and for at least the number of consecutive hours that correspond to its Energy Duration Limitation, or for the entirety of the Peak Load Window for an Energy Storage Resource: (i) schedule a Bilateral Transaction; (ii) Bid Energy in the Day-Ahead Market in accordance with the applicable provisions of Section 5.12.1 of this Tariff; or (iii) notify the ISO of any outages. Installed Capacity Suppliers with Energy Duration Limitations greater in length than the number of hours comprising the Peak Load Window, must on a daily basis during the entirety of the applicable Peak Load Window and for additional hours immediately preceding and following the Peak Load Window covering the remaining hours of the Installed Capacity Supplier's Energy Duration Limitation that are not captured in the Peak Load Window, as specified in ISO Procedures: (i) schedule a Bilateral Transaction; (ii) Bid Energy in the Day-Ahead Market in accordance with the applicable provisions of Section 5.12.1 of this Tariff; or (iii) notify the ISO of any outages.

The ISO may adjust the Peak Load Window that Installed Capacity Suppliers with Energy Duration Limitations will be responsible for scheduling, bidding, or notifying for, with scheduling or bidding in hours outside the Peak Load Window in Section 5.12.14.  An RMR Generator can only schedule a Bilateral Transaction to the extent expressly authorized in its RMR Agreement.

The total amount of Energy that an Installed Capacity Supplier schedules, bids, or declares to be unavailable on a given day must equal or exceed the Installed Capacity Equivalent of the Unforced Capacity it supplies.

For Energy Storage Resources without an Energy Duration Limitation, the total amount of Energy that is scheduled, Bid, or declared to be unavailable shall also include the maximum of the Energy Storage Resource's (i) negative Installed Capacity Equivalent, or (ii) Lower Operating Limit, such that amount scheduled, Bid, or declared to be unavailable reflects the entire withdrawal to injection operating range. Until the Capability Year that begins in May 2024, Energy Storage Resources with an Energy Duration Limitation must, on a daily basis, and for each hour outside of the Peak Load Window: (i) Bid in the Day-Ahead Market in accordance with the applicable provisions of Section 5.12.1 of this Tariff; or (ii) notify the ISO of any outages, the maximum of the Energy Storage Resource's (a) negative Installed Capacity Equivalent, or (b) Lower Operating Limit. The amount scheduled, Bid, and/or declared to be unavailable must reflect the Energy Storage Resource's entire withdrawal operating range.

Starting with the Capability Year that begins in May 2024, Energy Storage Resources with an Energy Duration Limitation less than or equal in length to the number of hours comprising the applicable Peak Load Window must, on a daily basis, and for each hour beyond the Peak Load Window: (i) Bid in the Day-Ahead Market in accordance with the applicable provisions of Section 5.12.1 of this Tariff; or (ii) notify the ISO of any outages, the maximum of the Energy Storage Resource's (a) negative Installed Capacity Equivalent, or (b) Lower Operating Limit. Energy Storage Resources with an Energy Duration Limitation greater in length than the number of hours comprising the applicable Peak Load Window must, on a daily basis, and for each hour beyond the hours that the Energy Storage Resources must schedule, bid, or declare to be unavailable in accordance with paragraph three of Section 5.12.7 of this Tariff: (i) Bid in the Day-Ahead Market in accordance with the applicable provisions of Section 5.12.1 of this Tariff; or (ii) notify the ISO of any outages, the maximum of the Energy Storage Resource's

(a) negative Installed Capacity Equivalent, or (b) Lower Operating Limit. The amount scheduled, Bid, and/or declared to be unavailable must reflect the Energy Storage Resource's entire withdrawal operating range.

#### 5.12.7.1 Co-located Storage Resource Availability Requirements

In addition to independently satisfying the requirements of Section 5.12.7 for each Generator that participates in a Co-located Storage Resource, each Installed Capacity Supplier must, on a daily basis, and for each hour of the Day-Ahead Market Day: (i) provide a CSR injection Scheduling Limit; and (ii) notify the ISO of any derate or outage to the interconnection facilities comprising the point of interconnection. The sum of the CSR injection Scheduling Limit and the derate or outage must equal or exceed the sum of the Installed Capacity Equivalent of the Unforced Capacity supplied by the Intermittent Power Resource and the applicable Section 5.12.7 hourly Bid, Schedule, or Notify obligation of the Energy Storage Resource. Each Installed Capacity Supplier must also on a daily basis, and for each hour of the Day-Ahead Market Day: (i) provide a CSR withdrawal Scheduling Limit; and (ii) notify the ISO of any derate or outage to the interconnection facilities comprising the point of interconnection. The sum of the CSR withdrawal Scheduling Limit and the derate or outage must equal or exceed the Energy Storage Resource's applicable 5.12.7 hourly Bid, Schedule, or Notify obligation.

### 5.12.8 Unforced Capacity Sales

Each Installed Capacity Supplier will, after satisfying the deliverability requirements set forth in the applicable provisions of Attachment X, Attachment Z and Attachment S to the ISO OATT, be authorized to supply an amount of Unforced Capacity during each Obligation Procurement Period, based on separate seasonal Unforced Capacity calculations performed by the ISO for the Summer and Winter Capability Periods.  Unforced Capacity may be sold in six-month strips, or in monthly, or multi-monthly segments.

External Unforced Capacity (except External Installed Capacity associated with UDRs) may only be offered into Capability Period Auctions or Monthly Auctions for the Rest of State, and ICAP Spot Market Auctions for the NYCA, and may not be offered into a Locality for an ICAP Auction.  Bilateral Transactions which certify External Unforced Capacity using Import Rights, EDRs, or External CRIS Rights may not be used to satisfy a Locational Minimum Unforced Capacity Requirement.

UCAP from an RMR Generator may only be offered into the ICAP Spot Market Auction, except and only to the extent that the RMR Agreement expressly permits the RMR Generator's UCAP to be certified in a Bilateral Transaction.

If an Energy Limited Resource's, Generator's, System Resource's, Control Area System Resource's, or Aggregation's DMNC rating, or the DMGC rating of a Generator of a Behind-the-Meter Net Generation Resource, if applicable, is determined to have increased during an Obligation Procurement Period, pursuant to testing procedures described in the ISO Procedures, the amount of Unforced Capacity that it shall be authorized to supply in that or future Obligation Procurement Periods shall also be increased on a prospective basis in accordance with the schedule set forth in the ISO Procedures provided that it first has satisfied the deliverability requirements set forth in the applicable provisions of Attachment X, Attachment Z and Attachment S to the ISO OATT.

New Resources and Resources that have increased their Capacity since the previous Summer Capability Period due to changes in their generating equipment and/or Demand Reduction capabilities may, after satisfying the deliverability requirements set forth in the applicable provisions of Attachment X, Attachment Z and Attachment S to the ISO OATT, qualify to supply Unforced Capacity on a foregoing basis during the Summer Capability Period based upon a DMNC test, or the DMGC test of a Resource of a Behind-the-Meter Net Generation Resource, that is performed and reported to the ISO after March 1 and prior to the beginning of the Summer Capability Period DMNC Test Period. The Resource will be required to verify the claimed DMNC or DMGC rating by performing an additional test during the Summer DMNC Test Period. Any shortfall between the amount of Unforced Capacity supplied by the Resource for the Summer Capability Period and the amount verified during the Summer DMNC Test Period will be subject to deficiency charges pursuant to Section 5.14.2 of this Tariff. The deficiency charges will be applied to no more than the difference between the Resource's previous Summer Capability Period Unforced Capacity and the amount of Unforced Capacity equivalent the Resource supplied for the Summer Capability Period.

New Resources and Resources that have increased their Capacity since the previous Winter Capability Period due to changes in their generating equipment and/or Demand Reduction capabilities may, after satisfying the deliverability requirements set forth in the applicable provisions of Attachment X, Attachment Z and Attachment S to the ISO OATT, qualify to supply Unforced Capacity on a foregoing basis during the Winter Capability Period based upon a DMNC test, or the DMGC test of a Resource of a Behind-the-Meter Net Generation Resource, that is performed and reported to the ISO after September 1 and prior to the beginning of the Winter Capability Period DMNC Test Period. The Resource will be required to verify the claimed DMNC or DMGC rating by performing an additional test during the Winter Capability Period DMNC Test Period. Any shortfall between the amount of Unforced Capacity certified by the Resource for the Winter Capability Period and the amount verified during the Winter Capability Period DMNC Test Period will be subject to deficiency charges pursuant to Section 5.14.2 of this Tariff. The deficiency charges will be applied to no more than the difference between the Resource's previous Winter Capability Period Unforced Capacity and the amount of Unforced Capacity equivalent the Resource supplied for the Winter Capability Period.

Any Installed Capacity Supplier, except as noted in Section 5.12.11 of this ISO Services Tariff, which fails on a daily basis to schedule, Bid, or declare to be unavailable in the Day-Ahead Market an amount of Unforced Capacity, expressed in terms of Installed Capacity Equivalent, that it certified for that day, rounded down to the nearest 0.1 MW, or rounded down to the nearest whole MW for an External Installed Capacity Supplier, is subject to sanctions pursuant to Section 5.12.12.2 of this Tariff. If an entity other than the owner of an Energy Limited Resource, Generator, System Resource, Behind-the-Meter Net Generation Resource, or Control Area System Resource, or Aggregation that is providing Unforced Capacity is responsible for fulfilling bidding, scheduling, and notification requirements, the owner and that entity must designate to the ISO which of them will be responsible for complying with the scheduling, bidding, and notification requirements. The designated bidding and scheduling entity shall be subject to sanctions pursuant to Section 5.12.12.2 of this ISO Services Tariff.

### 5.12.9 Sales of Unforced Capacity by System Resources

Installed Capacity Suppliers offering to supply Unforced Capacity associated with Internal System Resources shall submit for each of their Resources the Operating Data and DMNC testing data or historical data described in Sections 5.12.1 and 5.12.5 of this ISO Services Tariff in accordance with the ISO Procedures. Such Installed Capacity Suppliers will be allowed to supply the amount of Unforced Capacity that the ISO determines pursuant to the

ISO Procedures to reflect the appropriate Equivalent Demand Forced Outage Rate. Installed Capacity Suppliers offering to sell the Unforced Capacity associated with System Resources may only aggregate Resources in accordance with the ISO Procedures.

### 5.12.10 Curtailment of External Transactions In-Hour

All Unforced Capacity that is not out of service, or scheduled to serve the Internal NYCA Load in the Day-Ahead Market may be scheduled to supply Energy for use in External Transactions provided, however, that such External Transactions shall be subject to Curtailment within the hour, consistent with ISO Procedures. Such Curtailment shall not exceed the Installed Capacity Equivalent committed to the NYCA.

### 5.12.11 Responsible Interface Parties, Municipally-Owned Generation, Energy Limited Resources, Intermittent Power Resources, and Installed Capacity Suppliers with Energy Duration Limitations

#### 5.12.11.1 Responsible Interface Parties

Responsible Interface Parties may qualify as Installed Capacity Suppliers, without having to comply with the daily bidding, scheduling, and notification requirements set forth in Section 5.12.7 of this Tariff, if their Special Case Resources are available to operate at the direction of the ISO in order to reduce Load from the NYS Transmission System and/or the distribution system for a minimum of four (4) consecutive hours each day, following notice of the potential need to operate twenty-one (21) hours in advance if notification is provided by 3:00 P.M. ET, or twenty-four (24) hours in advance otherwise, and a notification to operate two (2) hours ahead. Special Case Resources will be considered to have a four (4) hour Energy Duration Limitation to align with their obligation. In order for a Responsible Interface Party to enroll an SCR that uses an eligible Local Generator, any amount of generation that can reduce Load from the NYS Transmission System and/or distribution system at the direction of the ISO that was produced by the Local Generator during the hour coincident with the NYCA or Locality peaks, upon which the LSE Unforced Capacity Obligation of the LSE that serves that SCR is based, must be accounted for when the LSE's Unforced Capacity Obligation for the upcoming Capability Year is established. Responsible Interface Parties must provide this generator data in accordance with ISO Procedures so that the ISO can adjust upwards the LSE Unforced Capacity Obligation to prevent double-counting.

Responsible Interface Parties supplying Unforced Capacity cannot offer the Demand Reduction associated with such Unforced Capacity in the Emergency Demand Response Program. A Resource with sufficient metering to distinguish MWs of Demand Reduction may participate as a Special Case Resource and in the Emergency Demand Response Program provided that the same MWs are not committed both as Unforced Capacity and to the Emergency Demand Response Program.

The ISO will have discretion, pursuant to ISO Procedures, to exempt Local Generators that are incapable of starting in two (2) hours from the requirement to operate on two (2) hours notification. Local Generators that can be operated to reduce Load from the NYS Transmission System and/or distribution system at the direction of the ISO and Loads capable of being interrupted upon demand, that are not available on certain hours or days will be derated by the ISO, pursuant to ISO Procedures, to reflect the Load serving equivalence of the hours they are actually available.

Responsible Interface Parties must submit a Minimum Payment Nomination, in accordance with ISO Procedures. The ISO may request Special Case Resource performance from less than the total number of Special Case Resources within the NYCA or a Load Zone in accordance with ISO Procedures.

Special Case Resources with Local Generators that can be operated to reduce Load from the NYS Transmission System and/or distribution system at the direction of the ISO and Special Case Resources with Loads capable of being interrupted upon demand will be required to comply with verification and validation procedures set forth in the ISO Procedures.  Such procedures will not require metering other than interval billing meters on customer Load or testing other than DMNC or sustained disconnect, as appropriate, unless agreed to by the customer, except that Special Case Resources not called to supply Energy in a Capability Period will be required to run a test once every Capability Period in accordance with the ISO Procedures.

Unforced Capacity supplied in a Bilateral Transaction by a Special Case Resource pursuant to this subsection may only be resold if the purchasing entity or the Installed Capacity Marketer has agreed to become a Responsible Interface Party and comply with the ISO notification requirements for Special Case Resources.  LSEs and Installed Capacity Marketers may become Responsible Interface Parties and aggregate Special Case Resources and sell the Unforced Capacity associated with them in an ISO-administered auction if they comply with ISO notification requirements for Special Case Resources.

Responsible Interface Parties that were requested to reduce Load in any month shall submit performance data to the NYISO, within 75 days of each called event or test, in accordance with ISO Procedures.  Failure by a Responsible Interface Party to submit performance data for any Special Case Resources required to respond to the event or test within the 75-day limit will result in zero performance attributed to those Special Case Resources for purposes of satisfying the Special Case Resource's capacity obligation as well as for determining energy payments.  All performance data are subject to audit by the NYISO and its market monitoring unit.  If the ISO determines that it has made an erroneous payment to a Responsible Interface Party, the ISO shall have the right to recover it either by reducing other payments to that Responsible Interface Parties or by resolving the issue pursuant to other provisions of this Services Tariff or other lawful means.

Provided the Responsible Interface Party supplies evidence of such reductions in 75 days, the ISO shall pay the Responsible Interface Party  that, through their Special Case Resources, caused a verified Load reduction in response to (i) an ISO request to perform due to a forecast reserve shortage (ii) an ISO declared Major Emergency State, (iii) an ISO request to perform made in response to a request for assistance for Load relief purposes or as a result of a Local Reliability Rule, or (iv) a test called by the ISO, for such Load reduction, in accordance with ISO Procedures.  Subject to performance evidence and verification, in the case of a response pursuant to clauses (i), (ii), of (iii) of this subsection, Suppliers that schedule Responsible Interface Parties shall be paid the zonal Real-Time LBMP for the period of requested performance or four (4) hours, whichever is greater, in accordance with ISO Procedures; provided, however, Special Case Resource Capacity shall settle Demand Reductions, in the interval and for the capacity for which Special Case Resource Capacity has been scheduled Day-Ahead to provide Operating Reserves, Regulation Service or Energy, as being provided by a Supplier of Operating Reserves, Regulation Service or Energy.

In the event that a Responsible Interface Party's Minimum Payment Nomination for a Special Case Resource, for the number of hours of requested performance or the minimum four (4) hour period, whichever is greater, exceeds the LBMP revenue received, the Special Case Resource will be eligible for a Bid Production Cost Guarantee to make up the difference, in accordance with Section 4.23 of this Services Tariff and ISO Procedures; provided, however, the

ISO shall set to zero the Minimum Payment Nomination for Special Case Resource Capacity in each interval in which such Capacity was scheduled Day-Ahead to provide Operating Reserves, Regulation Service or Energy. Subject to performance evidence and verification, in the case of a response pursuant to clause (iv) of this subsection, payment for participation in tests called by the ISO shall be equal to the zonal Real Time LBMP for the MWh of Energy reduced within the test period.

Transmission Owners that require assistance from enrolled Special Case Resources with Local Generators larger than 100 kW and Special Case Resources with Loads capable of being interrupted upon demand for Load relief purposes or as a result of a Local Reliability Rule, shall direct their requests for assistance to the ISO for implementation consistent with the terms of this section. Within Load Zone J, participation in response to an ISO request to perform made as a result of a request for assistance from a Transmission Owner for less than the total number of Special Case Resources, for Load relief purposes or as a result of a Local Reliability Rule, in accordance with ISO Procedures, shall be voluntary and the responsiveness of the Special Case Resource shall not be taken into account for performance measurement.

#### 5.12.11.1.1 Special Case Resource Average Coincident Load

The ISO must receive from the Responsible Interface Party that enrolls a Special Case Resource, the applicable metered Load data required to calculate an ACL for that SCR as provided below and in accordance with ISO Procedures. The ACL shall be computed using the metered Load for the applicable Capability Period SCR Load Zone Peak Hours that indicates the Load consumed by each SCR that is supplied by the NYS Transmission System and/or distribution system and is exclusive of any generation produced by a Local Generator, other behind-the-meter generator, or other supply source located behind the SCR's meter, that served some of the SCR's Load.

Beginning with the Winter 2011-2012 Capability Period and thereafter, the ISO shall use the average of the highest twenty (20) one-hour peak Loads of the SCR taken from the Load data reported for the Capability Period SCR Load Zone Peak Hours during the Prior Equivalent Capability Period, and taking into account the resource's reported verified Load reduction in a Transmission Owner's demand response program in hours coincident with any of these hours, to create a SCR ACL baseline. In addition, beginning with the Summer 2014 Capability Period, the resource's verified Load reduction in either of the ISO's economic demand response programs (the Day Ahead Demand Response Program and the Demand Side Ancillary Services Program) in hours coincident with any of the applicable Capability Period SCR Load Zone Peak Hours will be taken into account when creating the SCR ACL. For the Day Ahead Demand Response Program, the verified Load reduction that occurred in response to a DADRP schedule shall be added to the Capability Period SCR Load Zone Peak Hour for which the reduction in response to a DADRP schedule occurred. For the Demand Side Ancillary Services Program, the Load value to be used in calculating the ACL for each hour during the Capability Period SCR Load Zone Peak Hours in which a non-zero Base Point Signal the ISO provides to the resource, shall be the greater of (a) the DSASP Baseline MW value in the interval immediately preceding the first non-zero Base Point Signal in the Capability Period SCR Load Zone Peak Hour and (b) the metered Load of the resource as reported by the RIP for the Capability Period SCR Load Zone Peak Hour. When the non-zero Base Point Signal dispatch of a DSASP resource begins in one hour and continues into consecutive hours, and the consecutive hour is identified as being a Capability Period SCR Load Zone Peak Hour, the DSASP Baseline MW value in effect at the beginning of the dispatch of the non-zero Base Point Signal shall be the MW value used for purposes of determining the applicable Load value for that Capability Period SCR Load Zone Peak Hour, in accordance with the preceding sentence.  The ISO will post to its website the Capability Period SCR Load Zone Peak Hours for each zone ninety (90) days prior to the beginning of the Capability Period for which the ACL will be in effect.

In the SCR enrollment file uploaded by the RIP each month within the Capability Period, among other required information, the RIP shall provide the SCR's metered Load values for the applicable Capability Period SCR Load Zone Peak Hours necessary to compute the ACL for each SCR.

The exception to this requirement to report the required metered Load data for the ACL, when enrolling a SCR prior to the Summer 2014 Capability Period, is if (i) the SCR has not previously been enrolled with the ISO and (ii) never had interval metering Load data for each month in the Prior Equivalent Capability Period needed to compute the SCR's ACL.  Beginning with the Summer 2014 Capability Period, the exception to this requirement to report the required metered Load data for the ACL, is dependent upon one or more of the eligibility conditions for SCR enrollment with a Provisional ACL provided in Section 5.12.11.1.2 of this Services Tariff and ISO Procedures.  For SCRs that meet the criteria to enroll with a Provisional ACL, the ISO must receive from the RIP a Provisional ACL as provided in Section 5.12.11.1.2 of this Services Tariff and in accordance with ISO Procedures.

Beginning with the Summer 2014 Capability Period, in addition to the requirement for RIPs to report each SCR's metered Load values that occurred during the Capability Period SCR Load Zone Peak Hours, in accordance with this Services Tariff and ISO Procedures during the enrollment process, any qualifying increase in a SCR's Load that will be supplied by the NYS

Transmission System and/or distribution system may be reported as an Incremental ACL, subject to the limitations and verification reporting requirements provided in Section 5.12.11.1.5 of this Services Tariff and in accordance with ISO Procedures.  Incremental ACL values must be reported using the required enrollment file that may be uploaded by the RIP during each month's enrollment period.  RIPs may not report Incremental ACL values for any SCRs that are enrolled in the Capability Period with a Provisional ACL.

A reduction in a SCR's Load that is supplied by the NYS Transmission System and/or distribution system and meets the criteria for a SCR Change of Status must be reported as a SCR Change of Status as provided by Section 5.12.11.1.3 of this Services Tariff and in accordance with ISO Procedures.

The ACL is the basis for the upper limit of ICAP, except in circumstances when the SCR has reported a SCR Change of Status or reported an Incremental ACL pursuant to Sections 5.12.11.1.3 and 5.12.11.1.5 of this Services Tariff.  The basis for the upper limit of ICAP for a SCR that has experienced a SCR Change of Status or reported an Incremental ACL shall be the Net ACL.

**5.12.11.1.2 Use of a Provisional Average Coincident Load**

Prior to the Summer 2014 Capability Period, as provided in Section 5.12.11.1.1 of this Services Tariff, if a new Special Case Resource has not previously been enrolled with the ISO and never had interval billing meter data from the Prior Equivalent Capability Period, its Installed Capacity value shall be its Provisional Average Coincident Load for the Capability Period for which the new SCR is enrolled.  The Provisional ACL may be applicable to a new SCR for a maximum of three (3) consecutive Capability Periods, beginning with the Capability Period in which the SCR is first enrolled.

Beginning with the Summer 2014 Capability Period, a SCR may be enrolled using a Provisional ACL in lieu of an ACL when one of the following conditions has been determined by the ISO to apply: (i) the SCR has not previously been enrolled with the ISO for the seasonal Capability Period for which the SCR enrollment with a Provisional ACL is intended, (ii) the SCR was enrolled with a Provisional ACL in the Prior Equivalent Capability Period and was required to report fewer than twenty (20) hours of metered Load verification data that correspond with the Capability Period SCR Load Zone Peak Hours based on the meter installation date of the SCR, (iii) the RIP attempting to enroll the SCR with a Provisional ACL is not the same RIP that enrolled the SCR in the Prior Equivalent Capability Period and interval billing meter data for the SCR from the Prior Equivalent Capability Period is not obtainable by the enrolling RIP and not available to be provided to the enrolling RIP by the ISO. The Provisional ACL may be applicable to a SCR for a maximum of three (3) consecutive Capability Periods when enrolled with the same RIP, beginning with the Capability Period in which the SCR is first enrolled by the RIP.

A SCR enrolled in the Capability Period with a Provisional ACL may not be enrolled by another RIP for the remainder of the Capability Period and the Provisional ACL value shall apply to the resource for the entire Capability Period for which the value is established.

The Provisional ACL is the RIP's forecast of the SCR's ACL and shall be the basis for the upper limit of ICAP for which the RIP may enroll the SCR during the Capability Period.

Any SCR enrolled with a Provisional ACL shall be subject to actual in-period verification. A Verified ACL shall be calculated by the ISO using the top twenty (20) one-hour peak Loads reported for the SCR from the Capability Period SCR Load Zone Peak Hours that are applicable to verify the Provisional ACL in accordance with ISO Procedures and taking into account the resource's reported verified Load reductions in a Transmission Owner's demand response program that are coincident with any of the applicable Capability Period SCR Load Zone Peak Hours. In addition, beginning with the Summer 2014 Capability Period, the resource's verified Load reduction in either of the ISO's economic demand response programs (the Day Ahead Demand Response Program and the Demand Side Ancillary Services Program) in hours coincident with any of the applicable Capability Period SCR Load Zone Peak Hours will be taken into account when creating the SCR Verified ACL. For the Day Ahead Demand Response Program, the verified Load reduction that occurred in response to a DADRP schedule shall be added to the Capability Period SCR Load Zone Peak Hour for which the reduction in response to a DADRP schedule occurred. For the Demand Side Ancillary Services Program, the Load value to be used in calculating the Verified ACL for each hour during the Capability Period SCR Load Zone Peak Hours in which a non-zero Base Point Signal the ISO provides to the resource, shall be the greater of (a) the DSASP Baseline MW value in the interval immediately preceding the first non-zero Base Point Signal in the Capability Period SCR Load Zone Peak Hour and (b) the metered Load of the resource as reported by the RIP for the Capability Period SCR Load Zone Peak Hour. When the non-zero Base Point Signal dispatch of a DSASP resource begins in one hour and continues into consecutive hours, and the consecutive hour is identified as being a Capability Period SCR Load Zone Peak Hour, the DSASP Baseline MW value in effect at the beginning of the dispatch of the non-zero Base Point Signal shall be the MW value used for purposes of determining the applicable Load value for that Capability Period SCR Load Zone Peak Hour, in accordance with the preceding sentence.

Following the Capability Period for which a resource with a Provisional ACL was enrolled, the RIP shall provide to the ISO the metered Load data required to compute the

Verified ACL of the resource. The ISO shall compare the Provisional ACL to the Verified ACL to determine, after applying the applicable performance factor, whether the UCAP of the SCR had been oversold and whether a shortfall has occurred as provided under Section 5.14.2 of this Services Tariff. If the RIP fails to provide verification data required to compute the Verified ACL of the resource enrolled with a Provisional ACL by the deadline: (a) the Verified ACL of the resource shall be set to zero for each Capability Period in which the resource with a Provisional ACL was enrolled and verification data was not reported, and (b) the RIP may be subject to penalties in accordance with this Services Tariff.

**5.12.11.1.3 Reporting a SCR Change of Load or SCR Change of Status**

**5.12.11.1.3.1 SCR Change of Load**

The Responsible Interface Party shall report any SCR Change of Load in accordance with ISO Procedures. The RIP is required to document the SCR Change of Load and when the total Load reduction for SCRs that have a SCR Change of Load within the same Load Zone is greater than or equal to 5 MWs, the RIP shall report the SCR Change of Load for each SCR in accordance with ISO Procedures.

**5.12.11.1.3.2 SCR Change of Status**

The Responsible Interface Party shall report any SCR Change of Status in accordance with ISO Procedures. The ISO shall adjust the reported ACL of the SCR for a reported SCR Change of Status to the Net ACL, for all prospective months to which the SCR Change of Status is applicable. When a SCR Change of Status is reported under clause (i), (ii) or (iii) within the definition of a Qualified Change of Status Condition and the SCR has sold capacity, the SCR shall be evaluated for a potential shortfall under Section 5.14.2 of this Services Tariff. Failure by the RIP to report a SCR Change of Status shall be evaluated as a potential shortfall under Section

5.14.2 of this Service Tariff and evaluated for failure to report under Section 5.12.12.2 of this Services Tariff.

Beginning with the Summer 2014 Capability Period, SCRs that were required to perform in the first performance test in the Capability Period in accordance with ISO Procedures and that subsequently report or change a reported SCR Change of Status value after the first performance test in the Capability Period shall be required to demonstrate the performance of the resource against the Net ACL value in the second performance test in the Capability Period. The exceptions to this provision occur when a SCR's eligible Installed Capacity is set to zero throughout the period of the SCR Change of Status, when a SCR's eligible Installed Capacity is decreased by at least the same kW value as the reported SCR Change of Status, or if a SCR Change of Status is reported, and prior to the second performance test, the SCR returns to the full applicable ACL enrolled prior to the SCR Change of Status. Performance in both performance tests shall be used in calculation of the resource's performance factors and all associated performance factors, deficiencies and penalties. If the RIP fails to report the performance for a resource that was required to perform in the second performance test in the Capability Period: (a) the resource will be assigned a performance of zero (0) for the test hour, and (b) the RIP shall be evaluated for failure to report under Section 5.12.12.2 of this Services Tariff.

**5.12.11.1.4 Average Coincident Load of an SCR Aggregation**

The ISO shall compute the Average Coincident Load of an SCR Aggregation each month in accordance with ISO Procedures.

**5.12.11.1.5 Use of an Incremental Average Coincident Load**

Beginning with the Summer 2014 Capability Period, a Responsible Interface Party may report any qualifying increase to a Special Case Resource's Average Coincident Load as

Incremental Average Coincident Load in the RIP enrollment file upload and in accordance with this Services Tariff and ISO Procedures.

For SCRs with a total Load increase equal to or greater than twenty (20) percent and less than thirty (30) percent of the applicable ACL, the RIP may enroll the SCR with an Incremental ACL provided that the eligible Installed Capacity does not increase from the prior enrollment months within the same Capability Period and prior to enrollment with an Incremental ACL.  If the SCR is enrolled with an Incremental ACL and it is the first month of the SCR's enrollment in the applicable Capability Period, the enrolled eligible Installed Capacity value shall not exceed the maximum eligible Installed Capacity of the SCR from the Prior Equivalent Capability Period. When no enrollment exists for the SCR in the Prior Equivalent Capability Period and it is the first month of the SCR's enrollment in the applicable Capability Period, the enrolled eligible Installed Capacity of the SCR shall not exceed the ACL calculated from the Capability Period SCR Load Zone Peak Hours.  For SCRs with a total Load increase equal to or greater than thirty (30) percent of the applicable ACL, the RIP may enroll the SCR with an Incremental ACL and an increase to the SCR's eligible Installed Capacity and is required to test as described in this section of the Service Tariff.

The ISO shall adjust the ACL of the SCR for an Incremental ACL for all months for which the Incremental ACL is reported by the RIP.  For resources reporting an Incremental ACL, the Net ACL shall equal the enrolled ACL plus the reported Incremental ACL less any applicable SCR Change of Status and shall be the basis for the upper limit of ICAP for which the RIP may enroll the SCR during the Capability Period.

An Incremental ACL is a discrete change to the SCR operations that is expected to result in an increase to the Load that the SCR will consume from the NYS Transmission System and/or distribution system. It is not available to account for random fluctuations in Load, such as those caused by weather or other seasonal Load variations. Therefore, the ACL of a SCR may only be increased once per Capability Period and the amount of the increase enrolled must remain the same for all months for which the Incremental ACL is reported. A SCR enrolled in the Capability Period with an Incremental ACL may not be enrolled by another RIP for the remainder of the Capability Period. A SCR enrolled in the Capability Period with a Provisional ACL is not eligible to enroll with an Incremental ACL.

Following the Capability Period for which a SCR has been enrolled with an Incremental ACL, the RIP shall provide the hourly metered Load verification data that corresponds to the Monthly SCR Load Zone Peak Hours identified by the ISO for all months in which an Incremental ACL value was reported for the SCR. For each month for which verification data was required to be reported, the ISO shall calculate a Monthly ACL that will be used in the calculation of a Verified ACL. The Monthly ACL shall equal the average of the SCR's top twenty (20) one-hour metered Load values that correspond with the applicable Monthly SCR Load Zone Peak Hours, and taking into account (i) the resource's reported verified Load reduction in a Transmission Owner's demand response program in hours coincident with any of these hours and (ii) the resource's verified Load reduction in either of the ISO's economic demand response programs (the Day Ahead Demand Response Program and the Demand Side Ancillary Services Program) in hours coincident with any of these hours. For the Day Ahead Demand Response Program, the verified Load reduction that occurred in response to a DADRP schedule shall be added to the Monthly SCR Load Zone Peak Hour for which the reduction in response to a DADRP schedule occurred. For the Demand Side Ancillary Services Program, the Load value to be used in calculating the Monthly ACL for each hour during the Monthly SCR

Load Zone Peak Hours in which a non-zero Base Point Signal the ISO provides to the resource, shall be the greater of (a) the DSASP Baseline MW value in the interval immediately preceding the first non-zero Base Point Signal in the Monthly SCR Load Zone Peak Hour and (b) the metered Load of the resource as reported by the RIP for the Monthly SCR Load Zone Peak Hour. When the non-zero Base Point Signal dispatch of a DSASP resource begins in one hour and continues into consecutive hours, and the consecutive hour is identified as being a Monthly SCR Load Zone Peak Hour, the DSASP Baseline MW value in effect at the beginning of the dispatch of the non-zero Base Point Signal shall be the MW value used for purposes of determining the applicable Load value for that Monthly SCR Load Zone Peak Hour, in accordance with the preceding sentence. The Verified ACL shall be the average of the two (2) highest Monthly ACLs during the Capability Period in which the SCR was enrolled with an Incremental ACL within the same Capability Period.

For any month in which verification data for the Incremental ACL is required but not timely submitted to the ISO in accordance with ISO procedures, the ISO shall set the metered Load values to zero. When a Monthly ACL is set to zero, the Verified ACL will be calculated as the average of: a) the two (2) highest Monthly ACLs during the Capability Period in which the SCR was enrolled with an Incremental ACL within the same Capability Period; plus b) the Monthly ACLs for all months in which the SCR was enrolled within the same Capability Period with an Incremental ACL in the Capability Period in which the RIP failed to provide the minimum verification data required. In addition, a RIP may be subject to a penalty for each month for which verification data was required and not reported in accordance with this Services Tariff.

For each SCR that is enrolled with an Incremental ACL, the ISO shall compare the Net ACL calculated from the resource enrollment (ACL plus Incremental ACL less any applicable SCR Change of Status) to the Verified ACL calculated for the SCR to determine if the RIP's use of an Incremental ACL may have resulted in a shortfall pursuant to Section 5.14.2.

A Special Case Resource that was required to perform in the first performance test in the Capability Period in accordance with ISO Procedures and was subsequently enrolled using an Incremental ACL and an increase in the amount of Installed Capacity that the SCR is eligible to sell, shall be required to demonstrate performance against the maximum amount of eligible Installed Capacity reported for the SCR in the second performance test in the Capability Period. Performance in this test shall be measured from the Net ACL. Performance in both performance tests shall be used in calculation of the resource's performance factor and all associated performance factors, deficiencies and penalties. If the RIP fails to report the performance for a resource that was required to perform in the second performance test in the Capability Period: (a) the resource will be assigned a performance of zero (0) for the test hour, and (b) the RIP shall be evaluated for failure to report under Section 5.12.12.2 of this Services Tariff.

**5.12.11.2 Existing Municipally-Owned Generation**

A municipal utility that owns existing generation in excess of its Unforced Capacity requirement, net of NYPA-provided Capacity may, consistent with the deliverability requirements set forth in Attachment X and Attachment S to the ISO OATT, offer the excess Capacity for sale as Installed Capacity provided that it is willing to operate the generation at the ISO's request, and provided that the Energy produced is deliverable to the New York State Power System. Such a municipal utility shall not be required to comply with the requirement of Section 5.12.7 of this Tariff that an Installed Capacity Supplier bid into the Energy market or enter into Bilateral Transactions. Municipal utilities shall, however, be required to submit their typical physical operating parameters, such as their start-up times, to the ISO. This subsection is only applicable to municipally-owned generation in service or under construction as of December 31, 1999.

#### 5.12.11.3 Energy Limited Resources

An Energy Limited Resource or an Aggregation that is comprised entirely of a single Resource-type Energy Limited Storage Resource may, consistent with the deliverability requirements set forth in Attachment X and Attachment S to the ISO OATT, qualify as an Installed Capacity Supplier if it Bids its Installed Capacity Equivalent into the Day-Ahead Market each day and if it is able to provide the Energy equivalent of the Unforced Capacity for the number of consecutive hours that correspond to its Energy Duration Limitation each day. Energy Limited Resources or Aggregations that are Energy Limited Resources shall also Bid a Normal Upper Operating Limit or Emergency Upper Operating Limit, as applicable, designating their desired operating limits. Energy Limited Resources or Aggregations that are Energy Limited Resources that are not scheduled in the Day-Ahead Market to operate at a level above their bid-in upper operating limit, may be scheduled in the RTC, or may be called in real-time pursuant to a manual intervention by ISO dispatchers, who will account for the fact that Energy Limited Resource or an Aggregation that is an Energy Limited Resource may not be capable of responding.

#### 5.12.11.4 Intermittent Power Resources

Intermittent Power Resources that depend upon wind or solar as their fuel or Aggregations that are entirely comprised of Intermittent Power Resources that depend on the same type of fuel, with that fuel being wind or solar, may qualify as Installed Capacity Suppliers, without having to comply with the daily bidding and scheduling requirements set forth in Section 5.12.7 of this Tariff, and may, consistent with the deliverability requirements set forth in Attachment X and Attachment S to the ISO OATT, claim up to their nameplate Capacity as Installed Capacity. To qualify as Installed Capacity Suppliers, such Intermittent Power Resources shall comply with the requirements of Section 5.12.1 and the outage notification requirements of 5.12.7 of this Tariff.

**5.12.11.5 Installed Capacity Suppliers with an Energy Duration Limitation**

A Resource with an Energy Duration Limitation may, consistent with the deliverability requirements set forth in Attachment X and Attachment S to the ISO OATT, qualify as an Installed Capacity Supplier with an Energy Duration Limitation if it Bids its Installed Capacity Equivalent into the Day-Ahead Market each day and if it is able to provide the Energy equivalent of the Unforced Capacity for the number of consecutive hours that correspond to its Energy Duration Limitation each day. Installed Capacity Suppliers with an Energy Duration Limitation shall also Bid a Normal Upper Operating Limit or Emergency Upper Operating Limit, as applicable, designating their desired operating limits. Installed Capacity Suppliers with an Energy Duration Limitation that are not scheduled in the Day-Ahead Market to operate at a level above their bid-in upper operating limit, may be scheduled in the RTC, or may be called in real-time pursuant to a manual intervention by ISO dispatchers, who will account for the fact that Installed Capacity Suppliers with an Energy Duration Limitation may not be capable of responding.

## 5.12.12 Sanctions Applicable to Installed Capacity Suppliers and Transmission Owners

Pursuant to this section, the ISO may impose financial sanctions on Installed Capacity Suppliers and Transmission Owners that fail to comply with certain provisions of this Tariff. The ISO shall notify Installed Capacity Suppliers and Transmission Owners prior to imposing any sanction and shall afford them a reasonable opportunity to demonstrate that they should not be sanctioned and/or to offer mitigating reasons why they should be subject to a lesser sanction. The ISO may impose a sanction lower than the maximum amounts allowed by this section at its sole discretion. Installed Capacity Suppliers and Transmission Owners may challenge any sanction imposed by the ISO pursuant to the ISO Dispute Resolution Procedures.

Any sanctions collected by the ISO pursuant to this section will be applied to reduce the Rate Schedule 1 charge under this Tariff.

### 5.12.12.1 Sanctions for Failing to Provide Required Information

If (i) an Installed Capacity Supplier fails to provide the information required by Sections 5.12.1.1, 5.12.1.2, 5.12.1.3, 5.12.1.4, 5.12.1.7 or 5.12.1.8 of this Tariff in a timely fashion, or (ii) a Supplier of Unforced Capacity from External System Resources located in an External Control Area or from a Control Area System Resource that has agreed not to Curtail the Energy associated with such Installed Capacity, or to afford it the same Curtailment priority that it affords its own Control Area Load, fails to provide the information required for certification as an Installed Capacity Supplier established in the ISO Procedures, the ISO may take the following actions: On the first day that required information is late, the ISO shall notify the Installed Capacity Supplier that required information is past due and that it reserves the right to impose financial sanctions if the information is not provided by the end of the following day. Starting on the third day that the required information is late, the ISO may impose a daily financial sanction of up to the higher of $500 or $5 per MW of Installed Capacity that the Generator, System Resource, or Control Area System Resource in question is capable of providing.  Starting on the tenth day that the required information is late, the ISO may impose a daily financial sanction of up to the higher of $1000 or $10 per MW of Installed Capacity that the Generator, System Resource, or Control Area System Resource in question is capable of providing.

If an Installed Capacity Supplier fails to provide the information required by Subsection 5.12.1.5 of this Tariff in a timely fashion, the ISO may take the following actions:  On the first calendar day that required information is late, the ISO shall notify the Installed Capacity Supplier that required information is past due and that it reserves the right to impose financial sanctions if the information is not provided by the end of that first calendar day.  Starting on the second calendar day that the required information is late, the ISO may impose a daily financial sanction up to the higher of $500 or $5 per MW of Installed Capacity that the Generator, System Resource, or Control Area System Resource in question is capable of providing.

If a TO fails to provide the information required by Subsection 5.11.3 of this Tariff in a timely fashion, the ISO may take the following actions:  On the first day that required information is late, the ISO shall notify the TO that required information is past due and that it reserves the right to impose financial sanctions if the information is not provided by the end of the following day.  Starting on the third day that the required information is late, the ISO may impose a daily financial sanction up to $5,000 a day.  Starting on the tenth day that required information is late, the ISO may impose a daily financial sanction up to $10,000.

#### 5.12.12.2 Sanctions for Failing to Comply with Scheduling, Bidding, and Notification Requirements

On any day in which an Installed Capacity Supplier fails to comply with the scheduling, bidding, or notification requirements of Sections 5.12.1.6 or 5.12.1.10, or with Section 5.12.7 of this Tariff, or in which a Supplier of Installed Capacity from External System Resources or Control Area System Resources located in an External Control Area that has agreed not to Curtail the Energy associated with such Installed Capacity, or to afford it the same Curtailment priority that it affords its own Control Area Load, fails to comply with scheduling, bidding, or notification requirements for certification as an Installed Capacity Supplier established in the ISO Procedures, the ISO may impose a financial sanction up to the product of a deficiency charge (pro-rated on a daily basis for Installed Capacity Suppliers) and the maximum number of MWs that the Installed Capacity Supplier failed to schedule or Bid in any hour in that day provided, however, that no financial sanction shall apply to any Installed Capacity Supplier who demonstrates that the Energy it schedules, bids, or declares to be unavailable on any day is not less than the Installed Capacity that it supplies for that day rounded down to the nearest 0.1 MW, or rounded down to the nearest whole MW for an External Installed Capacity Supplier. For Installed Capacity Suppliers that have an Energy Duration Limitation, the deficiency charge will be pro-rated on a daily basis only taking into account hours during the Peak Load Window corresponding with the Resource's Energy Duration Limitation obligation, excluding Energy Storage Resources which will be evaluated over all hours during the Peak Load Window, and the maximum number of MWs that the Installed Capacity Supplier with an Energy Duration Limitation failed to schedule or Bid in any hour in the Peak Load Window of that day provided, however, that no financial sanction shall apply to any Installed Capacity Supplier that demonstrates that the Energy it schedules, bids, or declares to be unavailable on any day is not less than the Installed Capacity that it supplies for that day rounded down to the nearest 0.1 MW. The deficiency charge may be up to one and one-half times the applicable Market-Clearing Price of Unforced Capacity determined in the ICAP Spot Market Auction corresponding to where the

Installed Capacity Supplier's capacity cleared, and for each month in which the Installed Capacity Supplier is determined not to have complied with the foregoing requirements.

In addition to the financial sanctions described above, the Installed Capacity Supplier offering a Generator that participates as a Co-located Storage Resource may also be subject to a financial sanction for failing to comply with the requirements of Services Tariff Section 5.12.7.1. When such Installed Capacity Supplier fails to comply with Services Tariff Section 5.12.7.1, the ISO may impose a financial sanction up to the product of a deficiency charge and the difference between Installed Capacity Equivalent of the Unforced Capacity of the Generator and the CSR Scheduling Limit.  If an Installed Capacity Supplier is subject to financial sanctions for its failure to comply with Services Tariff Section 5.12.7.1 is also subject to a penalty under this Section for failing to comply with the scheduling, bidding, or notification requirements of Sections 5.12.1.6 or 5.12.1.10, or with Section 5.12.7 of this Tariff for the same Day-Ahead Market hour, the NYISO shall assess only the greater of the two sanctions for that hour.

In addition, if any Installed Capacity Supplier fails to comply with the scheduling, bidding, or notification requirements of Sections 5.12.1.6 or 5.12.1.10, or with Section 5.12.7 of this Tariff, or if an Installed Capacity Supplier of Unforced Capacity from an External Control Aria fails to comply with the scheduling, bidding, or notification requirements for certification as an Installed Capacity Supplier established in the ISO Procedures, during an hour in which the ISO curtails Exports associated with NYCA Installed Capacity Suppliers consistent with Section 5.12.10 of this Tariff and with ISO Procedures, then the ISO may impose an additional financial sanction equal to the product of the number of MWs the Installed Capacity Supplier failed to schedule during that hour and the corresponding Real-Time LBMP at the applicable Proxy Generator Bus.

To the extent an Installed Capacity Supplier of Unforced Capacity from an External Control Area or an External Generator associated with an Unforced Capacity sale using UDRs or EDRs fails to comply with Section 5.12.1.10 of this Tariff, the Installed Capacity Supplier or External Generator associated with an Unforced Capacity sale using UDRs or EDRs shall be subject to a deficiency charge calculated in accordance with the formula set forth below for each Obligation Procurement Period:

$$Deficiency\ charge = 1.5 * PRICE * \left(\frac{1000kW}{1MW}\right) * \left(\frac{\sum_{n=1}^{N}\left(\max\left(ICAP_n^{MWh} - SRE_n^{MWh}, 0\right)\right)}{N}\right)$$

Where:

N = total number of hours of SRE calls during the relevant Obligation Procurement Period

PRICE = ICAP Spot Market Auction clearing price for the relevant Obligation Procurement Period

$ICAP_n^{MWh}$ = for each hour *n* of SRE calls during the relevant Obligation Procurement Period, the ICAP equivalent of the UCAP sold from the External Installed Capacity Supplier that is a Generator, or the External Generator associated with an Unforced Capacity sale using UDRs or EDRs, or the Control Area System Resource in MWh, minus (x) any MWh that are unavailable due to an outage as defined in the ISO Procedures, or due to due to physical operating limitations affecting the External Installed Capacity Supplier that is a Generator, or the External Generator associated with an Unforced Capacity sale using UDRs or EDRs, or due to other operational issues that the ISO determines to be outside the Installed Capacity Supplier’s control, and (y) any MWh that were Bid as Imports to the NYCA at the appropriate Proxy

Generator Bus at a price that was designed to ensure the Import was scheduled to the greatest extent possible, but that were not scheduled by the ISO

$SRE_n^{MWh}$ = MWh provided to the NYCA at the appropriate Proxy Generator Bus from the External Installed Capacity Supplier that is a Generator, or the External Generator associated with an Unforced Capacity sale using UDRs or EDRs, or the Control Area System Resource, during each hour *n* of SRE calls during the relevant Obligation Procurement Period.

If an Installed Capacity Supplier's failure to fully comply with this Tariff would, in addition to being assessed a deficiency charge calculated in accordance with the formula set forth above, also permit the ISO to impose a different deficiency charge or a financial sanction under this Section 5.12.12.2, or to impose a deficiency charge for a shortfall under Section 5.14.2.2 of this Tariff, then the ISO shall only impose the penalty for failure to comply with Section 5.12.1.10 of this Tariff on the Installed Capacity Supplier for the hour(s) in which the Installed Capacity Supplier failed to meet its obligations under Section 5.12.1.10 of this Tariff.

If the Installed Capacity Supplier is a Responsible Interface Party that enrolled a SCR with an Incremental ACL in accordance with this Services Tariff, and also reported an increase to the Installed Capacity the SCR has eligible to sell after the first performance test in the Capability Period, the ISO may impose an additional financial sanction due to the failure of the RIP to report the required performance of the SCR against the Net ACL value in the second performance test in the Capability Period.  This sanction shall be the value of the reported increase in the eligible Installed Capacity associated with the SCR that was sold by the RIP in each month of the Capability Period, during which the reported increase was in effect, multiplied by up to one and one-half times the applicable Market-Clearing Price of Unforced Capacity determined in the ICAP Spot Market Auction for each such month.

If the Installed Capacity Supplier is a Responsible Interface Party, and the Average Coincident Load of the Special Case Resource has been decreased after the first performance test in the Capability Period, due to a SCR Change of Status in accordance with this Services Tariff and ISO Procedures, the ISO may impose an additional financial sanction resulting from the failure of the RIP to report the required performance of the SCR against the Net ACL value of the SCR when the SCR was required to perform in the second performance test in the Capability Period in accordance with Section 5.12.11.1.3.2 of this Services Tariff. This sanction shall be the value of the Unforced Capacity equivalent of the SCR Change of Status MW reported for the SCR during the months for which the SCR was enrolled with a SCR Change of Status and was required to demonstrate in the second performance test as specified in Section 5.12.11.1.3.2 of this Services Tariff, multiplied by up to one and one-half times the applicable Market-Clearing Price of Unforced Capacity determined in the ICAP Spot Market Auction for each such month.

If a RIP fails to provide the information required by Section 5.12.11.1.3 of this Services Tariff in accordance with the ISO Procedures for reporting a Qualified Change of Status Condition, and the ISO determines that a SCR Change of Status occurred within a Capability Period, the ISO may impose a financial sanction equal to the difference, if positive, between the enrolled ACL and the maximum one hour metered Load for the month multiplied by up to one-half times the applicable Market-Clearing Price of Unforced Capacity determined in the ICAP Spot Market Auction for each month the Installed Capacity Supplier is deemed to have a shortfall in addition to the corresponding shortfall penalty as provided in Section 5.14.2.

For each month in which a RIP fails to report required verification data and the applicable ACL value is set to zero in accordance with Section 5.12.11 of this Services Tariff, the ISO shall have the right to recover any energy payments made to the RIP for performance of the SCR by reducing other payments or other lawful means.

### 5.12.13 Aggregations

#### 5.12.13.1 Resources Changing Aggregations

Individual Distributed Energy Resources may elect to leave their current Aggregation and join a new Aggregation pursuant to the Resources Changing Aggregation rules set forth in this Services Tariff section below and in Services Tariff section 4.1.10.3. The Installed Capacity of a Distributed Energy Resource that enters a new Aggregation will be assigned to the new Aggregation on a monthly basis beginning on the first day of the month in which the Distributed Energy Resource enters the new Aggregation. The Installed Capacity of a Distributed Energy Resource that exits an Aggregation will be removed from the Aggregation on the last day in which the Distributed Energy Resource is registered in the Aggregation. The specific processes for transferring a Distributed Energy Resource and its Installed Capacity to another Aggregation are located in the ISO Procedures.

An individual resource within an Aggregation and/or an Aggregation may only change from a homogenous Aggregation that is not a DER Aggregation to a DER Aggregation at the beginning of a Capability Year, provided that the Aggregation notifies the ISO by August 1 of the year prior to the beginning of the Capability Year. An individual resource within an Aggregation and/or an Aggregation may only change from a DER Aggregation to a homogeneous Aggregation that is not a DER Aggregation at the beginning of a Capability Year, provided that the Aggregation notifies the ISO by August 1 of the year prior to the beginning of the Capability Year.  If the composition of a homogeneous Aggregation that is not a DER Aggregation changes during a Capability Year such that the homogeneous Aggregation that is not a DER Aggregation would no longer qualify as a homogeneous Aggregation that is not a DER Aggregation, the homogeneous Aggregation that is not a DER Aggregation will maintain the qualifications as a homogeneous Aggregation that is not a DER Aggregation for the remainder of the Capability Year, and, it will have to elect (i) a different Aggregation by August 1, (ii) to participate in the ISO Administered Markets as a Generator, if qualified, or (iii) to leave the ISO Administered Markets for the following Capability Year.  If the composition of a DER Aggregation changes during a Capability Year such that the DER Aggregation would no longer qualify as a DER Aggregation, the DER Aggregation will maintain the qualifications as a DER Aggregation for the remainder of the Capability Year, and, it will have to elect (i) a different Aggregation by August 1, (ii) to participate in the ISO Administered Markets as a Generator, if qualified, or (iii) to leave the ISO Administered Markets for the following Capability Year.  An individual Distributed Energy Resource seeking to participate in the ISO-administered Installed Capacity auctions that has previously acted as a retail load modifier may only register as an Installed Capacity Supplier for the upcoming Capability Year, provided that Resource notified the ISO of its intention to become an Installed Capacity Supplier by August 1 of the year prior to the start of the Capability Year and provided the output data in accordance with ISO Procedures.

**5.12.13.2   Time-stacking Resources in an Aggregation**

An Aggregator may sequentially stack individual Distributed Energy Resources within an Aggregation in order to meet the Energy Duration Limitations specified in Section 5.12.14.  In addition to the requirements and obligations described in this section 5.12.13, the following rules apply to an Aggregation that seeks to sequentially stack individual Distributed Energy Resources:

5.12.13.2.1 each individual Distributed Energy Resource must be able to provide Energy for a minimum of one 1-hour block each day;

5.12.13.2.2 individual Distributed Energy Resources duration will be rounded-down to the nearest hour and stacked in whole-hour increments;

5.12.13.2.3 Time-stacked Aggregations will be qualified for the amount of Capacity it can sustain over the run-time requirement; and

The specific processes related to time-stacking Distributed Energy Resources in an Aggregation are located in the ISO Procedures.

**5.12.14 Energy Duration Limitations, Duration Adjustment Factors, and Capacity Accreditation Factors for Installed Capacity Suppliers**

Starting with the Capability Year that begins on May 1, 2021, Resources with a limited run-time that meet the Energy Duration Limitations identified in the tables below may qualify to participate as Installed Capacity Suppliers.  Resources with a limited run-time must elect an Energy Duration Limitation that is less than or equal to the Resource's ability to demonstrate sustained output at its qualified MW amount.  Resources that do not have an Energy Duration Limitation will have a Duration Adjustment Factor of 100%.  The Adjusted Installed Capacity for an Installed Capacity Supplier shall be calculated using the applicable Energy Duration Limitations and Duration Adjustment Factors, and in accordance with ISO Procedures, starting with the 2021/2022 Capability Year, as determined by the MW count of incremental penetration of Resources with Energy Duration Limitations as listed below:

Table 1:

| Incremental Penetration of Resources with Energy Duration Limitations is less than 1000 MW | |
|---|---|
| Energy Duration Limitations (hours) | Duration Adjustment Factor (%) |
| 8 | 100 |
| 6 | 100 |
| 4 | 90 |
| 2 | 45 |

Table 2:

| Incremental Penetration of Resources with Energy Duration Limitations 1000 MW and above | |
|---|---|
| Energy Duration Limitations (hours) | Duration Adjustment Factor (%) |
| 8 | 100 |
| 6 | 90 |
| 4 | 75 |
| 2 | 37.5 |

While Table 1 is in effect, Resources with an Energy Duration Limitation of 6 hours or less must fulfill the availability requirements given in Section 5.12.7 for a 6-hour Peak Load Window. While Table 2 is in effect, Resources with an Energy Duration Limitation of 6 hours or less must fulfill the availability requirements given in Section 5.12.7 for an 8-hour Peak Load Window. Resources with an Energy Duration Limitation of 8 hours must always fulfill the availability requirements given in Section 5.12.7 for an 8-hour Peak Load Window. The 6 hour Peak Load Window for the Summer Capability Period is HB 13 through HB 18, and the 6 hour Peak Load Window for the Winter Capability Period is HB 16 through HB 21. The 8 hour Peak

Load Window for the Summer Capability Period is HB 12 through HB 19, and the 8 hour Peak Load Window for the Winter Capability Period is HB 14 through HB 21.

Starting with the Capability Year that begins in May 2024, ICAP Suppliers will have their Adjusted ICAP calculated pursuant to Section 5.12.14.2 using the applicable Capacity Accreditation Factor. Resources with a limited run-time must elect an Energy Duration Limitation that is less than or equal to the Resource's ability to demonstrate sustained output at its qualified MW amount and will use the corresponding Capacity Accreditation Factor.

Resources with an Energy Duration Limitation must fulfill the availability requirements given in Section 5.12.7 for the duration of the Peak Load Window.

#### 5.12.14.1 Counting Incremental Penetration of Resources with Energy Duration Limitations

The penetration levels of CRIS MW will be the sum of CRIS for Resources with Energy Duration Limitations that have elected to participate in ISO Administered Markets with less than 8 hour duration and that have entered into service after January 1, 2019 and incremental CRIS awarded after January 1, 2019 to Resources with Energy Duration Limitations that have elected to participate in ISO Administered Markets with less than 8 hour duration as specified below.

Penetration levels of CRIS MW for Resources with Energy Duration Limitations will be calculated in accordance with ISO Procedures as the sum of CRIS for Resources with Energy Duration Limitations of 2 hours, CRIS for Resources with Energy Duration Limitations of 4 hours and CRIS for Resources with Energy Duration Limitations of 6 hours that have entered into service and have participated in the ISO Markets after January 1, 2019. Penetration levels of Demand Side Resources will be calculated as the sum of the Demand Side Resource MW that have elected to participate in the ISO Capacity markets with less than 8 hour duration as of July 1, as pursuant to ISO Procedures. The MW count of Resources with Energy Duration

Limitations that were in service prior to January 1, 2019 and have Retired will include CRIS for Resources with Energy Duration Limitations of 2 hours, CRIS for Resources with Energy Duration Limitations of 4 hours and CRIS for Resources with Energy Duration Limitations of 6 hours that have Retired as of July 1 each year, pursuant to ISO Procedures. Resources that obtained CRIS and were in service prior to January 1, 2019 that qualify as Resources with Energy Duration Limitations at a later date will not be included in the penetration levels of Resources with Energy Duration Limitations.

The MW count of incremental penetration of Resources with Energy Duration Limitations used to determine the applicable Duration Adjustment Factors provided in Section 5.12.14 for the upcoming Capability Year will be calculated in accordance with ISO Procedures as the sum of the penetration levels of CRIS MW, as described above, and penetration levels of Demand Side Resources, as described above, less the sum of CRIS MW for Resources with Energy Duration Limitations that have Retired, as described above, and less 1309.1 MW of SCR MW. The MW count of incremental penetration of Resources with Energy Duration Limitations with their Energy Duration Limitation election will be counted as of July 1 and posted by July 15. Once there are 1000 MW or more incremental penetration of Resources with Energy Duration Limitations, the Duration Adjustment Factors listed in Table 2 provided above in Section 5.12.14 will be effective May 1 of the following Capability Year and Table 2 will be effective notwithstanding future MW count of incremental penetration of Resources with Energy Duration Limitations.

#### 5.12.14.2 Adjusted Installed Capacity

Starting with the Capability Year beginning May 1, 2021 and continuing until the Capability Year that begins in May 2024, a Resource’s Unforced Capacity shall reflect the applicable Duration Adjustment Factor for the Resource's elected Energy Duration Limitation. The Adjusted Installed Capacity is equal to a Resource's Installed Capacity multiplied by the Duration Adjustment Factor. If a Resource or Aggregation wants to change its duration election it must inform the ISO by August 1 preceding the upcoming Capability Year.

Starting with the Capability Year that begins in May 2024, an ICAP Supplier's Unforced Capacity shall reflect the applicable Capacity Accreditation Factor of its Capacity Accreditation Resource Class. The ICAP Supplier's Adjusted Installed Capacity is equal to its Installed Capacity multiplied by its applicable Capacity Accreditation Factor. If an existing Resource wishes to join an Aggregation, or, if a Resource or Aggregation wishes to elect a different Energy Duration Limitation than its current duration, it must inform the ISO by August 1 preceding the upcoming Capability Year.

#### 5.12.14.3 Periodic Review of Capacity Values Accreditation Factors

Starting with the Capability Year that begins in May 2024 and occurring every year, the ISO shall review the existing Capacity Accreditation Factors established for each Capacity Accreditation Resource Class and assess for the upcoming Capability Year the marginal reliability contributions of each Capacity Accreditation Resource Class toward meeting NYSRC resource adequacy requirements. The annual review shall: (i) use the Installed Reserve Margin/Locational Minimum Installed Capacity Requirement study model that is approved by the NYSRC for the upcoming Capability Year as a starting database, (ii) be performed at the conditions that reflect the expected NYCA system that meets the resource adequacy criterion, (iii) develop Capacity Accreditation Factors for all Capacity Accreditation Resource Classes that reflect the marginal reliability contributions toward meeting NYSRC resource adequacy requirements, and (iv) be performed for Rest of State, G-J Locality (excluding Load Zone J), NYC Locality, and Long Island Locality to the extent there exists an ICAP Supplier or projected ICAP Supplier in the given Capacity Accreditation Resource Classes in the applicable location, as specified in ISO Procedures.

In conjunction with this review, the ISO shall review the Peak Load Window associated with the bidding requirements for Resources with Energy Duration Limitations and modify the Peak Load Window accordingly, pursuant to ISO Procedures.

## 5.14 Installed Capacity Spot Market Auction and Installed Capacity Supplier Deficiencies

### 5.14.1 LSE Participation in the ICAP Spot Market Auction

#### 5.14.1.1 ICAP Spot Market Auction

When the ISO conducts each ICAP Spot Market Auction it will account for all Unforced Capacity that each NYCA LSE has certified for use in the NYCA to meet its NYCA Minimum Unforced Capacity Requirement or Locational Minimum Unforced Capacity Requirement, as applicable, whether purchased through Bilateral Transactions or in prior auctions. The ISO shall receive offers of Unforced Capacity that has not previously been purchased through Bilateral Transactions or in prior auctions from qualified Installed Capacity Suppliers for the ICAP Spot Market Auction. Interim Service Providers that are required to keep their generating unit(s) in service must offer at $0.00/kW-month all of their Unforced Capacity into each ICAP Spot Market Auction conducted for each Obligation Procurement Period associate with a month in which it is to receive compensation under Rate Schedule 8 of the Services Tariff. If an Interim Service Provider that is required to keep its generating unit(s) in service is expressly precluded from offering all or a portion of its UCAP into an ICAP Spot Market Auction because it is obligated to provide capacity pursuant to a bilateral contract that is effective at the time of the ICAP Spot Market Auction, and was executed and effective before the NYISO received a Generator Deactivation Notice the Interim Service Provider (such contract a “Preexisting Capacity Bilateral”), then the Interim Service Provider shall only be required to offer the amount of its Unforced Capacity into that ICAP Spot Market Auction that it is not expressly required to provide pursuant to the terms of the such Preexisting Capacity Bilateral. The quantity of Unforced Capacity an Interim Service Provider that is required to keep its generating unit(s) in service is required to offer in accordance with this paragraph is the “ISP UCAP MW”. The ISO shall also receive offers of

Unforced Capacity from any LSE for any amount of Unforced Capacity that the LSE has in excess of its NYCA Minimum Unforced Capacity Requirement or Locational Minimum Unforced Capacity Requirement, as applicable. Unforced Capacity that will be exported from the New York Control Area during the month for which Unforced Capacity is sold in an ICAP Spot Market Auction shall be certified to the NYISO by the certification deadline for that auction.

The ISO shall conduct an ICAP Spot Market Auction to purchase Unforced Capacity which shall be used by an LSE toward all components of its LSE Unforced Capacity Obligation for each Obligation Procurement Period immediately preceding the start of each Obligation Procurement Period. The exact date of the ICAP Spot Market Auction shall be established in the ISO Procedures. All LSEs shall participate in the ICAP Spot Market Auction. In the ICAP Spot Market Auction, the ISO shall submit monthly bids on behalf of all LSEs at a level per MW determined by the ICAP Demand Curves established in accordance with this Tariff and the ISO Procedures. The ICAP Spot Market Auction will set the LSE Unforced Capacity Obligation for each NYCA LSE in accordance with the ISO Procedures.

The ICAP Spot Market Auction will be conducted and solved simultaneously for Unforced Capacity that may be used by an LSE towards all components of its LSE Unforced Capacity Obligation for that Obligation Procurement Period using the applicable ICAP Demand Curves, as established in accordance with the ISO Procedures. LSEs that are awarded Unforced Capacity in the ICAP Spot Market Auction shall pay to the ISO the Market-Clearing Price of Unforced Capacity determined in the ICAP Spot Market Auction using the applicable ICAP Demand Curve. The ISO shall pay each Installed Capacity Supplier that is selected to provide

Unforced Capacity the Market-Clearing Price determined in the ICAP Spot Market Auction using the ICAP Demand Curve applicable to its offer.

#### 5.14.1.2 Demand Curve and Adjustments

ICAP Demand Curves will be established to determine (a) the locational component of LSE Unforced Capacity Obligations for each Locality (b) the locational component of LSE Unforced Capacity Obligations for any New Capacity Zone, and (c) the total LSE Unforced Capacity Obligations for all LSEs. Beginning with the ICAP Demand Curves applicable for the 2025/2026 Capability Year, ICAP Demand Curves will, in accordance with ISO Procedures, be established for each Capability Period encompassed by a Capability Year.

The ICAP Demand Curves for the 2021/2022 Capability Year shall be established at the following points (in accordance with Section 5.14.1.2.2: (1) the ICAP Demand Curve values for the 2020/2021 Capability Year were determined pursuant to the annual update for such Capability Year; provided, however, that the ICAP Demand Curves for all months covered by the 2020/2021 Winter Capability Period shall be as set forth in Section 5.14.1.2.2.5 of this Tariff; and (2) the ICAP Demand Curve values for the 2022/2023 through 2024/2025 Capability Years will be determined pursuant to the respective annual update for each such Capability Year):

| Capability Year | 5/1/2020 to 4/30/2021 | 5/1/2021 to 4/30/2022 | 5/1/2022 to 4/30/2023 | 5/1/2023 to 6/30/2023 | 7/1/2023 to 4/30/2024 | 5/1/2024 to 4/30/2025 |
|---|---|---|---|---|---|---|
| NYCA | To be posted on the ISO website on or before November 30, 2019* | Max @ $14.01<br>$7.81 @ 100%<br>$0.00 @ 112% | To be posted on the ISO website on or before November 30, 2021 | To be posted on the ISO website on or before November 30, 2022** | Max @ $16.74<br>$8.43 @ 100%<br>$0.00 @ 112% | To be posted on the ISO website on or before November 30, 2023 |
| NYC | To be posted on the ISO website on or before November 30, 2019* | Max @ $26.25<br>$21.28 @ 100% | To be posted on the ISO website on or before November 30, 2021 | To be posted on the ISO website on or before November 30, 2022** | Max @ $30.87<br>$22.42 @ 100% | To be posted on the ISO website on or before November 30, 2023 |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | $0.00 @ 118% | | | $0.00 @ 118% | |
| LI | To be posted on the ISO website on or before November 30, 2019* | Max @ $21.27<br>$17.60 @ 100%<br>$0.00 @ 118% | To be posted on the ISO website on or before November 30, 2021 | To be posted on the ISO website on or before November 30, 2022** | Max @ $25.97<br>$15.48 @ 100%<br>$0.00 @ 118% | To be posted on the ISO website on or before November 30, 2023 |
| G-J | To be posted on the ISO website on or before November 30, 2019* | Max @ $18.94<br>$13.28 @ 100%<br>$0.00 @ 115% | To be posted on the ISO website on or before November 30, 2021 | To be posted on the ISO website on or before November 30, 2022** | Max @ $23.02<br>$12.42 @ 100%<br>$0.00 @ 115% | To be posted on the ISO website on or before November 30, 2023 |
| | NOTE: All dollar figures are in terms of $/kW-month of ICAP and all percentages are in terms of the applicable NYCA Minimum Installed Capacity Requirement and Locational Minimum Installed Capacity Requirement. The defined points describe a line segment with a negative slope that will result in higher values for percentages less than 100% of the NYCA Minimum Installed Capacity Requirement or the Locational Installed Capacity Requirement ("reference point") with the maximum value for each ICAP Demand Curve established at 1.5 times the estimated localized levelized cost per kW-month to develop a new peaking unit in each Locality or in Rest of State, as applicable.<br><br>*Notwithstanding anything to the contrary in the ISO Tariffs and ISO Procedures, the ICAP Demand Curves for all months covered by the 2020/2021 Winter Capability Period shall be as set forth in Section 5.14.1.2.2.5 of this Tariff. The ICAP Demand Curves previously posted on the ISO website for the 2020/2021 Capability Year applied for the previously conducted ICAP Spot Market Auctions for all months covered by the 2020 Summer Capability Period.<br><br>**Notwithstanding anything to the contrary in the ISO Tariffs and ISO Procedures, the ICAP Demand Curves for the 2023/2024 Capability Year posted to the ISO website by November 30, 2022 have been reposted to account for the directives of the May 19, 2023 order issued by FERC in Docket No. ER21-502-005. The revised ICAP Demand Curves for the 2023/2024 Capability Year will first be utilized for the ICAP Spot Market Auction for July 2023. The ICAP Demand Curves previously posted on the ISO website by November 30, 2022 for the 2023/2024 Capability Year applied for the ICAP Spot Market Auctions for May 2023 and June 2023. | | | | | |

In subsequent years, the costs assigned by the ICAP Demand Curves to the NYCA Minimum Installed Capacity Requirement, the Locational Minimum Installed Capacity Requirement, and any Indicative NCZ Minimum Installed Capacity Requirement, will be defined by the results of the independent review conducted pursuant to this section. The ICAP Demand Curves will be translated into Unforced Capacity terms in accordance with the ISO Procedures. Beginning with the 2024/2025 Capability Year, the aforementioned translation shall utilize the applicable derating factor of the peaking plant used to establish each ICAP Demand Curve, as determined during the periodic review conducted pursuant to Section 5.14.1.2.2.

#### 5.14.1.2.1 Periodic Reviews of ICAP Demand Curves Applicable Prior to the 2017/2018 Capability Year

For ICAP Demand Curves applicable prior to the 2017/2018 Capability Year, a periodic review of the ICAP Demand Curves shall be performed every three (3) years in accordance with the ISO Procedures to determine the parameters of the ICAP Demand Curves for the next three Capability Years. The periodic review shall assess: (i) the current localized levelized embedded cost of a peaking plant in each NYCA Locality, the Rest of State, and any New Capacity Zone, to meet minimum capacity requirements, and (ii) the likely projected annual Energy and Ancillary Services revenues of the peaking plant over the period covered by the adjusted ICAP Demand Curves, net of the costs of producing such Energy and Ancillary Services. The cost and revenues of the peaking plant used to set the reference point and maximum value for each ICAP Demand Curve shall be determined under conditions in which the available capacity is equal to the sum of (a) the minimum Installed Capacity requirement and (b) the peaking plant's capacity equal to the number of MW specified in the periodic review and used to determine all costs and revenues. The minimum Installed Capacity requirement for each Locality shall be equal to the Locational Minimum Installed Capacity Requirement in effect for the year in which the independent consultant's final report (referenced below in Section 5.14.1.2.1.6) is issued; for the NYCA, equal to the NYCA Minimum Installed Capacity Requirement based on the Installed Reserve Margin accepted by the Commission and applicable to the Capability Year which begins in the Capability Year in which the independent consultant's final report is issued; and for any New Capacity Zone, equal to the Indicative NCZ Locational Minimum Installed Capacity Requirement determined by the ISO in accordance with Section 5.16.3. The periodic review shall also assess (i) the appropriate shape and slope of the ICAP Demand Curves, and the associated point at which the dollar value of the ICAP Demand Curves should decline to zero; (ii) the appropriate translation of the annual net revenue requirement of the peaking plant determined from the factors specified above, into monthly values that take into account seasonal differences in the amount of capacity available in the ICAP Spot Market Auctions; and (iii) the escalation factor and inflation component of the escalation factor applied to the ICAP Demand Curves. For purposes of this periodic review, a peaking unit is defined as the unit with technology that results in the lowest fixed costs and highest variable costs among all other units' technology that are economically viable, and a peaking plant is defined as the number of units (whether one or more) that constitute the scale identified in the periodic review.

The periodic review shall be conducted in accordance with the schedule and procedures specified in the ISO Procedures. A proposed schedule will be reviewed with the stakeholders not later than May 30 of the year prior to the year of the filing specified in Section 5.14.1.2.1.11. The schedule and procedures shall provide for:

5.14.1.2.1.1 ISO development, with stakeholder review and comment, of a request for proposals to provide independent consulting services to determine recommended values for the factors specified above, and appropriate methodologies for such determination;

5.14.1.2.1.2 Selection of an independent consultant in accordance with the request for proposals;

5.14.1.2.1.3 Submission to the ISO and the stakeholders of a draft report from the independent consultant on the independent consultant's determination of recommended values for the factors specified above;

5.14.1.2.1.4 Stakeholder review of and comment on the data, assumptions and conclusions in the independent consultant's draft report, with participation by the responsible person or persons providing the consulting services;

5.14.1.2.1.5 An opportunity for the Market Monitoring Unit to review and comment on the draft request for proposals, the independent consultant's report, and-the ISO's proposed ICAP Demand Curves (the responsibilities of the Market Monitoring Unit that are addressed in this section of the Services Tariff are also addressed in Section 30.4.6.3.1 of Attachment O);

5.14.1.2.1.6 Issuance by the independent consultant of a final report;

5.14.1.2.1.7 Issuance of a draft of the ISO's recommended adjustments to the ICAP Demand Curves for stakeholder review and comment;

5.14.1.2.1.8 Issuance of the ISO's proposed ICAP Demand Curves, taking into account the report of the independent consultant, the recommendations of the Market Monitoring Unit, and the views of the stakeholders together with the rationale for accepting or rejecting any such inputs;

5.14.1.2.1.9 Submission of stakeholder requests for the ISO Board of Directors to review and adjust the ISO's proposed ICAP Demand Curves;

5.14.1.2.1.10 Presentations to the ISO Board of Directors of stakeholder views on the ISO's proposed ICAP Demand Curves; and

5.14.1.2.1.11 Filing with the Commission of ICAP Demand Curves as approved by the ISO Board of Directors incorporating the results of the periodic review, such filing to be made not later than November 30 of the year prior to the year that includes the beginning of the first Capability Year to which such ICAP Demand

Curves would be applied. The filing shall specify ICAP Demand Curves for a period of three Capability Years and the inflation rate component of the escalation factor applied to the ICAP Demand Curves.

Upon FERC approval, the ICAP Demand Curves will be translated into Unforced Capacity terms in accordance with the ISO Procedures; provided that nothing in this Tariff shall be construed to limit the ability of the ISO or its Market Participants to propose and adopt alternative provisions to this Tariff through established governance procedures.

**5.14.1.2.2 Periodic Reviews of ICAP Demand Curves Applicable Beginning with the 2017/2018 Capability Year**

Beginning with the ICAP Demand Curves applicable for the 2017/2018 Capability Year, a periodic review of the ICAP Demand Curves shall be performed every four (4) years in accordance with the ISO Procedures to: (i) identify the methodologies and inputs used for determining the ICAP Demand Curves for the four Capability Years covered by the periodic review; and (ii) establish the ICAP Demand Curves for the first Capability Year covered by the periodic review.

The periodic review shall assess: (i) the current localized levelized embedded cost of a peaking plant in each NYCA Locality, the Rest of State, and any New Capacity Zone, to meet minimum capacity requirements (for purposes of this Section 5.14.1.2.2 hereinafter referred to as the "peaking plant gross cost"); and (ii) the likely projected annual Energy and Ancillary Services revenues of the peaking plant for the first Capability Year covered by the periodic review, net of the costs of producing such Energy and Ancillary Services (for purposes of this Section 5.14.1.2.2 hereinafter referred to as the "net Energy and Ancillary Services revenue offset"), including the methodology and inputs for determining such projections for the four Capability Years covered by the periodic review.

The cost and revenues of the peaking plant used to set the reference point and maximum value for each ICAP Demand Curve shall be determined under conditions in which the available capacity is equal to the sum of (a) the minimum Installed Capacity requirement and (b) the peaking plant's capacity equal to the number of MW specified in the periodic review and used to determine all costs and revenues (for purposes of this Section 5.14.1.2.2 hereinafter referred to as the "prescribed level of excess"). The minimum Installed Capacity requirement for each Locality shall be equal to the Locational Minimum Installed Capacity Requirement in effect for the year in which the independent consultant's final report (referenced below in Section 5.14.1.2.2.4.6) is issued; for the NYCA, equal to the NYCA Minimum Installed Capacity Requirement based on the Installed Reserve Margin accepted by the Commission and applicable to the Capability Year which begins in the Capability Year in which the independent consultant's final report is issued; and for any New Capacity Zone, equal to the Indicative NCZ Locational Minimum Installed Capacity Requirement determined by the NYISO in accordance with Section 5.16.3.

Beginning with the ICAP Demand Curves applicable for 2025/2026 Capability Year, the determination of the reference point and maximum value for each ICAP Demand Curve for a given Capability Year shall account for conditions reflecting the prescribed level of excess and seasonal differences in the amount of capacity available in ICAP Spot Market Auctions. For a given Capability Year, the Capability Period in which more capacity is expected to be available in the ICAP Spot Market Auctions due to seasonal differences in availability shall utilize conditions that account for the prescribed level of excess and the additional capacity available due to such seasonal differences, while the Capability Period in which less capacity is expected to be available in the ICAP Spot Market Auctions due to seasonal differences in availability shall utilize conditions that account for only the prescribed level of excess (for purposes of this Section 5.14.1.2.2 hereinafter referred to as the "reference point assumed excess conditions").

The periodic review shall also assess (i) the appropriate shape and slope of the ICAP Demand Curves, and the associated point at which the dollar value of the ICAP Demand Curves should decline to zero; (ii) the appropriate translation of the annual net revenue requirement of the peaking plant determined from the factors specified above, into monthly values that take into account seasonal differences in the amount of capacity available in the ICAP Spot Market Auctions in accordance with the methodology set forth in Section 5.14.1.2.2.3; and (iii) the escalation factor and inflation component of the escalation factor applied to the peaking plant gross cost, including the methodology and inputs for determining such values.

Beginning with the ICAP Demand Curves applicable for 2025/2026 Capability Year, the translation of the annual net revenue requirement of each applicable peaking plant into monthly values, in accordance with ISO Procedures, shall result in the determination of ICAP Demand Curves for each Capability Period encompassed by the Capability Year for which such ICAP Demand Curves will be in effect. The translation of the annual net revenue requirement of each peaking plant into monthly values shall also account for seasonal reliability risks in determining the portion of the annual net revenue requirement to be recovered during each Capability Period under the reference point assumed excess conditions. In accordance with ISO Procedures, seasonal reliability risks shall be accounted for based on the percentage of loss of load risk attributed to each Capability Period as identified in the results produced by the preliminary base case model approved by the NYSRC for determining the NYCA Installed Reserve Margin applicable to the Capability Year for which the applicable ICAP Demand Curves will be in effect. The translation of each annual net revenue requirement into monthly values shall also be subject to maximum and minimum percentages of the allowable portion of the annual net revenue requirement recoverable in each Capability Period under the reference point assumed excess conditions. The applicable maximum and minimum allowable percentage values shall initially be set at 65 percent and 35 percent, respectively. Beginning with the periodic review that includes establishment of the ICAP Demand Curves applicable for the 2029/2030 Capability Year, each periodic review shall assess such maximum and minimum allowable percentage values. Any adjustments to the maximum and minimum allowable percentage values shall be identified in the filing referenced in Section 5.14.1.2.2.4.11 below and remain fixed for the entire period covered by the applicable periodic review.

For purposes of this periodic review, a peaking unit is defined as the unit with technology that results in the lowest fixed costs and highest variable costs among all other units' technology that are economically viable, and a peaking plant is defined as the number of units (whether one or more) that constitute the scale identified in the periodic review.

In the filing referenced in Section 5.14.1.2.2.4.11 below, the ISO will: (i) identify the methodologies and inputs used for determining the ICAP Demand Curves for the four Capability Years covered by the periodic review; and (ii) propose the ICAP Demand Curves for the first Capability Year covered by the periodic review. Except as it relates to the ICAP Demand Curves set forth in Section 5.14.1.2.2.5 that are applicable for all months covered by the 2020/2021 Winter Capability Period, for the subsequent three Capability Years covered by the periodic review, the ISO will establish the ICAP Demand Curves for each such Capability Year by updating the following factors in advance of each such subsequent Capability Year: (i) the peaking plant gross cost in accordance with Section 5.14.1.2.2.1; (ii) the net Energy and Ancillary Services revenue offset in accordance with Section 5.14.1.2.2.2; (iii) the seasonal amount of capacity available in ICAP Spot Market Auctions in accordance with Section 5.14.1.2.2.3; and (iv) beginning with the ICAP Demand Curves applicable for the 2025/2026 Capability Year, the percentage of reliability risk expected in each Capability Period as described above. Except as it relates to the ICAP Demand Curves set forth in Section 5.14.1.2.2.5 that are applicable for all months covered by the 2020/2021 Winter Capability Period, the ISO will post the updated ICAP Demand Curves for each subsequent Capability Year covered by the periodic review on or before November 30th of the calendar year immediately preceding the calendar year that includes the start of the Capability Year for which the updated ICAP Demand Curves will apply.

**5.14.1.2.2.1 Annual Updates for Peaking Plant Gross Cost**

For purposes of the annual updates to the ICAP Demand Curves, the ISO shall determine updated values for the peaking plant gross cost for each peaking plant. Updated values for the peaking plant gross cost shall be determined by application of an escalation factor to the peaking plant gross cost values underlying the ICAP Demand Curves for the first Capability Year covered by the periodic review. The escalation factor shall consist of the following four components: (i) changes in construction material costs ("materials component"); (ii) changes in turbine generator costs ("turbine component"); (iii) changes in labor costs ("labor component"); and (iv) changes in the general cost of goods and services ("general component"). The escalation factor shall be equal to the sum of the: (i) the percentage change in the applicable index for the materials component, multiplied by the applicable weighting factor for such component; (ii) the percentage change in the applicable index for the turbine component, multiplied by the applicable weighting factor for such component; (iii) the percentage change in the applicable index for the labor component, multiplied by the applicable weighting factor for such component; and (iv) the percentage change in the applicable index for the general component, multiplied by the applicable weighting factor for such component. For purposes of determining the percentage change for each component, the values utilized from each applicable index shall be as follows: (i) for indices that publish annual values, the most recently available annual value and the corresponding annual value for the calendar year that contained the most recently available finalized values established by the publisher for the applicable index as of October 1st in the same calendar year as the filing required by Section 5.14.1.2.2.4.11 ("baseline period"); (ii) for indices that publish monthly values, the average value of the three most recently available monthly values and the average value of values for the same three months from the baseline period; and (iii) for indices that publish quarterly values, the value of the most recently available calendar quarter and the value for the same calendar quarter from the baseline period. The applicable values to be used by the ISO shall be the available finalized values established by the publisher for each index as of October 1st of the same calendar year as the applicable November 30th deadline for posting the updated ICAP Demand Curves. The ISO shall not use any preliminary values published by an index in determining the applicable percentage change for any component of the escalation factor. The weighting factors applied to each component shall be determined as part of the periodic review, identified in the filing required by Section 5.14.1.2.2.4.11 and remain fixed for the entire period covered by the periodic review. The specified index for each component shall likewise be determined as part of the periodic review, identified in the filing required by Section 5.14.1.2.2.4.11 and remain fixed for the entire period covered by the periodic review, unless an index is eliminated, replaced or otherwise terminated by the publisher thereof during the period covered by the periodic review. In such circumstance, the ISO shall utilize the replacement or successor index established by the publisher, if any, or, in the absence of a replacement or successor index, shall select as a replacement a substantially similar index.

#### 5.14.1.2.2.2 Annual Updates for Net Energy and Ancillary Revenue Offset

For purposes of the annual updates to the ICAP Demand Curves, the ISO shall also determine updated values for the net Energy and Ancillary Services revenue offset associated with each peaking plant. Updated values for the net Energy and Ancillary Services revenue offset shall, in part, be determined using a net revenue model that will be developed as part of the periodic review and made available to stakeholders. The model will, at a minimum, determine whether each peaking plant could earn positive net revenue by producing Energy in each hour based on historical prices and the variable costs for each peaking plant over the prior 36 month period ending August 31st of the same calendar year as the applicable November 30th deadline for posting the updated ICAP Demand Curves, as well as the physical operating characteristics of each peaking plant and any operating hours constraints necessary to address any applicable environmental requirements and/or fuel availability. The commitment and dispatch logic and data sources and/or inputs used by the model, as well as the manner in which the model accounts for net Ancillary Services revenues earned by each peaking plant, the physical operating characteristics of each peaking plant and any operating hours constraints applicable to each peaking plant that are necessary to address any applicable environmental requirements and/or fuel availability, will be determined as part of the periodic review, identified in the filing required by Section 5.14.1.2.2.4.11 and remain fixed for the entire period covered by the periodic review, subject to annual updating of certain data inputs used by the model as described herein.

The model will determine whether each peaking plant could earn positive net revenue by producing Energy in each hour of the period encompassed by the model in a manner consistent with the following equation:

$$Net\ Energy\ revenue_{z,t} = max(([Output_{z,t} * (LOE_{z,t} * LBMP_{z,t})] – MC_{z,t}),0)$$

where:

$Ouput_{z,t}$ = the quantity of Energy produced by the peaking plant for Load Zone *z* in hour *t*;

$LOE_{z,t}$ = the applicable adjustment factor for Load Zone *z* and hour *t* used to adjust for the prescribed level of excess. The adjustment factors shall be determined as part of the periodic review, identified in the filing required by Section 5.14.1.2.2.4.11 and remain fixed for the entire period covered by the periodic review;

$LBMP_{z,t}$ = the Day-Ahead zonal LBMP or time-weighted/integrated zonal RTD LBMP, as applicable, for Load Zone *z* and hour *t*;

$MC_{z,t}$ = variable (or short-run marginal) cost of the peaking plant for Load Zone *z* to produce Energy in hour *t*, calculated as follows:

$$MC_{z,t} = [(HR_{z,t} * Fuel_{z,t}) + VOM_{z,t} + ASC_{z,t} + EC_{z,t} + RS1_{z,t}] * Output_{z,t}$$

where:

$HR_{z,t}$ = the heat rate of the peaking plant for Load Zone *z* and hour *t*. The heat rate for the peaking plant shall be determined as part of the periodic review, identified in the filing required by Section 5.14.1.2.2.4.11 and remain fixed for the entire period covered by the periodic review;

$Fuel_{z,t}$ = the applicable fuel cost for the peaking plant for Load Zone *z* and hour *t*, which shall be the lesser of the primary fuel cost and the backup fuel cost, if any, for the peaking plant for Load Zone *z*. The primary fuel and any backup fuel for the peaking plant for Load Zone *z* shall be determined as part of the periodic review, identified in the filing required by Section

5.14.1.2.2.4.11 and remain fixed for the entire period covered by the periodic review. The applicable fuel cost will be based on the applicable daily spot price for Load Zone *z* published in the specified data source determined as part of the periodic review (unless such data source is revised for the reasons described below), plus an adder to account for any applicable transportation and delivery costs and any applicable fuel taxes, which adder shall be determined as part of the periodic review, identified in the filing required by Section 5.14.1.2.2.4.11 and remain fixed for the entire period covered by the periodic review. For real-time evaluations only, the otherwise applicable fuel cost shall be increased by the applicable real-time fuel premium adder for Load Zone *z* and hour *t*, which adder shall be determined as part of the periodic review, identified in the filing required by Section 5.14.1.2.2.4.11 and remain fixed for the entire period covered by the periodic review. The data sources used for determining the applicable daily spot fuel prices shall be determined as part of the periodic review, identified in the filing required by Section 5.14.1.2.2.4.11 and remain fixed for the entire period covered by the periodic review, unless the specified data source is eliminated, replaced or otherwise terminated by the publisher thereof during the period covered by the periodic review. In such circumstance, the ISO shall utilize the replacement or successor data source established by the publisher, if any, or, in the absence of a replacement or successor data source, shall select as a replacement a substantially similar data source;

$VOM_{z,t}$ = variable operating and maintenance cost of the peaking plant for Load Zone *z* and hour *t*, which cost shall be determined as part of the periodic review, identified in the filing required by Section 5.14.1.2.2.4.11 and remain fixed for the entire period covered by the periodic review;

$ASC_{z,t}$ = amortized start-up cost for the peaking plant for Load Zone *z* and hour *t*. The model will ensure that the total value of this cost is recovered over the number of consecutive hours for which the model determines that the peaking plant should be committed or dispatched to produce Energy following each start of the peaking plant in the same market (Day-Ahead or real-time); provided, however, that in real-time, start-up costs must be recovered over a period of no more than two consecutive hours following the time at which the model determines that the peaking plant should be dispatched to produce Energy;

$EC_{z,t}$ = the sum of $CO_2$, $NO_x$ and $SO_2$ emissions allowance costs for the peaking plant for Load Zone *z* and hour *t*, which shall be calculated as follows:

$$EC_{z,t} = (CO_2 \text{ emissions rate}_{z,t} * CO_2 \text{ allowance price}_{z,t}) + (NO_x \text{ emissions rate}_{z,t} * NO_x \text{ allowance price}_{z,t}) + (SO_2 \text{ emissions rate}_{z,t} * SO_2 \text{ allowance price}_{z,t})$$

where:

The applicable emissions rates for the peaking plant for Load Zone *z* and hour *t* shall be determined as part of the periodic review, identified in the filing required by Section 5.14.1.2.2.4.11 and remain fixed for the entire period covered by the periodic review. The applicable allowance price for each emissions type shall be the price reported by the specified data source for each emissions type determined as part of the periodic review (unless such data source is revised for the reasons described below). The data sources for allowance prices shall be determined as part of the periodic review, identified in the filing required by Section 5.14.1.2.2.4.11 and remain fixed for the entire period covered by the periodic review, unless a specified data source is eliminated, replaced or otherwise terminated by the publisher thereof during the period covered by the periodic review. In such circumstance, the ISO shall utilize the replacement or successor data source established by the publisher, if any, or, in the absence of a replacement or successor data source, shall select as a replacement a substantially similar data source; and

$RS1_{z,t}$ = the applicable charges for the ISO annual budget and the annual FERC fee assessed to Injection Billing Units for Load Zone *z* and hour *t* in accordance with Rate Schedule 1 of the ISO OATT.

The results of the model will be used to determine an average annual net revenue value earned by each peaking plant over the period encompassed by the model. Such value will be increased by an adder to account for the estimated annual value of any applicable net Ancillary Services revenue for each peaking plant that is not determined by the model, which adder shall be determined as part of the periodic review, identified in the filing required by Section 5.14.1.2.2.4.11 and remain fixed for the entire period covered by the periodic review. The resulting value for each peaking plant shall be the updated net Energy and Ancillary Services revenue offset value to be used in establishing the ICAP Demand Curves for the applicable Capability Year.

**5.14.1.2.2.3 Annual Updates for ICAP Demand Curve Parameters**

The ISO shall use the updated peaking plant gross cost and the updated net Energy and Ancillary Services revenue offset values in determining the parameters of the ICAP Demand Curves for the applicable Capability Year.

The maximum value for each ICAP Demand Curve shall be established at 1.5 times the monthly value of the applicable updated peaking plant gross cost. Beginning with the ICAP Demand Curves applicable for the 2025/2026 Capability Year, the monthly value of the applicable updated peaking plant gross cost shall, in accordance with ISO Procedures, be determined in a manner consistent with the determination of the reference point for each ICAP Demand Curve to account for: (i) the seasonal amount of capacity available in ICAP Spot Market Auctions; and (ii) the percentage of reliability risks expected in each Capability Period.

The reference point for each ICAP Demand Curve shall be determined in accordance with ISO Procedures and, as described in Section 5.14.1.2.2 above, account for: (i) the seasonal amount of capacity available in ICAP Spot Market Auctions; and (ii) beginning with the ICAP Demand Curves applicable for the 2025/2026 Capability Year, the percentage of reliability risk expected in each Capability Period. As described in Section 5.14.1.2.2 above, beginning with the ICAP Demand Curves applicable for the 2025/2026 Capability Year, the determination of the reference point for each ICAP Demand Curves shall be subject to maximum and minimum percentages of the allowable portion of the annual net revenue requirement recoverable in each Capability Period under the reference point assumed excess conditions.

Prior to the ICAP Demand Curves applicable for the 2025/2026 Capability Year, the ratio of the amount of capacity available in the ICAP Spot Market Auctions in the Winter Capability Period to the amount of capacity available in the ICAP Spot Market Auctions in the Summer Capability Period (the “winter-to-summer ratio”) shall be used in calculating the reference point for each ICAP Demand Curve.

Beginning with the ICAP Demand Curves applicable for the 2025/2026 Capability Year: (i) the winter-to-summer ratio shall be used in calculating the reference point for each ICAP Demand Curve applicable for the Winter Capability Period; and (ii) the ratio of the amount of capacity available in the ICAP Spot Market Auctions in the Summer Capability Period to the amount of capacity available in the ICAP Spot Market Auctions in the Winter Capability Period (the “summer-to-winter ratio”) shall be used in calculating the reference point for each ICAP Demand Curve applicable for the Summer Capability Period; provided, however, that if a winter-to-summer ratio or the summer-to-winter ratio is a value less than one, the value shall be deemed to be zero for purposes of determining the applicable reference point.

The seasonal amount of capacity available in ICAP Spot Market Auctions shall be updated annually based on the average amount of capacity available in the ICAP Spot Market Auctions for the Summer Capability Period months and Winter Capability Period months in each 12-month period (measured from September through the following August) encompassed by the same historical period utilized by the net revenue model. The values used in determining the amount of capacity available in the ICAP Spot Market Auctions shall be the available Unforced Capacity values reported by the ISO and posted on its website for the relevant months, translated to Installed Capacity values based on the applicable translation factors reported by the ISO and posted on its website for each such month. For Resources other than Special Case Resources, the values posted by the ISO shall include the following adjustments to account for ICAP market entry and exit under certain circumstances: (i) if within any of the three 12-month periods (*i.e.*, September through the following August) encompassed by the data used in calculating the amount of capacity available in ICAP Spot Market Auctions, a Resource (other than a Resource returning to participate in the ICAP market from an Inactive Reserves state) begins to qualify as eligible to participate in the ICAP market in any month encompassed by such 12-month period and remains eligible to participate in the ICAP market for the subsequent months encompassed by that period, the ISO shall adjust the values for all months of that 12-month period to include the Resource's applicable available capacity; and (ii) if within any of the three 12-month periods (*i.e.*, September through the following August) encompassed by the data used in calculating the amount of capacity available in ICAP Spot Market Auctions, a Resource is Retired or enters a Mothball Outage or ICAP Ineligible Forced Outage state during any month encompassed by such 12-month period and remains ineligible to participate in the ICAP market for the subsequent months encompassed by that period, the ISO shall adjust the values for all months of that 12-month period to exclude the Resource's applicable available capacity.

The applicable capacity ratings for each peaking plant utilized in calculating the reference point and the point on each ICAP Demand Curve at which the price of ICAP declines to zero shall be determined as part of the periodic review and shall remain fixed for the entire period covered by the periodic review.

Notwithstanding anything to the contrary herein, for purposes of the annual updates for the 2018/2019, 2019/2020 and 2020/2021 Capability Years, the reference point for each ICAP Demand Curve shall not be permitted to increase by an amount greater than twelve percent (12%) or decrease by an amount greater than eight percent (8%) from one Capability Year to the next, compared to the then currently effective reference point for the relevant ICAP Demand Curve. If the reference point value for an ICAP Demand Curve, as calculated by the ISO pursuant to the annual update procedures, for one of the affected Capability Years exceeds the maximum allowable percentage increase or decrease, the reference point established by the ISO for that ICAP Demand Curve for the relevant Capability Year shall be an amount equal to the price that represents the applicable maximum allowable percentage increase or decrease. If an adjusted reference point value is applied to an ICAP Demand Curve for a Capability Year, the maximum allowable percentage increase or decrease for the next Capability Year shall be determined using the adjusted reference point value. As part of the required posting to establish the updated ICAP Demand Curves for each of the affected Capability Years, the ISO will provide the reference point values calculated by the ISO pursuant to the annual update procedures, as well the adjusted reference point values, if any, that result from the application of the limitation described herein. The limitation described above regarding the allowable annual change to the reference point values calculated by the ISO pursuant to the annual update procedures shall not be applied to the reference point values for any ICAP Demand Curve after the 2020/2021 Capability Year.

The peaking plant gross cost and net Energy and Ancillary Services revenue offset values for the 2021/2022 Capability Year ICAP Demand Curves utilized in determining the parameters of the ICAP Demand Curves applicable through June 30, 2023 are as follows:

| | Peaking Plant Gross Cost<br>($ per kW-year) | Net Energy and Ancillary Services Revenue Offset<br>($ per kW-year) |
|---|---|---|
| NYCA | $107.07 | $32.92 |
| G-J | $139.63 | $35.15 |
| NYC | $188.53 | $33.42 |
| LI | $148.97 | $54.15 |

The peaking plant gross cost and net Energy and Ancillary Services revenue offset values for the 2021/2022 Capability Year ICAP Demand Curves utilized in determining the parameters of the ICAP Demand Curves applicable beginning July 1, 2023 are as follows:

| | Peaking Plant Gross Cost<br>($ per kW-year) | Net Energy and Ancillary Services Revenue Offset<br>($ per kW-year) |
|---|---|---|
| NYCA | $114.75 | $32.92 |
| G-J | $149.78 | $35.15 |
| NYC | $196.41 | $33.42 |
| LI | $159.77 | $54.15 |

**5.14.1.2.2.4 Periodic Review Procedures**

The periodic review shall be conducted in accordance with the schedule and procedures specified in the ISO Procedures. A proposed schedule will be reviewed with the stakeholders not later than May 30th of the year prior to the year of the filing specified in Section 5.14.1.2(b).11. The schedule and procedures shall provide for:

5.14.1.2.2.4.1 ISO development, with stakeholder review and comment, of a request for proposals to provide independent consulting services to determine recommended values for the factors specified above, and appropriate methodologies and inputs for such determination;

5.14.1.2.2.4.2 Selection of an independent consultant in accordance with the request for proposals;

5.14.1.2.2.4.3 Submission to the ISO and the stakeholders of a draft report from the independent consultant on the independent consultant's determination of recommended values for the factors specified above, including, as applicable, the methodologies and inputs for determining such values;

5.14.1.2.2.4.4 Stakeholder review of and comment on the data, assumptions and conclusions in the independent consultant's draft report, with participation by the responsible person or persons providing the consulting services;

5.14.1.2.2.4.5 An opportunity for the Market Monitoring Unit to review and comment on the draft request for proposals, the independent consultant's report, and the ISO's proposed: (i) methodologies and inputs used for determining the ICAP Demand Curves for the four Capability Years covered by the periodic review; and (ii) ICAP Demand Curves for the first Capability Year covered by the periodic review. The responsibilities of the Market Monitoring Unit that are addressed in this section of the Services Tariff are also addressed in Section 30.4.6.3.1 of Attachment O;

5.14.1.2.2.4.6 Issuance by the independent consultant of a final report;

5.14.1.2.2.4.7 Issuance of a draft of the ISO's recommended: (i) methodologies and inputs used for determining the ICAP Demand Curves for the four Capability Years covered by the periodic review; and (ii) ICAP Demand Curves for the first Capability Year covered by the periodic review, for stakeholder review and comment;

5.14.1.2.2.4.8 Issuance of the ISO's proposed: (i) methodologies and inputs used for determining the ICAP Demand Curves for the four Capability Years covered by the periodic review; and (ii) ICAP Demand Curves for the first Capability Year covered by the periodic review, taking into account the report of the independent consultant, the recommendations of the Market Monitoring Unit, and the views of the stakeholders together with the rationale for accepting or rejecting any such inputs;

5.14.1.2.2.4.9 Submission of stakeholder requests for the ISO Board of Directors to review and adjust the ISO's proposed: (i) methodologies and inputs used for determining the ICAP Demand Curves for the four Capability Years covered by the periodic review; and (ii) ICAP Demand Curves for the first Capability Year covered by the periodic review;

5.14.1.2.2.4.10 Presentations to the ISO Board of Directors of stakeholder views on the ISO's proposed: (i) methodologies and inputs used for determining the ICAP Demand Curves for the four Capability Years covered by the periodic review; and (ii) ICAP Demand Curves for the first Capability Year covered by the periodic review; and

5.14.1.2.2.4.11 Filing with the Commission of: (i) a description of the methodologies and inputs used for determining the ICAP Demand Curves for the four Capability Years covered by the periodic review; and (ii) the ICAP Demand Curves for the first Capability Year covered by the periodic review, as approved by the ISO Board of Directors incorporating the results of the periodic review. Such filing will be made not later than November 30th of the year prior to the year that includes the beginning of the first Capability Year covered by the periodic review. The filing will also specify the inflation rate that would have been used to calculate the general component of the escalation factor as if the escalation factor were applicable to the first Capability Year covered by the periodic review. Such inflation rate shall be equal to the twelve month percentage change in the applicable index for the general component, as determined in accordance with Section 5.14.1.2.2.1 utilizing the applicable values of the index as of October 1st in the same calendar year as the November 30th filing deadline specified above. For each of the subsequent three Capability Years encompassed by the periodic review, the value of this inflation rate shall be the twelve month percentage change in the applicable index for the general component of the escalation factor, as determined pursuant to Section 5.14.1.2.2.1, utilizing the most recently available finalized values established by the publisher for the index as of October 1st in the same calendar year as the applicable November 30th deadline for posting the updated ICAP Demand Curves for the Capability Year at issue and the applicable values for the corresponding period from the calendar year immediately preceding thereto.

The ICAP Demand Curves will be translated into Unforced Capacity terms in accordance with the ISO Procedures.  Beginning with the 2024/2025 Capability Year, the aforementioned translation shall utilize the applicable derating factor of the peaking plant used to establish each ICAP Demand Curve, as determined during the periodic review conducted pursuant to Section 5.14.1.2.2. Nothing in this Tariff shall be construed to limit the ability of the ISO or its Market Participants to propose and adopt alternative provisions to this Tariff through established governance procedures.

#### 5.14.1.2.2.5 ICAP Demand Curves for the 2020/2021 Winter Capability Period

Notwithstanding anything to the contrary in the ISO Tariffs and ISO Procedures, the ICAP Demand Curves applicable for all months covered by the 2020/2021 Winter Capability Period shall be established at the following points:

| ICAP Demand Curve | 2020/2021 Winter Capability Period |
|---|---|
| NYCA | Max @ $16.93<br>$10.96 @ 100%<br>$0.00 @ 112% |
| NYC | Max @ $27.92<br>$23.63 @ 100%<br>$0.00 @ 118% |
| LI | Max @ $26.03<br>$17.93 @ 100%<br>$0.00 @ 118% |
| G-J | Max @ $23.34<br>$18.00 @ 100%<br>$0.00 @ 115% |
| NOTE:  All dollar figures are in terms of $/kW-month of ICAP and all percentages are in terms of the applicable NYCA Minimum Installed Capacity Requirement and Locational Minimum Installed Capacity Requirement.  The defined points describe a line segment with a negative slope that will result in higher values for percentages less than 100% of the NYCA Minimum Installed Capacity Requirement or the Locational Installed Capacity Requirement ("reference point") with the maximum value for each ICAP Demand Curve established at 1.5 times the estimated localized | |

| |
|---|
| levelized cost per kW-month to develop a new peaking unit in each Locality or in Rest of State, as applicable. |

#### 5.14.1.3 Supplemental Supply Fee

Any LSE that has not met its share of the NYCA Minimum Installed Capacity Requirement or its share of the Locational Minimum Installed Capacity Requirement after the completion of an ICAP Spot Market Auction, shall be assessed a supplemental supply fee equal to the applicable Market-Clearing Price of Unforced Capacity determined in the ICAP Spot Market Auction multiplied by the number of MWs the LSE needs to meet its share of the NYCA Minimum Installed Capacity Requirement or its share of the Locational Minimum Installed Capacity Requirement.

The ISO will attempt to use these supplemental supply fees to procure Unforced Capacity at a price less than or equal to the applicable Market-Clearing Price of Unforced Capacity determined in the ICAP Spot Market Auction from Installed Capacity Suppliers that are capable of supplying Unforced Capacity including: (1) Installed Capacity Suppliers that were not qualified to supply Capacity prior to the ICAP Spot Market Auction; (2) Installed Capacity Suppliers that offered Unforced Capacity at levels above the ICAP Spot Market Auction Market-Clearing Price; and (3) Installed Capacity suppliers that did not offer Unforced Capacity in the ICAP Spot Market Auction. In the event that different Installed Capacity Suppliers offer the same price, the ISO will give preference to Installed Capacity Suppliers that were not qualified to supply capacity prior to the ICAP Spot Market Auction.

Offers from Installed Capacity Suppliers are subject to review pursuant to the Market Monitoring Plan that is set forth in Attachment O to the Services Tariff, and the Market Mitigation Measures that are set forth in Attachment H to the Services Tariff. Installed Capacity Suppliers selected by the ISO to provide capacity after the ICAP Spot Market Auction will be paid a negotiated price, subject to the standards, procedures and remedies in the Market Mitigation Measures.

The ISO will not pay an Installed Capacity Supplier more than the applicable Market-Clearing Price of Unforced Capacity determined in the ICAP Spot Market Auction per MW of Unforced Capacity, or, in the case of In-City generation that is subject to Capacity market mitigation measures, the annual mitigated price cap per MW of Unforced Capacity, whichever is less, pro-rated to reflect the portion of the Obligation Procurement Period for which the Installed Capacity Supplier provides Unforced Capacity. Any remaining monies collected by the ISO pursuant to this section will be applied in accordance with Section 5.14.3 of the Services Tariff.

### 5.14.2 Installed Capacity Supplier Shortfalls and Deficiency Charges

#### 5.14.2.1 General Provisions

In the event that an Installed Capacity Supplier sells in the Capability Period Auctions, in the Monthly Auctions, or through Bilateral Transactions more Unforced Capacity than it is qualified to sell in any specific month due to a de-rating or other cause, the Installed Capacity Supplier shall be deemed to have a shortfall for that month. To cover this shortfall, the Installed Capacity Supplier shall purchase sufficient Unforced Capacity in the relevant Monthly Auction or through Bilateral Transactions, and certify to the ISO consistent with the ISO Procedures that it has covered such shortfall. If the Installed Capacity Supplier does not cover such shortfall or if it does not certify to the ISO in a timely manner, the ISO shall, to the extent the ISO is aware of the shortfall, prospectively purchase Unforced Capacity on behalf of that Installed Capacity Supplier in the appropriate ICAP Spot Market Auction or through post ICAP Spot Market Auction Unforced Capacity purchases to cover the shortfall.

The ISO shall submit a Bid, calculated pursuant to Section 5.14.1 of this Tariff, in the appropriate ICAP Spot Market Auction on behalf of an Installed Capacity Supplier deemed to have a shortfall as if the Installed Capacity Supplier were an LSE. Such Installed Capacity Supplier shall be required to pay to the ISO the applicable Market-Clearing Price of Unforced Capacity established in that ICAP Spot Market Auction. Immediately following the ICAP Spot Market Auction, the ISO may suspend the Installed Capacity Supplier's privileges to sell or purchase Unforced Capacity in ISO-administered Installed Capacity auctions or to submit Bilateral Transactions to the NYISO. Once the Installed Capacity Supplier pays for or secures the payment obligation that it incurred in the ICAP Spot Market Auction, the ISO shall reinstate the Installed Capacity Supplier's privileges to participate in the ICAP markets.

In the event that the ICAP Spot Market Auction clears below the NYCA Minimum Installed Capacity Requirement or the Locational Minimum Installed Capacity Requirement, whichever is applicable to the Installed Capacity Supplier, and the Installed Capacity Supplier is deemed to have a shortfall, the Installed Capacity Supplier shall be assessed the applicable deficiency charge equal to the applicable Market-Clearing Price of Unforced Capacity determined using the applicable ICAP Demand Curve for that ICAP Spot Market Auction, times the amount of its shortfall.

If an Installed Capacity Supplier is found, at any point during a Capability Period, to have had a shortfall for that Capability Period, *e.g.*, when the amount of Unforced Capacity that it supplies is found to be less than the amount it was committed to supply, the Installed Capacity Supplier shall be retrospectively liable to pay the ISO the monthly deficiency charge equal to one and one-half times the applicable Market-Clearing Price of Unforced Capacity determined using the applicable ICAP Demand Curve for that ICAP Spot Market Auction times the amount of its shortfall for each month the Installed Capacity Supplier is deemed to have a shortfall. If the Installed Capacity Supplier is a RIP or an Aggregator, it may experience a shortfall when, among other reasons, it sells ineligible or unavailable capacity MW associated with a properly or improperly enrolled SCR or Distributed Energy Resource.

The ISO, when evaluating whether an Installed Capacity Supplier has a shortfall, may use either Unforced Capacity data or Installed Capacity data; provided, however, that the ISO shall convert any shortfall MWs based on Installed Capacity data to its Unforced Capacity equivalent prior to calculating the amount of any deficiency charge. All shortfalls shall be measured in MWs in increments of 0.1 MW.

Any remaining monies collected by the ISO pursuant to Section 5.14.1 and 5.14.2 will be applied as specified in Section 5.14.3.

#### 5.14.2.2 Additional Provisions Applicable to External Installed Capacity Suppliers

In addition to the general provisions set forth in Section 5.14.2.1 above that are applicable to External Installed Capacity Suppliers as Installed Capacity Suppliers, the following provisions shall also apply to External Installed Capacity Suppliers.

In the event that an External Installed Capacity Supplier fails to deliver to the NYCA the Energy associated with the Unforced Capacity it committed to the NYCA due to a failure to obtain appropriate transmission service or rights, the External Installed Capacity Supplier shall be deemed to have a shortfall from the last time the External Installed Capacity Supplier "demonstrated" delivery of its Installed Capacity Equivalent ("ICE"), or any part thereof, until it next delivers its ICE or the end of the term for which it certified the applicable block of Unforced Capacity, whichever occurs first, subject to the limitation that any prior lack of demonstrated delivery will not precede the beginning of the period for which the Unforced Capacity was certified.  An External Installed Capacity Supplier deemed to have a shortfall shall be required to pay to the ISO a deficiency charge equal to one and one-half times the applicable Market-Clearing Price of Unforced Capacity determined in the ICAP Spot Market Auction for the applicable month, prorated for the number of hours in the month that External Installed Capacity Supplier is deemed to have a shortfall (i.e., (((deficiency charge ÷ 12 months) ÷ total number of hours in month when shortfall occurred) * number of hours the shortfall lasted) * number of MWs of shortfall).

#### 5.14.2.3 Additional Provisions Applicable to RIPs

In addition to the general provisions set forth in Section 5.14.2.1 above that are applicable to RIPs as Installed Capacity Suppliers, this Section 5.14.2.3 establishes the following four specific shortfalls applicable to RIPs:  1.  shortfall for Provisional ACL; 2. shortfall for Incremental ACL; 3. shortfall for SCR Change of Status; and 4. shortfall for RIP portfolio performance.  The deficiency charge for any such shortfall shall be equal to the Unforced Capacity equivalent of the shortfall multiplied by one and one-half times the applicable Market-Clearing Price of Unforced Capacity determined using the applicable ICAP Demand Curve for the ICAP Spot Market Auction for each month the RIP is deemed to have a shortfall.

There are three distinct measures of shortfall that are applicable to a RIP, described in this Section 15.4.2.3, where individual SCRs that have been enrolled with a Provisional ACL or an Incremental ACL, or that experience a SCR Change of Status may result in a shortfall.  When a RIP is subject to multiple deficiency charges for the same SCR for the same Capability Period, the ISO shall assess to the RIP only the greatest deficiency charge related to such SCR.  In addition, if the shortfall results in a reduction in the performance of a SCR, the ISO may recover from the RIP any energy payments for which the SCR was ineligible to receive.

#### 5.14.2.3.1 Shortfall for Provisional ACL

Prior to the Summer 2014 Capability Period if the Installed Capacity Supplier is a Responsible Interface Party, after each Special Case Resource with a Provisional Average Coincident Load has its Average Coincident Load determined for the Capability Period in which it had a Provisional Average Coincident Load (such determination in accordance with ISO Procedures and without regard to whether the resource was registered to the same Responsible Interface Party at the time of the ACL determination), the ISO shall determine if there is a shortfall due to the Provisional Average Coincident Load being higher than the Average Coincident Load. This shortfall will be equal to the value, if positive, of (x) the sum of (i) the amount of UCAP a Responsible Interface Party sold in an Monthly or an ICAP Spot Market Auction or certified Bilateral Transactions for a Special Case Resource and (ii) the Special Case Resource's actual metered demand for the month in accordance with ISO Procedures, minus (y) the Special Case Resource's Average Coincident Load. If the ISO does not receive data to determine the Average Coincident Load in accordance with ISO Procedures, for each Capability Period a Special Case Resource had a Provisional Average Coincident Load, for purposes of determining the shortfall, the Average Coincident Load shall equal zero.

Beginning with the Summer of 2014 Capability Period if the Installed Capacity Supplier is a Responsible Interface Party, after each SCR with a Provisional ACL has its Verified ACL determined for the Capability Period in which it had a Provisional ACL (such determination in accordance with Section 5.12.11.1 and ISO Procedures) the ISO shall determine if there is a shortfall due to the Provisional ACL being greater than the Verified ACL. This shortfall shall be equal to the value, if positive, of (x) the Provisional ACL of the SCR, minus (y) the Verified ACL of the SCR. The shortfall calculated for the SCR for a month shall not exceed the amount of Installed Capacity associated with the SCR that was sold for that month. If the ISO does not receive data to determine the SCR's Verified ACL for the Capability Period for which the SCR was enrolled with a Provisional ACL the Verified ACL shall equal zero.

#### 5.14.2.3.2 Shortfall for Incremental ACL

If the Installed Capacity Supplier is a RIP that reported an Incremental ACL, the ISO shall determine there is a shortfall when the Net ACL is greater than the Verified ACL. This shortfall shall be equal to the value, if positive, of (x) the enrolled Net ACL of the SCR, minus (y) the Verified ACL of the SCR for each month in which the RIP sold the SCR's Installed Capacity. The shortfall calculated for the SCR for a month shall not exceed the amount of Installed Capacity associated with the SCR that was sold for that month. If the ISO does not receive data to determine the Verified ACL for each month within the Capability Period that the SCR was enrolled with an Incremental ACL, the Monthly ACL for each unreported month shall equal zero (0) and be used in the calculation of the Verified ACL in accordance with Section 5.12.11.1.5.

#### 5.14.2.3.3 Shortfall for SCR Change of Status

If the Installed Capacity Supplier is a RIP, and a SCR Change of Status occurs, the ISO shall determine if a shortfall exists, based on the RIP's reporting of the SCR Change of Status.

When a SCR Change of Status is reported by the RIP in advance and no Installed Capacity associated with the SCR has been sold, a shortfall has not occurred. If the SCR Change of Status is reported by the RIP, but the Installed Capacity associated with the SCR has already been sold for one or more months a shortfall exists for these months, the shortfall shall be equal to the reduction to the ACL reported in the SCR Change of Status, but shall not exceed the amount of Installed Capacity sold for each month.

When the RIP fails to report the SCR Change of Status during the Capability Period, for each month in which the SCR's Installed Capacity was sold and the SCR Change of Status was in effect, the ISO shall determine the shortfall MW using the maximum one hour metered Load for the month. The shortfall amount for each month in which the SCR Change of Status was in effect shall equal the value of SCR ACL minus the maximum one hour metered Load for the month, but shall not exceed the SCR's Installed Capacity sold for the month.

#### 5.14.2.3.4 Shortfall for RIP Portfolio Performance

In addition to the shortfall evaluations based on individual SCRs, a RIP is subject to a shortfall evaluation, by Load Zone, for its entire SCR portfolio. In this evaluation the shortfall shall be determined for each Load Zone separately. A shortfall will occur if the total of the amount of UCAP sold by the RIP for a month in a Capability Period Auction or a Monthly Auction and certified prior to that month's ICAP Spot Market Auction, the UCAP sold in that month's ICAP Spot Market Auction, and the UCAP sold as a Bilateral Transaction and certified prior to that month's ICAP Spot Market Auction is greater than the greatest quantity MW reduction achieved during a single hour in a test or event called by the ISO in the Capability Period as confirmed by data by the ISO in accordance with ISO Procedures (or the value of zero if data is not received by the ISO in accordance with such procedures).

### 5.14.3 Application of Installed Capacity Supplier Deficiency Charges

Any remaining monies collected by the ISO through supplemental supply fees or Installed Capacity Supplier deficiency charges pursuant to Section 5.14.1 but not used to procure Unforced Capacity on behalf of LSEs or Installed Capacity suppliers deemed to have a shortfall shall be applied as provided in this Section 5.14.3.

#### 5.14.3.1 General Application of Deficiency Charges

Except as provided in Section 5.14.3.2, remaining monies will be applied to reduce the Rate Schedule 1 charge in the following month.

#### 5.14.3.2 Installed Capacity Rebates

**(i) New York City**

If an Unforced Capacity shortfall exists during any month, the ISO shall rebate any remaining unspent deficiency charges or supplemental supply fees collected for that month for the New York City Locality allocated among all LSEs in that Locality in proportion to their share of the applicable Locational Minimum Installed Capacity Requirement. Rebates shall include interest accrued between the time payments were collected and the time that rebates are paid.

**(ii) Long Island**

If an Unforced Capacity shortfall exists during any month, the ISO shall rebate any remaining unspent deficiency charges or supplemental supply fees collected for that month for the Long Island Locality, allocated among all LSEs in that Locality in proportion to their share of the applicable Locational Minimum Installed Capacity Requirement. Rebates shall include interest accrued between the time payments were collected and the time that rebates are paid.

**(iii) G-J**

If an Unforced Capacity shortfall exists during any month, the ISO shall rebate any remaining unspent deficiency charges or supplemental supply fees collected for that month for the G-J Locality, allocated among all LSEs in that Locality in proportion to their share of the applicable Locational Minimum Installed Capacity Requirement. Rebates shall include interest accrued between the time payments were collected and the time that rebates are paid.

**(iv) Rest of State**

If an Unforced Capacity shortfall exists during any month, the ISO shall rebate any remaining unspent deficiency charges or supplemental supply fees collected for that month for the Rest of State requirements, allocated among all LSEs in each of the Localities and in Rest of State, in proportion to each LSE's share of the NYCA Minimum Installed Capacity Requirement less that LSE's Locational Minimum Installed Capacity Requirement. Rebates shall include interests accrued between the time payments were collected and the time that rebates are paid.

## 5.18 Generator Outages and Generator Obligations While in These Outages

This Section 5.18 shall apply to a Generator in any outage state that started on or after May 1, 2015, except for a Generator participating in the ISO Markets as part of an Aggregation. Section 5.18 shall apply to a Generator that is in an outage state at the time that it joins an Aggregation until that Generator returns to operation.

A Market Participant with a Generator in the NYCA that is in any outage state, which is not part of an Aggregation, shall report its status to the ISO pursuant to ISO Procedures.

Except when a Generator is not subject to the requirements of this Section 5.18 because it is only participating in the ISO Markets as part of an Aggregation, if the Market Participant that administers a Generator's participation in the ISO Administered Markets is a different entity than the entity that possesses the ultimate decision-making authority concerning the deactivation , outage or repair of the Generator, then the entity with ultimate decision-making authority regarding the deactivation, outage or repair of the Generator must agree, as part of the registration of the Generator with the ISO for participation in the ISO Administered Markets, that it will be subject to and comply with the outage state rules set forth in this Section 5.18 of the ISO Services Tariff. Except when a Generator is not subject to the requirements of this Section 5.18 because it is only participating in the ISO Markets as part of an Aggregation, the entity with ultimate decision-making authority regarding the deactivation, retirement and/or repair of the Generator shall, along with the Market Participant, be subject to all of the requirements of Section 5.18 of the ISO Services Tariff that apply to a Market Participant.

### 5.18.1 Forced Outages and Commenced Repair Determinations

5.18.1.1 A Market Participant with a Generator in a Forced Outage shall keep the ISO informed as to progress of its Generator's repairs pursuant to ISO

Procedures. A Market Participant may keep its Generator in a Forced Outage beyond the last day of the month which contains the 180th day of its Forced Outage only if it has Commenced Repair of its Generator. A Market Participant that anticipates its Generator will not be able to return to the Energy market before the last day of the month which contains the 180th day of its Forced Outage and which desires to remain eligible to be in the Installed Capacity market beyond the 180th day shall provide a Repair Plan to the ISO by the 120th day of the Forced Outage.

5.18.1.2 A Repair Plan shall include a work plan, with milestones, or set of necessary actions, and shall provide the time it is expected to take to complete each task and describe the repair of the Generator's equipment related to electric production, fuel or station power supply or transmission interconnection, as appropriate, that was either affected by the Forced Outage or otherwise makes the unit available for the Energy market. The Repair Plan's milestones shall include, in appropriate circumstances: damage assessments, engineering assessments, initial cost estimates, purchase orders, inspection reports, initial safety assessments, hazardous material abatement plans, and labor mobilization plans. The Repair Plan shall include the date the Market Participant expects the Generator to be repaired and available for the Energy market (return date) which return date: i) shall be reasonable, ii) may be provided as a good faith estimate, and iii) shall be updated to the extent new information becomes available. The return date or good faith estimate of a return date that a Market Participant provides for its Generator shall be reasonable if it is comparable to the return date that would be included in a Credible Repair Plan pursuant to Section 5.18.1.5 of this Services Tariff.

5.18.1.3 Market Participants requesting that the NYISO determine, pursuant to Services Tariff Section 23.4.5.6.2, that their Generator has experienced a Catastrophic Failure, or that Exceptional Circumstances will delay the submission of data necessary for the ISO to perform an audit and review pursuant to Section 23.4.5.6.2, shall submit their requests, with necessary supporting data, to the NYISO by the 120th day of the Forced Outage if they desire the determination to be issued by the 160th day of the Forced Outage of their Generator.

5.18.1.4 A Market Participant has Commenced Repair of its Generator if it: i) has decided to pursue the repair of its Generator, and based on the ISO's technical/engineering evaluation, ii) has a Repair Plan for the Generator that is consistent with a Credible Repair Plan, and iii) has made appropriate progress in pursuing the repair of its Generator when measured against the milestones of a Credible Repair Plan.

5.18.1.5 For purposes of the determinations required by Section 5.18.1.3(ii) and (iii), and 5.18.1.6 of this Services Tariff, a Credible Repair Plan is the Repair Plan that would be expected from a supplier: i) with a generating facility that is reasonably the same as or similar to the type and vintage of the Generator; ii) intending to return its generating facility to service. A Credible Repair Plan for a Generator that suffered a Forced Outage is a Repair Plan that would also be expected from a supplier with a generating facility that suffered a forced outage that was reasonably the same as or comparable to the Forced Outage suffered by the Generator and which forced outage occurred under the same, or reasonably similar, circumstances as the Generator's. A Credible Repair Plan for a Generator in a Mothball Outage is a Repair Plan that would also be expected from a supplier pursuing a repair to its generating facility which repair is reasonably the same as or comparable to the repair being pursued by the Generator.

5.18.1.6 The determination that a Market Participant has Commenced Repair of its Generator in a Forced Outage shall be made by the ISO by the 160$^{th}$ day of the Forced Outage. If the Market Participant provides updated information after the 120$^{th}$ day of the Forced Outage and before the 180$^{th}$ day of its Generator's Forced Outage, the ISO will, as applicable, take such information into consideration to make its determination or it will update its previously issued determination to the extent practicable.

The determination that a Market Participant has Commenced Repair of its Generator in an ICAP Ineligible Forced Outage, which Market Participant has been determined by the ISO to have one or more Exceptional Circumstances that delay the acquisition of necessary data for an audit and review for economic justification pursuant to Section 23.4.5.6.2 of this Services Tariff, shall be made by the ISO as soon as practicable following receipt of necessary data.

The determination that a Market Participant has Commenced Repair of its Generator in an ICAP Ineligible Forced Outage or Mothball Outage, which Market Participant is seeking to toll expiration of its outage and CRIS rights pursuant to Sections 5.18.2.3.2 or 5.18.3.3.2 of this Services Tariff, will be made by the ISO as soon as practicable following receipt of the necessary data.

5.18.1.7 If a Market Participant has not Commenced Repair of its Generator by the last day of the month which contains the 180th day of the Forced Outage, the Generator's Forced Outage shall expire on the last day of the month which contains the 180th day of the Forced Outage. The Forced Outage of a Generator that Commenced Repair but ceased or unreasonably delayed the Generator's repair shall terminate on the last day of the month containing the date that the Market Participant ceased or unreasonably delayed the repair. The ISO will determine a Market Participant has unreasonably delayed the repair of its Generator if such delay would not have been included in a Credible Repair Plan from a supplier experiencing the situation which caused the Market Participant to delay the repair of its Generator.

5.18.1.8 Upon the expiration or termination of a Generator's Forced Outage, the Generator shall be in an ICAP Ineligible Forced Outage unless the Generator has been Retired by the Market Participant.

### 5.18.2 ICAP Ineligible Forced Outage

5.18.2.1 A Market Participant may voluntarily reclassify its Generator from a Forced Outage to an ICAP Ineligible Forced Outage only if the Generator has been in a Forced Outage for at least sixty (60) days. A Generator that has been voluntarily reclassified from a Forced Outage to an ICAP Ineligible Forced Outage shall begin its ICAP Ineligible Forced Outage on the first day of the month following the month in which it was voluntarily reclassified to an ICAP Ineligible Forced Outage.

A Generator in an ICAP Ineligible Forced Outage as a result of the expiration or termination of its Forced Outage pursuant to Section 5.18.1.6 of this Services Tariff, shall begin its ICAP Ineligible Forced Outage on the day following the day the Generator's Forced Outage expired or terminated.

A Generator in an ICAP Ineligible Forced Outage as a result of substantial actions that have been taken, such as dismantling or disabling essential equipment, which actions are inconsistent with an intention to operate the Generator in the Energy market shall begin its ICAP Ineligible Forced Outage on the day following the day such actions began.

If one of the two Generators in a CSR enters an ICAP Ineligible Forced Outage but the other CSR Generator continues operating, the remaining Generator may continue to participate as a Generator in a CSR unless or until the Generator in the ICAP Ineligible Forced Outage becomes Retired.

5.18.2.2 A Generator in an ICAP Ineligible Forced Outage is not eligible to participate in the Installed Capacity market and shall automatically cease to qualify to participate in the Installed Capacity market beginning with the first day of its ICAP Ineligible Forced Outage. The Generator shall no longer be ineligible to participate in the Installed Capacity market**,** by virtue of its ICAP Ineligible Forced Outage, as of the first day the Generator returns to operation and offers its Energy into the Day-Ahead Market without declaring an outage. The month for which the Generator will first be eligible to participate in the Installed Capacity market will be based on the date the Generator returns to operation and offers its Energy into the Day-Ahead Market without declaring an outage and ISO Procedures.

**5.18.2.3 ICAP Ineligible Force Outage Expiration**

5.18.2.3.1 Except as provided in Section 5.18.2.3.2, a Generator's ICAP Ineligible Forced Outage shall expire if: i) its CRIS rights have expired; or ii) it did not have CRIS rights and has been in the ICAP Ineligible Forced Outage for 36 consecutive months. A Generator shall be Retired if its ICAP Ineligible Forced Outage expires.

5.18.2.3.2 If a Market Participant with a Generator in an ICAP Ineligible Forced Outage has Commenced Repair prior to when the ICAP Ineligible Forced Outage would expire pursuant to Section 5.18.2.3.1 and has provided a reasonable return date as that term is described in Section 5.18.1.2 of this Services Tariff that occurs after such expiration date, then the outage and the Generator's CRIS rights will be tolled until, and the ICAP Ineligible Forced Outage will expire on, the earlier of: i) 120 days from when the outage would have expired under Section 5.18.2.3.1; or ii) an ISO determination that the Market Participant has ceased or unreasonably delayed the repair of its Generator. The ISO will determine if a Market Participant has unreasonably delayed the repair of its Generator if such delay would not have been included in a Credible Repair Plan from a supplier experiencing the situation which caused the Market Participant to delay the repair of its Generator. The tolling of CRIS rights occurs under this Section 5.18.2.3.2 notwithstanding the three year period in which CRIS-inactive facilities may maintain CRIS rights pursuant to Section 25.9.3.1 of Attachment S to the OATT; provided, however, the expiration period for transfers of CRIS rights provided in Section 25.9.3.1 of Attachment S to the OATT shall not be tolled. A Market Participant seeking to toll its outage and CRIS rights pursuant to this Section

5.18.2.3.2 must submit a Repair Plan no later than 60 days prior to when the ICAP Ineligible Forced Outage would expire under Section 5.18.2.3.1.

5.18.2.4 A Market Participant with a Generator in an ICAP Ineligible Forced Outage that is notified by a Transmission Owner or the ISO that the return to service of its Generator could address a reliability issue shall provide an updated good faith estimate of the Generator's return date. A Market Participant with a Generator in an ICAP Ineligible Forced Outage shall make a timely return to service to resolve a reliability issue, in accordance with Section 5.18.4, as the term "timely return" is described in Section 5.18.4.2 of this Services Tariff. A Market Participant with a Generator in an ICAP Ineligible Forced Outage shall provide temporary use of its Generator's interconnection point in accordance with Section 5.18.5 of this Services Tariff when a transmission solution using the Generator's interconnection point has been selected as the Short-Term Reliability Process Solution, the Gap Solution, or to resolve a reliability issue arising on a non-New York State Bulk Power Transmission Facility during its outage. The Transmission Owner shall provide that power to the station remains available notwithstanding its temporary use of the Generator's interconnection point.

**5.18.3 Mothball Outage**

5.18.3.1 Prior to entering a Mothball Outage, the Generator must satisfy the prior notice requirement contained in Section 38.3.1 of Attachment FF to the ISO OATT, among other applicable requirements. A Generator in a Mothball Outage is not eligible to participate in the Installed Capacity market and shall automatically cease to qualify to participate in the Installed Capacity market beginning with the date the Generator begins its Mothball Outage.  The Generator shall no longer be ineligible to participate in the Installed Capacity market, by virtue of its Mothball Outage, as of the first day the Generator returns to operation and offers its Energy into the Day-Ahead Market without declaring an outage. The month for which the Generator will first be eligible to participate in the Installed Capacity market will be based on the date the Generator returns to operation and offers its Energy into the Day-Ahead Market without declaring an outage and ISO Procedures.

If one of the two Generators in a CSR enters a Mothball Outage but the other CSR Generator continues operating, the remaining Generator may continue to participate as a Generator in a CSR unless or until the Generator in the Mothball Outage becomes Retired.

5.18.3.2 As part of the Generator Deactivation Notice required prior to entering a Mothball Outage pursuant to Section 38.3.1 of Attachment FF to the ISO OATT, a Market Participant shall notify the ISO whether its Generator will be physically able to return within 180 days to resolve a reliability issue or it has good cause for an alternate period of time, stated in days, to return its Generator to service to resolve a reliability issue.  The Market Participant shall establish good cause, to the satisfaction of the ISO, by providing empirical evidence demonstrating the need for the alternate period of time to return its Generator to service to resolve a reliability issue.  The number of days within which a Generator in a Mothball Outage can be returned to service to resolve a reliability issue will be shared with the applicable Transmission Owner(s).

**5.18.3.3 Mothball Outage Expiration**

5.18.3.3.1 Except as provided in Section 5.18.3.3.2, a Generator's Mothball Outage shall expire if: i) its CRIS rights have expired; or ii) it did not have CRIS rights and has been in the Mothball Outage for 36 consecutive months. A Generator shall be Retired if its Mothball Outage expires.

5.18.3.3.2 If a Market Participant with a Generator in a Mothball Outage has Commenced Repair prior to when the Mothball Outage would expire pursuant to Section 5.18.3.3.1 and has provided a reasonable return date as that term is described in Section 5.18.1.2 of this Services Tariff that occurs after such expiration date, then the outage and the Generator's CRIS rights will be tolled until, and the Mothball Outage will expire on, the earlier of: i) 120 days from when the outage would have expired under Section 5.18.3.3.1; or ii) an ISO determination that the Market Participant has ceased or unreasonably delayed the repair of its Generator. The ISO will determine if a Market Participant has unreasonably delayed the repair of its Generator if such delay would not have been included in a Credible Repair Plan from a supplier experiencing the situation which caused the Market Participant to delay the repair of its Generator. The tolling of CRIS rights occurs under this Section 5.18.3.3.2 notwithstanding the three year period in which CRIS-inactive facilities may maintain CRIS rights pursuant to Section 25.9.3.1 of Attachment S to the OATT; provided, however, the expiration period for transfers of CRIS rights provided in Section 25.9.3.1 of Attachment S to the OATT shall not be tolled. A Market Participant seeking to toll its outage and CRIS rights pursuant to this Section 5.18.3.3.2 must submit a Repair Plan no later than 60 days prior to when the Mothball Outage would expire under Section 5.18.3.3.1.

5.18.3.4 A Market Participant with a Generator in a Mothball Outage shall timely return the Generator to service to resolve a reliability issue, in accordance with Section 5.18.4, as the term ‘timely return’ is described in Section 5.18.4.2 of this Services Tariff**.** A Market Participant with a Generator in a Mothball Outage shall provide temporary use of its Generator’s interconnection point, in accordance with Section 5.18.5 of this Services Tariff, when a transmission solution using the Generator’s interconnection point has been selected as the Short-Term Reliability Process Solution, the Gap Solution, or to resolve a reliability issue on a non-New York State Bulk Power Transmission Facility arising during the Generator’s outage. The Transmission Owner shall provide that power to the station remains available notwithstanding its temporary use of the Generator’s interconnection point.

## 5.18.4 Return to Service of Generators in a Mothball Outage or an ICAP Ineligible Forced Outage to Resolve a Reliability Issue

5.18.4.1 Following: i) notification to a Market Participant that the return to service of its Generator in a Mothball Outage or an ICAP Ineligible Forced Outage for a specified minimum time period has been identified as a Short-Term Reliability Process Solution, a Gap Solution, or to resolve a reliability issue on a non-New York State Bulk Power Transmission Facility arising during the Generator’s outage; and ii) an order establishing compensation for such return from the Federal Energy Regulatory Commission (“Compensation Order”), the Market Participant shall timely return the Generator to service, as the term “timely return” is defined in Section 5.18.4.2 of this Services Tariff.

**5.18.4.1.1** Except for Generators selected through the Short-Term Reliability Process, within 30 days of a determination by the ISO and the Market Participant that negotiations on compensation for the return to service of the Market Participant's Generator are at an impasse, the Market Participant may submit a filing to the Federal Energy Regulatory Commission under Section 205 of the Federal Power Act for compensation. No later than ten days after such filing is made, the ISO shall file with the Federal Energy Regulatory Commission an unexecuted compensation agreement that includes the non-rate terms and conditions for the return to service of the Market Participant's Generator.

5.18.4.2 A Market Participant's return to service of its Generator in a Mothball Outage to resolve a reliability issue shall be deemed to be a timely return if such return to service was i**)** within 180 days from the date of the Compensation Order, ii) within the alternate period of time following the date of the Compensation Order pursuant to Section 5.18.3.2, or iii) by such other date agreed to by the parties.

A Market Participant's return to service of its Generator in an ICAP Ineligible Forced Outage to resolve a reliability issue shall be deemed to be a timely return if it is returned to service according to the date established by the Compensation Order; *provided*, *however*, the Market Participant will not be required to return the Generator to service before its estimated return date unless otherwise agreed.

5.18.4.2.1 A Generator's return to service shall not be untimely if the Generator provided the Transmission Owner with access to its interconnection point and is available for a timely return, and the Transmission Owner is unable to reconnect the Generator within the timeframes provided for a timely return to service, pursuant to Section 5.18.4.2 of this Services Tariff**.**

### 5.18.5 Temporary Use of Interconnection Point to Resolve a Reliability Issue

5.18.5.1 A Market Participant shall provide a Transmission Owner with temporary use of the interconnection point of its Generator in a Mothball Outage or ICAP Ineligible Forced Outage when a transmission solution using the Generator's interconnection point has been selected as the Short-Term Reliability Process Solution, Gap Solution, or to resolve a reliability issue arising on a non-New York State Bulk Power Transmission Facility during its outage.

5.18.5.2 A Market Participant that provided temporary use of the interconnection point of its Generator in a Mothball Outage or ICAP Ineligible Forced Outage pursuant to Section 5.18.5.1 of this Services Tariff shall be permitted to reconnect its Generator to the transmission system by submitting to the ISO a Notice of Intent to Return that provides the date it intends to return to service which submission shall be provided no later than six months before the expiration of its outage, unless otherwise agreed. A Market Participant that submitted a Notice of Intent to Return and that was not requested to return its Generator to service to resolve a reliability issue pursuant to Section 5.18.4.1 of this Services Tariff during its immediately previous Mothball Outage or ICAP Ineligible Forced Outage, shall be permitted to reconnect at no cost.

The Transmission Owner shall reconnect the Generator on or before the indicated return date using efforts that are timely, consistent with Good Utility

Practice and that are otherwise substantially equivalent to those the Transmission Owner would use for its own purposes. The Transmission Owner shall report periodically to the ISO and the Generator on the progress of reconnecting such Generator and shall advise the ISO and the Generator promptly if it expects it will not be able to complete the reconnection of the Generator before its indicated return date.

If the Generator returning to service pursuant to this Section 5.18.5.2 of the Services Tariff is available to return but the Transmission Owner is unable to reconnect the Generator before its outage expires, the outage expiration, and expiration of its CRIS rights, where applicable, will be tolled until the date the Transmission Owner reconnects the Generator notwithstanding the three year period in which CRIS-inactive facilities may maintain CRIS rights pursuant to Section 25.9.3.1 of Attachment S to the OATT; provided, however, the expiration period for transfers of CRIS rights provided in Section 25.9.3.1 of Attachment S to the OATT shall not be tolled.

### 5.18.6 Retired and Termination of Existing Interconnection Agreements

The classification of a Generator with an interconnection agreement other than a Small Generator Interconnection Agreement (SGIA) or Standard Large Generator Interconnection Agreement (LGIA) as Retired may be grounds for the termination of the interconnection agreement depending on the terms and conditions of the applicable agreement. Any termination of such an interconnection agreement will be effective on the filing with the Federal Energy Regulatory Commission of a notice of termination, which notice and proposed effective date have been accepted by the Federal Energy Regulatory Commission. Either party to the interconnection agreement may file the notice of termination, as appropriate. If and when termination of the interconnection agreement is effective, access to the Point of Interconnection of the Generator will be available on a non-discriminatory basis pursuant to the NYISO's applicable interconnection and transmission expansion processes and procedures. If the existing interconnection agreement is not terminated, the Retired Generator would retain its right to the specific point of interconnection as provided for in the interconnection agreement and access to this point would not be available for new projects.

The impact on a Generator with a LGIA or SGIA that has been classified as Retired is described in OATT Sections 30 and 32 respectively.

## 7.4 Billing Disputes

This Section 7.4 establishes the process and timeframe for review, challenge, and correction of Customer invoices. For purposes of this Section 7.4, any deadline that falls on a Saturday, Sunday, or holiday for which the ISO is closed shall be observed on the ISO's next business day.

For purposes of this Section 7.4, "finalized" data and invoices shall not be subject to further correction, including by the ISO, except as ordered by the Commission or a court of competent jurisdiction; *provided, however*, that nothing herein shall be construed to restrict any stakeholder's right to seek redress from the Commission in accordance with the Federal Power Act.

Challenges to charges and payments in awards rendered by the ISO to Customers buying or selling TCCs in Centralized TCC Auctions and Reconfiguration Auctions shall be governed by Section 19.10 of Attachment M of the ISO OATT and ISO Procedures and shall not be governed by this Section 7.4.

### 7.4.1 Settlement Cycle for Services Furnished On and After January 1, 2009

#### 7.4.1.1 ISO Corrections or Adjustments and Customer Challenges to the Accuracy of Settlement Information

Settlement information for services furnished beginning January 1, 2009, and thereafter shall be subject to review, comment, and challenge by a Customer and correction or adjustment by the ISO for errors at any time for up to five (5) months from the date of the initial invoice for the month in which service is rendered as set forth in Section 7.2.2.2 of this ISO Services Tariff and as further provided in Section 7.4.1.2, subject to the following requirements and limitations:

7.4.1.1.1 A Supplier or meter authority may review, comment on, and challenge Aggregation, Generator, tie-line, and sub-zone Load metering data for fifty-five (55) days from the date of the initial invoice for the month in which service is rendered. Following this review period, the ISO shall then have five (5) days to process and correct Aggregation, Generator, tie-line, and sub-zone Load metering data, after which time it shall be finalized.

7.4.1.1.2 The meter authority shall provide to the ISO all LSE bus metering data then available within seventy (70) days from the date of the initial invoice and shall provide any necessary updates to the LSE bus metering data as soon as possible thereafter. The ISO shall post all available LSE bus metering data within approximately seventy-five (75) days from the date of the initial invoice and shall continue to post incoming LSE bus metering data as soon as practicable after it is received.

7.4.1.1.3 The ISO shall post advisory settlement information, including available LSE bus metering data, within ninety (90) days from the date of the initial invoice. Customers may review, comment on, and challenge this settlement information, except for Aggregation, Generator, tie-line, and sub-zone Load metering data, after which the ISO shall process and correct the data and issue a corrected invoice with the regular monthly invoice issued on or about one hundred twenty (120) days from the date of the initial invoice. Following the ISO's issuance of a corrected invoice, Customers may continue to review, comment on, and challenge their settlement information, excepting Aggregation, Generator, tie-line, and sub-zone Load metering data, until the end of the five-month review period.

7.4.1.1.4 The meter authority shall provide to the ISO any final updates or corrections to LSE bus metering data within one hundred thirty (130) days from the date of the initial invoice. The ISO shall then post any updated and corrected LSE bus metering data within one hundred thirty-five (135) days from the date of the initial invoice. Customers may then review, comment on, and challenge the LSE bus metering data for an additional ten (10) days. Following this review period, the ISO shall have five (5) days to process and correct the LSE bus metering data, after which it shall be finalized.

The ISO shall use reasonable means to post metering revisions for review by Customers and to notify Customers of the approaching expiration of review periods. To challenge settlement information contained in an invoice, a Customer shall first make payment in full, including any amounts in dispute. Customer challenges to settlement information shall: (i) be submitted to the ISO in writing, (ii) be clearly identified as a settlement challenge, (iii) state the basis for the Customer's challenge, and (iv) include supporting documentation, if applicable. The ISO shall notify all Customers of errors identified and the details of corrections or adjustments made pursuant to this Section 7.4.1.1.

**7.4.1.2 Review and Correction of Challenged Invoices**

The ISO shall evaluate a settlement challenge as soon as possible within two (2) months following the conclusion of the challenge period specified in Section 7.4.1.1; *provided, however,* the ISO may, upon notice to Customers within this time of extraordinary circumstances requiring a longer evaluation period, take up to six (6) months to evaluate a settlement challenge. The ISO shall not be limited to the scope of Customer challenges in its review of a challenged invoice and may, at its discretion, review and correct any other elements and intervals of a challenged invoice, except Load and meter data as specified in Section 7.4.1.1. Corrections to a challenged invoice shall be applied to all Customers that were or should have been affected by the original settlement and shall not be limited to the Customer challenging the invoice; *provided, however*, that the ISO may recover *de minimis* amounts or amounts that the ISO is unable to collect from individual Customers through Rate Schedule 1 of this ISO Services Tariff.

Upon completing its evaluation, the ISO shall provide written notice to the challenging Customer of the ISO's final determination regarding the Customer's settlement challenge. If the ISO determines that corrections or adjustments to a challenged invoice are necessary and can quantify them with reasonable certainty, the ISO shall provide all Customers with the details of the corrections or adjustments within the timeframe established in this Section 7.4.1.2. The ISO shall then provide a period of twenty-five (25) days for Customers to review the corrected settlement information and provide comments to the ISO regarding the implementation of those corrections or adjustments; *provided*, *however*, that in the event of a dispute resolution proceeding conducted in accordance with Section 7.4.2 of this ISO Services Tariff, this twenty-five (25) day period shall not start or, if it has already started, shall be suspended until the conclusion of the dispute resolution proceeding. Following the conclusion of the dispute resolution proceeding, the ISO shall make any corrections to Customers' settlement invoices that it determines to be necessary and shall then start or re-start the twenty-five (25) day Customer comment period.

If no errors in the implementation of corrections or adjustments are identified during the twenty-five (25) day Customer comment period, the ISO shall issue a finalized close-out settlement ("Close-Out Settlement"), clearly identified as such, in the next regular monthly billing invoice. If an error in the implementation of a correction or adjustment is identified during the twenty-five (25) day Customer comment period, the ISO shall have one (1) month to make such further corrections as are necessary to address the error and provide Customers with one additional period of twenty-five (25) days to review and comment on the implementation of those further corrections. If an error in the implementation of those further corrections is identified, the ISO shall then have one (1) month to make any final corrections that are necessary and shall issue a finalized Close-Out Settlement in the next regular monthly billing invoice.

### 7.4.2 Expedited Dispute Resolution Procedures for Unresolved Settlement Challenges

#### 7.4.2.1 Applicability of Expedited Dispute Resolution Procedures

This Section 7.4.2 establishes expedited dispute resolution procedures applicable to address any dispute between a Customer and the ISO regarding a Customer settlement that was not resolved in the ordinary settlement review, challenge, and correction process; *provided, however*, that nothing herein shall restrict a Customer or the ISO from seeking redress from the Commission in accordance with the Federal Power Act.

A Customer may request expedited dispute resolution if it has previously presented a settlement challenge consistent with the requirements of Section 7.4.1.1 of this ISO Services Tariff and has received from the ISO a final, written determination regarding the settlement challenge pursuant to Section 7.4.1.2 of this ISO Services Tariff. The scope of an expedited dispute resolution proceeding shall be limited to the subject matter of the Customer's prior settlement challenge. Customer challenges regarding Aggregation, Generator, tie-line, sub-zone Load, and LSE bus metering data shall not be eligible for formal dispute resolution proceedings under this ISO Services Tariff. To ensure consistent treatment of disputes, separate requests for expedited dispute resolution regarding the same issue and the same service month or months may be resolved on a consolidated basis, consistent with applicable confidentiality requirements.

**7.4.2.2 Initiation of Expedited Dispute Resolution Proceeding**

To initiate an expedited dispute resolution proceeding, a Customer shall submit a written request to the ISO Chief Financial Officer within eleven (11) business days from the date that the ISO issues a final, written determination regarding a Customer settlement challenge pursuant to Section 7.4.1.2 of this ISO Services Tariff. A Customer's written request for expedited dispute resolution shall contain: (i) the name of the Customer making the request, (ii) an indication of other potentially affected parties, to the extent known, (iii) an estimate of the amount in controversy, (iv) a description of the Customer's claim with sufficient detail to enable the ISO to determine whether the claim is within the subject matter of a settlement challenge previously submitted by the Customer, (v) copies of the settlement challenge materials previously submitted by the Customer to the ISO, and (vi) citations to the ISO Tariffs and other relevant materials upon which the Customer's settlement challenge relies.

The ISO Chief Financial Officer shall acknowledge in writing receipt of the Customer's request to initiate an expedited dispute resolution proceeding. If the ISO determines that the proceeding would be likely to aid in the resolution of the dispute, the ISO shall accept the Customer's request and provide written notice of the proceeding to all Customers through the ordinary means of communication for settlement issues. The ISO shall provide written notice to the Customer in the event that the ISO declines its request for expedited dispute resolution.

**7.4.2.3 Participation by Other Interested Customers**

Any Customer with rights or interests that would be materially affected by the outcome of an expedited dispute resolution proceeding may participate; *provided, however*, that a

Customer seeking or supporting a change to the NYISO's determination regarding a Customer settlement challenge must have previously raised the issue in a settlement challenge consistent with the requirements of Section 7.4.1.1 of this ISO Services Tariff. To participate, such Customer shall submit to the ISO Chief Financial Officer a written request to participate that meets the requirements for an initiating request for expedited dispute resolution within eleven (11) business days from the date that the ISO issues notice of the expedited dispute resolution proceeding. If the ISO determines that the Customer has met the requirements of this Section 7.4.2.3, the ISO will accept the Customer's request to participate in the dispute resolution proceeding.

**7.4.2.4 Selection of a Neutral**

As soon as reasonably possible following the ISO's acceptance of a Customer's request for expedited dispute resolution under Section 7.4.2.2, the ISO shall appoint a neutral to preside over the proceeding by randomly selecting from a list (i) provided to the ISO by the American Arbitration Association or (ii) developed by the ISO with input from the appropriate stakeholder committee, until an available neutral is found. To the extent possible, the neutral shall be knowledgeable in electric utility matters, including electric transmission and bulk power issues and the financial settlement of electric markets.

No person shall be eligible to act as a neutral who is a past or present officer, employee, or consultant to any of the disputing parties, or of an entity related to or affiliated with any of the disputing parties, or is otherwise interested in the matter in dispute except upon the express written consent of the parties. Any individual appointed as a neutral shall make known to the disputing parties any such disqualifying relationship or interest and a new neutral shall be appointed, unless express written consent is provided by each party.

#### 7.4.2.5 Conduct of the Expedited Dispute Resolution Proceeding

The neutral shall schedule the initial meeting of the disputing parties within five (5) business days of appointment. Except as otherwise provided in this Section 7.4.2, the neutral shall have discretion over the conduct of the dispute resolution process including, but not limited to: (i) requiring the disputing parties to meet for discussion, (ii) allowing or requiring written submissions, (iii) establishing guidelines for such written submissions, and (iv) allowing the participation of Customers that have requested an opportunity to be heard.

Within sixty (60) days of the appointment of the neutral, if the dispute has not been resolved, the neutral shall provide the disputing parties with a written, confidential, and non-binding recommendation for resolving the dispute. The disputing parties shall then meet in an attempt to resolve the dispute in light of the neutral's recommendation. If the disputing parties have not resolved the dispute within ten (10) days of receipt of the neutral's recommendation, the dispute resolution process will be concluded.

Neither the recommendation of the neutral, nor statements made by the neutral or any party, including the ISO, or their representatives, nor written submissions prepared for the dispute resolution process, shall be admissible for any purpose in any proceeding.

#### 7.4.2.6 Allocation of Costs

Each party to a dispute resolution proceeding shall be responsible for its own costs incurred during the process and for a pro rata share of the costs of a neutral.

## 13 Metering

### 13.1 General Requirements

Existing metering in the NYCA provides revenue-quality metering information among the currently designated electrical zones separated by the designated transmission Interfaces. In addition, sufficient metering information will be made available by the ISO to calculate Load for the individual Transmission Owners within each Load Zone. The ISO will require adequate metering for all Generators, Aggregations (including each individual resource within an Aggregation), Co-located Storage Resources, and Loads within the NYCA to ensure the reliable operation of the NYS Power System.

### 13.2 Requirements Pertaining to Customers

Customers shall provide to the ISO such information and data as the ISO reasonably deems necessary in order to perform its functions and fulfill its responsibilities under the ISO Services Tariff and in accordance with the ISO Market Power Monitoring Program. Such information will be provided on a timely basis and in the formats prescribed in the ISO Procedures. The ISO shall establish metering and real-time telemetry specifications and standards for all metering and telemetry used by the ISO, which specifications and standards will be set forth in ISO Procedures. Customers shall install and maintain metering and telemetry hardware and infrastructure at their own expense, and deliver data to the ISO without charge.

A Customer taking service under the ISO Services Tariff will make available to the ISO metered data that meets ISO requirements by one of the following means: (i) direct transmission to the ISO; (ii) direct transmission to the ISO through Transmission Owner communications equipment, or (iii) indirectly through metering provided by the Transmission Owner in whose Load Zone it is located.

Customers shall provide real-time telemetry for Generators and Co-located Storage Resources and Aggregations, nominally every six (6) seconds, in accordance with the specifications set forth in the ISO Procedures.  Real-time telemetry data errors and transmission disruptions shall be remedied in accordance with ISO Procedures.

The Customer also shall provide its metered data to the Transmission Owner in whose Load Zone it is located, to the extent that the Transmission Owner determines that the metered data provided to the ISO is required for its system operation and planning functions, for the billing of services it provides to the Customer, or to perform calculations required as part of the ISO Settlement procedures.

**13.2.1 Load Serving Entities**

Any Load that is not directly metered, as described above, will have its Load determined by the Transmission Owner in whose Load Zone it is located in accordance with the Transmission Owner's retail access plan on file with the PSC or otherwise authorized.

**13.2.2 Ancillary Service Suppliers**

Suppliers shall ensure that adequate metering data is made available to the ISO as described above.  Additionally, for operational purposes, metered data provided to the ISO must also simultaneously be provided to the Transmission Owner, which will handle such information in conformity with the OASIS standards of conduct as specified in Order No. 889.

### 13.2.3 Estimation of Metering

In the event of a meter malfunction or inadequate metering data, the ISO may use estimates to determine Customer's rights and responsibilities under the ISO Services Tariff.

### 13.2.4 Energy Storage Resources

In addition to the metering requirements applicable to Energy Storage Resources because they are Generators, specific metering rules apply to account for Energy injections and withdrawals.

13.2.4.1 An Energy Storage Resource, including an Energy Storage Resource that is electrically located behind the same point of interconnection as a load facility or other Resource, must separately and directly meter Energy injections and withdrawals of the Energy Storage Resource. Such metering must allow the Meter Authority and/or ISO is able to distinguish the Energy injections and withdrawals of the Energy Storage Resource from all other injections and withdrawals behind the point of interconnection.

13.2.4.2 Hourly meter data for Energy Storage Resources shall be reported as two separate components: (i) Energy injections, and (ii) Energy withdrawals. Each component shall be submitted to the NYISO by the Meter Authority in separate fields such that the ISO is able to separately determine the total Energy injections and withdrawals in each interval.

13.2.4.3 If an Energy Storage Resource is electrically located behind the same point of interconnection as a load facility, the Meter Authority shall submit to the ISO (i) directly metered Energy injection and withdrawal data (pursuant to Services Tariff § 13.2.4.2), and (ii) the Load (excluding the Energy injections and withdrawals of the Energy Storage Resource) of the co-located facility behind the point of interconnection (pursuant to OATT § 2.7.4.2.1 (ii) & (iv)).

The ISO Procedures, including the Revenue Meter Requirements Manual (M-25), Control Center Requirements Manual (M-21), and Accounting and Billing Manual (M-14) contain additional information related to metering requirements for Generators and Energy Storage Resources.

## 13.3 Metering Requirements for Demand Side Resources

### 13.3.1 Responsibility for Metering and Meter Data Services for Aggregations and Demand Side Resources

13.3.1.1 An Aggregator, Demand Reduction Provider, DSASP Provider, Responsible Interface Party, or Curtailment Service Provider shall obtain metering and meter data services, as these services are defined in ISO Procedures, from: (i) the Member System in which Transmission District the Aggregation or Demand Side Resource is located, and/or (ii) an authorized Meter Services Entity that the ISO has determined complies with the eligibility requirements pursuant to Section 13.3.2.1, and/or (iii) the municipal electric utility for the municipality in which the Demand Side Resource is electrically located. A Demand Reduction Provider, DSASP Provider, Responsible Interface Party, or Curtailment Service Provider that meets the eligibility requirements in Section 13.3.2.1 may serve as its own Meter Services Entity.

13.3.1.2 The Demand Reduction Provider, DSASP Provider, Responsible Interface Party or Curtailment Service Provider shall be responsible for ensuring that all of the metering and meter data services that are required for it to perform its functions and fulfill its responsibilities under the ISO Tariffs and ISO Procedures are provided by the Member System and/or Meter Services Entity in accordance with the requirements in this Section 13 and ISO Procedures. The Demand Reduction Provider, DSASP Provider, Responsible Interface Party, or Curtailment Service Provider shall be responsible for any applicable penalties issued as a result of metering or meter data services that do not comply with the ISO Tariffs and ISO Procedures, including, but not limited to, penalties issued pursuant to Services Tariff Sections 5.12 and 5.14.

13.3.1.3 A Demand Reduction Provider, DSASP Provider, Responsible Interface Party, or Curtailment Service Provider shall be responsible for any required compensation to the Member System and/or Meter Services Entity concerning the provision of metering and/or meter data services. In accordance with Services Tariff Section 15.10 (Rate Schedule 10), Demand Reduction Provider, DSASP Provider, Responsible Interface Parties and Curtailment Service Providers shall be responsible for the ISO's costs of conducting audits pursuant to Section 13.3.2.3.

## 13.3.2 Meter Services Entity Requirements

### 13.3.2.1 Eligibility Determination for Meter Services Entity

To be authorized as a Meter Services Entity, an entity must complete, to the NYISO's satisfaction, the application requirements specified in Services Tariff Section 13.3.2.1.2 below. Once authorized, a Meter Services Entity must meet the obligations set forth in Services Tariff Sections 13.3.2.1.3 and 13.3.2.1.4. All physical metering infrastructure and meter data communications infrastructure used by a Meter Services Entity must comply with the requirements set forth in the ISO Tariffs and ISO Procedures.

13.3.2.1.1 An entity, including a Demand Reduction Provider, DSASP Provider, Responsible Interface Party, or Curtailment Service Provider, seeking to be a Meter Services Entity must submit to the ISO an application containing the eligibility information required pursuant to Section 13.3.2.1.2, accompanied by a non-refundable application fee of $1,000. The ISO shall review the application within thirty (30) calendar days of its receipt of the application and fee, and notify the applicant whether the application is sufficient to register the applicant as a Meter Services Entity or otherwise requires additional information. Any additional information required shall be received by the ISO within the timeframe specified by the ISO in its request for additional information. The ISO shall reject the application of an entity seeking to become a Meter Services Entity if the required information is not received within the specified timeframe or an alternative, mutually agreed to timeframe.

Upon the ISO's affirmative determination of an entity's eligibility, the entity will be registered with the ISO and authorized to serve as a Meter Services Entity in order to provide metering and/or meter data services, as applicable, to a Demand Reduction Provider, DSASP Provider, Responsible Interface Party, or Curtailment Service Provider. The ISO shall post on its website a list of all authorized Meter Services Entities.

If the ISO determines an entity is not eligible to serve as a Meter Services Entity, the ISO shall provide the entity with the reasons for such determination. An entity that seeks to re-apply to be a Meter Services Entity shall also be required to pay the $1,000 application fee.

13.3.2.1.2 An entity seeking to be a Meter Services Entity must provide, at a minimum, the following eligibility information, as detailed in ISO Procedures: (i) financial eligibility and insurance coverage information; (ii) proof of eligibility to do business in New York State; (iii) a list of the Transmission Owner(s) service territory(ies) in which it will provide services; (iv) a description of the metering and/or meter data services that it will provide; (v) its attestation of its employees' qualifications, training, and certification to perform the listed services; (vi) a description of the meter testing laboratory facilities, including its attestation that its meter testing programs comply with ISO Procedures and Good Utility Practice; (vii) its agreement that its services will be subject to audit by the ISO, the Transmission Owners, and/or their designated agents, as applicable; (viii) its agreement to comply with the metering requirements in the ISO Tariffs and ISO Procedures, as such requirements may be amended from time to time; (ix) a revenue-grade settlement meter and real-time telemetry data plan; (x) a meter data validation, editing, and estimation plan; (xi) a security plan and description of how it will protect meter equipment and/or meter data from unauthorized physical or electronic entry or tampering; (xii) a description of how and where records of meter installations and/or meter data will be kept, and its agreement to retain these records in accordance with the ISO's recordkeeping requirements; and (xiii) any other information required by ISO Procedures or requested by the ISO.

13.3.2.1.3 A Meter Services Entity shall promptly inform the ISO, in accordance with ISO procedures, of any material change to the eligibility information it has previously submitted to the ISO pursuant to Section 13.3.2.1.2. The ISO shall review all such material changes and determine whether the Meter Services Entity complies with all eligibility requirements. If the NYISO determines that the

Meter Services Entity does not comply with the eligibility requirements, it may suspend the Meter Services Entity's eligibility until such time that it complies with those eligibility requirements.

13.3.2.1.4 The ISO shall inform registered Meter Services Entities of changes related to Meter Services Entity eligibility requirements via posting to the ISO's public website and electronic mail. A Meter Services Entity has a continuing obligation to comply with the eligibility requirements in this Section 13 and ISO Procedures and the metering and meter data requirements in the ISO Tariffs and ISO Procedures, as the requirements may be amended from time to time. Each Meter Services Entity shall inform the ISO, in accordance with ISO Procedures, and received by the date specified in the ISO's posting, of its compliance with the identified changes to eligibility criteria. If the Meter Services Entity is unable to comply with the changes by the specified date, it shall provide the ISO with a detailed plan to comply. The ISO shall review all such plans and determine whether to extend the compliance deadline, or to suspend the Meter Services Entity's eligibility until such time that it complies with all eligibility requirements.

**13.3.2.2 Standards of Conduct for Meter Services Entities**

A Meter Services Entity must treat all customers, Affiliated and non-Affiliated, on a non-discriminatory basis, and must not make or grant any undue preference or advantage to any person or subject any person to any undue prejudice or disadvantage with respect to the provision of metering services authorized by Services Tariff Section 13.3.

**13.3.2.3 ISO Audits and Corrective Actions**

13.3.2.3.1 The ISO or its designated entity may, upon reasonable notice, perform an audit, inspection, and/or test of the Meter Services Entity's metering facilities, meters, and/or meter data records to ensure they comply with the ISO Tariffs and ISO Procedures and with the Meter Services Entity's plans submitted to the ISO. Meter Services Entities must comply with, i) periodic audits of meter data records and meter data collection and retention services and protocols provided to the Market Participant by the Meter Services Entity; and ii) audits of the metering facilities, meter data records and meter data collection and retention services and protocols utilized by the Market Participant and the Meter Services Entity when the Market Participant enrolls new resources or modifies the metering scheme of existing resources.

The ISO's audit of a MSE's services may involve, but is not limited to, the ISO's review, inspection, performance testing and review of corrective actions taken in the following categories:

A) Validation, Estimation, & Editing (VEE) methodology;

B) Site meter configurations;

C) Meter compliance with ISO rules and procedures;

D) Meter Services Entity operational protocols, procedures, and record keeping, and compliance with ISO rules and procedures; and

E) Telemetry and communication data and records.

13.3.2.3.2 If the ISO determines, at any time, that a Meter Services Entity does not comply with the eligibility requirements or does not comply with the metering or meter data requirements set forth in the ISO Tariffs and ISO Procedures, the ISO may suspend or revoke the eligibility of the Meter Services Entity.

### 13.3.3 Metering Requirements for Aggregated Resources

Aggregators shall ensure that all measurements for metering and telemetry for the individual DER they represent, derive from either directly measured or calculated values, or a combination thereof, in accordance with the requirements set forth in ISO procedures.

## 15.2 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 and Customers will purchase Voltage Support Service from the ISO under the ISO OATT.

Suppliers provide Voltage Support Service from eligible providers, which are Generators with an automatic voltage controlling equipment ("Generators," for the purpose of this Rate Schedule 2), synchronous condensers, and Qualified Non-Generator Voltage Support Resources. Aggregations are not eligible to provide Voltage Support Service.

Qualified Suppliers of Voltage Support Service shall be referred to as such or as Voltage Support Resources in this Rate Schedule. An RMR Generator operating under an RMR Agreement that provided Voltage Support Service at any time during the most recent twelve (12) months that it participated in the ISO Administered Markets must provide Voltage Support Service during the term of its RMR Agreement, unless it demonstrates to the ISO's satisfaction that it is no longer capable of providing the service. An Interim Service Provider that is required to keep its generating units in service and that provided Voltage Support Service during the most recent twelve (12) months that it participated in the ISO Administered Markets must continue to provide Voltage Support Service, unless it demonstrates to the ISO's satisfaction that it is no longer capable of providing the service. The rate provided in this Rate Schedule shall be used to calculate payments to eligible Suppliers providing Voltage Support Service as applied on a technology-specific basis. The ISO shall calculate payments on an annual basis, and make payments monthly.

### 15.2.1 Responsibilities

The ISO shall coordinate the Voltage Support Service provided by Suppliers that qualify to provide such services as described in Section 15.2.1.1 of this Rate Schedule 2. The ISO shall also establish methods and procedures for Reactive Power (MVAr) capability testing.

#### 15.2.1.1 Suppliers

To qualify for payments, Suppliers of Voltage Support Service shall provide a Generator that has automatic voltage controlling equipment, or a Qualified Non-Generator Voltage Support Resource with automatic voltage controlling equipment, other than the Cross Sound Scheduled Line, or a synchronous condenser, each of which must be electrically located within the NYCA. Automatic voltage controlling equipment includes but is not limited to an Automatic Voltage Regulator ("AVR") for non-inverter-based Generators or inverters capable of automatic voltage control for inverter-based Generators. All Suppliers of Voltage Support Service must successfully perform Reactive Power (MVAr) capability testing in accordance with the ISO Procedures and prevailing industry standards. The ISO may direct Qualified Suppliers of Voltage Support Service to operate their Voltage Support resources within these demonstrated reactive capability limits. Qualified Suppliers of Voltage Support Service will test their Voltage Support Resources and provide these services in accordance with ISO Procedures.

Voltage Support Service includes the ability to produce or absorb Reactive Power within the Voltage Support 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 Voltage Support Resource's stated reactive capability. The requirement for a Voltage Support Resource to absorb Reactive Power may be set aside by the ISO with input from the Transmission Owner in whose Transmission District the Voltage Support Resource is located, which input may include, at the Transmission Owner's option, an executive level review.  To grant an exemption from the requirement that the Voltage Support Resource be able to absorb Reactive Power, the ISO shall have determined that: 1) the Voltage Support Resource is unable, due to transmission system configuration, to absorb Reactive Power; 2) the ability of the Voltage Support Resource to produce Reactive Power is needed for system reliability; and 3) for purposes of system reliability the Voltage Support Resource does not need to have the ability to absorb Reactive Power.

An RMR Generator that is required to provide Voltage Support Service must timely perform the annual testing applicable to all Suppliers of Voltage Support Service described in this Section 15.2.1 and in ISO Procedures so that it remains continuously eligible to provide Voltage Support Service during the term of its RMR Agreement.  If such an RMR Generator did not timely perform all of the annual testing required for it to provide Voltage Support Service prior to the start of the term of its RMR Agreement, then the ISO shall permit the RMR Generator to perform Reactive Power (MVAr) capability testing in accordance with the ISO Procedures upon entering the RMR Agreement and shall permit the RMR Generator to be a Qualified Supplier of Voltage Support Service.  An Interim Service Provider that is required to keep its generating units in service must timely perform the annual testing applicable to all Suppliers of Voltage Support Service described in this Section 15.2.1 and in ISO Procedures so that it remains continuously eligible to provide Voltage Support Service.  If such an Interim Service Provider did not timely perform all of the annual testing required for it to provide Voltage Support Service, then the ISO shall permit the Interim Service Provider to perform Reactive Power (MVAr) capability testing in accordance with the ISO Procedures promptly upon becoming an Interim Service Provider and shall permit the Interim Service Provider to be a Qualified Supplier of Voltage Support Service.

### 15.2.2 Payments

Each month, Suppliers whose Generator(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 (1/12th) of the annual payment calculated under Section 15.2.2.1 of this Rate Schedule  for Voltage Support Service.

Each month, Suppliers whose Generators are not under contract to supply Installed Capacity, Suppliers with synchronous condensers, and, except as noted in the following paragraph, Qualified Non-Generator Voltage Support Resources shall receive one-twelfth (1/12th) of the annual payment calculated under Section 15.2.2.1 of this Rate Schedule , pro-rated by the number of hours that the Generator, synchronous condenser, or Qualified Non-Generator Voltage Support Resource operated in that month, as recorded by the ISO.

Each month, the Cross-Sound Scheduled Line shall receive one-twelfth (1/12th) of the annual payment calculated under Section 15.2.2.1 of this Rate Schedule, pro-rated by the number of hours that it is energized in that month, as recorded by the ISO.

#### 15.2.2.1 Annual Payment for Voltage Support Service

For purposes of the calculation set forth in Section 15.2.2 of this Rate Schedule, the annual payment to Suppliers qualified and eligible to provide Voltage Support Service shall equal the product of the VSS Compensation Rate and the sum of the lagging and the absolute value of the leading MVAr capacity of the resource, as evidenced by tests conducted pursuant to ISO Procedures.

For VSS Suppliers that are CSR Generators, compensation for each VSS Supplier shall be limited to the lesser of its Reactive Power capability, demonstrated in accordance with ISO procedures, or the total Reactive Power capability at the CSR's Point of Injection/Point of Withdrawal.

The VSS Compensation Rate of $2,592/MVAr, as determined in 2014, shall be adjusted annually by the annual average Consumer Price Index of the previous year.

#### 15.2.2.2 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 Generator to reduce its real power (MW) output below its Economic Operating Point in order to allow the Generator to produce or absorb more Reactive Power (MVAr), unless the Supplier is already receiving a Day-Ahead Margin Assurance Payment for that reduction under Attachment J to this ISO Services Tariff. The Lost Opportunity Cost payment shall be calculated as the maximum of zero or the difference between: (i) the product of: (a) the appropriate MW of output reduction and (b) the Real-Time LBMP at the Generator bus; and (ii) the Generator's Energy Bid for the reduced output of the Generator multiplied by the time duration of reduction in hours or fractions thereof.

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

$$LOC_i = max\left(\left(LBMP_{RT,i} * \left(EOP_i - max(AEI_i, RTS_i, DAS_i)\right) - \int_{max(AEI_i, RTS_i, DAS_i)}^{EOP_i} Bid\right), 0\right) * \frac{S_i}{3600}$$

Where:

$LOC_i$ = Lost Opportunity Cost for interval *i*

$LBMP_{RT,i}$ = Real-time LBMP for interval *i*

$EOP_i$ = The Generator's Economic Operating Point for interval *i*

$AEI_i$ = The Generator's Actual Energy Injection for the interval *i*

$RTS_i$ = The Generator's Real-Time Energy Schedule for interval *i*

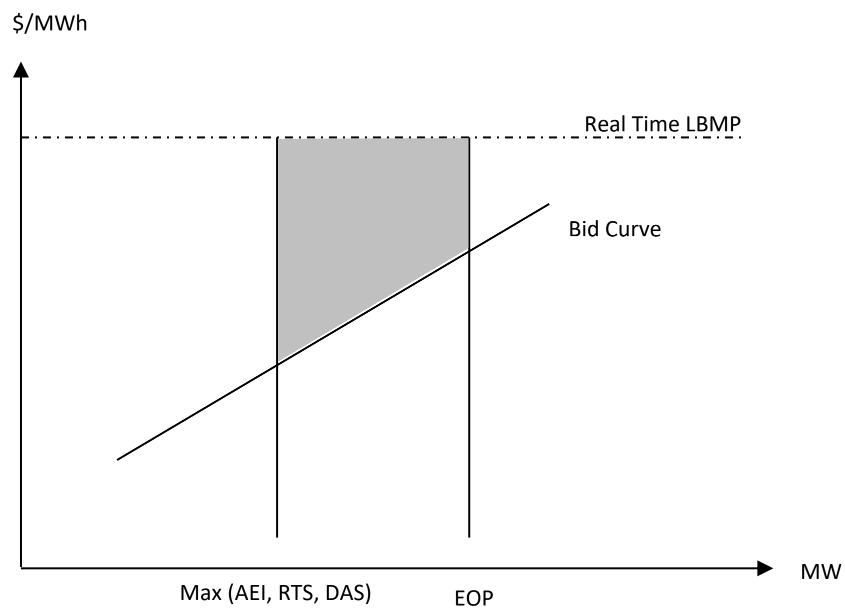
$DAS_i$ = The Generator's Day-Ahead Schedule for the hour containing *i*

$Bid_i$ = Generator's Bid curve in effect for interval *i*

$S_i/3600$ = The length of interval *i*, containing $S_i^{seconds}$ in units of hours

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).

**Figure 2.0(b) - Incremental Bid Curve Used to Calculate LOC**




### 15.2.2.3 Other Payments to Synchronous Condensers and Qualified Non-Generator Voltage Support Resources

If a synchronous condenser or Qualified Non-Generator Voltage Support Resource energizes in order to provide Voltage Support Service in response to a request from the ISO, the

ISO shall compensate the facility for the cost of Energy it consumes to energize converters and other equipment necessary to provide that Voltage Support Service.

### 15.2.3 Failure to Perform by Suppliers

A Generator, synchronous condenser, or a Qualified Non-Generator Voltage Support Resource will have failed to provide voltage support if it:

15.2.3.1 when operating at real-power levels consistent with test conditions, fails within ten minutes to be within 5% (+/-) of the requested Reactive Power (MVAr) level of production or absorption as requested by the ISO or applicable Transmission Owner unless it was prevented from doing so by transmission system conditions and except when the Voltage Support Resource is requested not to produce or absorb Reactive Power in which case that Voltage Support Resource fails to provide Voltage Support if the absolute value of its level of Reactive Power production or absorption within ten minutes is greater than 5% multiplied by the sum of the absolute values of (a) that Voltage Support Resource's maximum reactive power production level under test conditions and (b) that Voltage Support Resource's maximum reactive power absorption level under test conditions;

15.2.3.2 when operating at real-power levels consistent with test conditions, fails within ten minutes to be at 95% or greater of the Voltage Support Resource's demonstrated Reactive Power capability (tested pursuant to ISO Procedures) 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 unless it was prevented from doing so by transmission system conditions;

15.2.3.3 fails to provide Voltage Support Service in a Contingency, as defined by ISO Procedures;

15.2.3.4 fails to maintain its automatic voltage controlling equipment (as appropriate) in service and in automatic voltage control mode, or fails to commence timely repairs to the automatic voltage controlling equipment.

Suppliers of Voltage Support Service that fail to comply with the ISO Procedures will be assessed charges by the ISO in the manner described in Sections 15.2.4, 15.2.5, and 15.2.6 below.

**15.2.4 Failure to Respond to ISO's Request for Steady-State Voltage Control**

Failure: If a Voltage Support 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 the VSS Failure to Perform Penalty for that specific Generator, synchronous condenser, or Qualified Non-Generator Voltage Support Resource for that month. 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.

The formula below describes the monthly VSS Failure to Perform Penalty (VFP)

$$VFP = (VSS\ payment\ for\ the\ month) * (F/R)$$

Where:

$F$ = number of failures in the month

$R$ = number of times the Voltage Support Resource was called upon for Voltage Support in the month

Repeated Failures:  In addition to the charges for failure, the non-complying Supplier will also be subject to the charges described in this paragraph.  If a Supplier’s Voltage Support Resource fails to comply with fifty percent (50%) or more of the ISO's requests for two consecutive months, then the non-complying Supplier will no longer be eligible for Voltage Support Service payments for service provided by that Voltage Support Resource.  The ISO may reinstate payments once the Supplier complies with the following conditions to the ISO's satisfaction:

15.2.4.1 the Supplier's Voltage Support Resource must successfully perform a Reactive Power (MVAr) capability test, and

15.2.4.2 the Supplier’s Voltage Support 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 on account of Voltage Support Service from such Voltage Support Resource during this period.

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

If a Supplier's Voltage Support 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 payment for the specific Voltage Support Resource (or an amount equal to the last month's voltage support payment made to it, if it 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 payment for the specific Voltage Support Resource (or an amount equal to the last three (3) months' voltage support payments made to it, if it 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 Voltage Support Resource until the Supplier complies with the following conditions to the ISO's satisfaction:

15.2.5.1 the Supplier's Voltage Support Resource shall successfully perform a Reactive Power (MVAr) capability test, and

15.2.5.2 the Supplier’s Generator, synchronous condenser, or Qualified Non-Generator Voltage Support 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 on account of Voltage Support Service from such Generator, synchronous condenser, or Qualified Non-Generator Voltage Support Resource during this period.

### 15.2.6 Failure to Maintain Automatic Voltage Controlling Equipment or Commence Timely Repairs

If a Supplier’s Voltage Support Resource, other than the Cross Sound Scheduled Line, fails to maintain its automatic voltage controlling equipment and fails to notify the ISO, in accordance with ISO procedures, of an outage lasting more than thirty (30) days the Voltage Support Resource will be disqualified as a supplier of Voltage Support Service.

The Supplier will not receive Voltage Support Service payments for the disqualified Voltage Support Resource until the Supplier complies with the following conditions:

(1) the Supplier provides documentation to the NYISO of the completion of the repairs;

(2) the Supplier’s Voltage Support Resource successfully performs a Reactive Power (MVAr) capability test, and;

(3) the Supplier's Voltage Support Resource provides Voltage Support Service for thirty (30) consecutive days without any compliance failures. No payments for Voltage Support Service or LOC on account of Voltage Support Service from such Generator or Qualified Non-Generator Voltage Support Resource shall be made to the Supplier during this period.

If, in accordance with ISO procedures, a Qualified Supplier of Voltage Support Service notifies the ISO within thirty days of an automatic voltage controlling equipment outage that lasts longer than thirty days, but the Supplier fails to commence timely and appropriate repairs, the Voltage Support Resource will remain in the VSS program and will receive one half its full monthly VSS payment. The Voltage Support Resource will begin receiving full monthly VSS payment when its automatic voltage controlling equipment returns to full functionality. The Voltage Support Resource will not be eligible for VSS payment in the next compensation year if it fails to repair its automatic voltage controlling equipment and perform an acceptable test in accordance with ISO procedures.

**15.2.7 Consistence with Cross-Sound Scheduled Line Protocols**

Nothing in this Rate Schedule shall be construed to change existing protocols between the ISO and ISO New England, Inc. regarding the operation of the Cross-Sound Scheduled Line.

## 15.3 Rate Schedule 3 - Payments for Regulation Service

This Rate Schedule applies to Suppliers that provide Regulation Service to the ISO. The following Resources are not eligible to provide Regulation Service: (1) Behind-the-Meter Net Generation Resources that are comprised of more than one generating unit and that are dispatched as a single aggregate unit, (2) Aggregations that are comprised of one or more generating units (unless each of those generating units use inverter-based energy storage technology), and (3) Aggregations of Demand Side Resources where at least one Demand Side Resource facilitates its Demand Reduction by utilizing a Local Generator (unless each Local Generator uses inverter-based energy storage technology). 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:

(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 this Rate Schedule;

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

(h) Take into account the speed and accuracy of regulation resources in determining reserve requirements for Regulation Service.

**15.3.1.2 Each Supplier shall:**

(a) Register with the ISO the Regulation 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;

(d) Not use, contract to provide, or otherwise commit Regulation Capacity that is selected by the ISO to provide Regulation Service to provide Energy or Operating Reserves to a Balancing Authority other than the ISO;

(e) Pay any charges imposed under this Rate Schedule;

(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.

**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) In order to schedule Suppliers in the Day-Ahead Market to provide Regulation Service for each hour in the following 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 Market Prices 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 15.3.5.1 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**

(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 capability (in MW) that the Resource is willing to provide as Regulation Capacity; (ii) the Supplier's Bid Price (in $/MW) for Regulation Capacity; and (iii) the Suppliers Bid Price (in $/MW) for Regulation Movement.

(d) Regulation Service Offers from Limited Energy Storage Resources: The ISO may reduce the real-time Regulation Capacity offer (in MWs) from a Limited Energy

Storage Resource or an Aggregation of Limited Energy Stroage Resources to account for the Energy storage capacity of such Resource.

(e) Regulation Service Offers from Energy Storage Resources: The ISO may reduce the real-time Regulation Capacity (in MW) from an Energy Storage Resource or an Aggregation of Limtied Energy Storage Resources to account for the Energy Level 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 ISO shall use the values provided by the Performance Tracking System to adjust settlements for real-time Regulation Movement pursuant to Section 15.3.5.4.1 and to compute a performance charge to apply to real-time Regulation Service providers pursuant to Section 15.3.5.4.2 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 Prices

The ISO shall calculate a Day-Ahead Regulation Capacity Market Price for each hour of the following day. The Day-Ahead Regulation Capacity Market 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 (or purchase by a Withdrawal-Eligible Generator) of Energy or the sale of 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 (or for a Withdrawal-Eligible Generator to withdraw) less Energy or to provide less 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 Price in each hour, multiplied by the amount of Regulation Capacity that it is scheduled Day-Ahead to provide in that hour.

#### 15.3.4.2 Other Day-Ahead Payments

A Supplier that bids on behalf of a Generator or Aggregation 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 Prices

The ISO shall calculate a Real-Time Regulation Capacity Market Price and a Real-Time Regulation Movement Market Price for every RTD interval, except as noted in Section 15.3.8 of this Rate Schedule. The Real-Time Regulation Capacity Market 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 (or for Withdrawal-Eligible Generators, the purchase) of Energy or the sale of 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 or withdraw less Energy or to provede less 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 15.3.8 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 Real-Time Regulation Capacity Balancing Payments, Regulation Movement Payments and Performance Charges

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 Capacity schedule is less than its Day-Ahead Regulation Capacity schedule, the Supplier shall pay a charge for the imbalance equal to the product of: (i) the Real-Time Regulation Capacity Market

Price; and (ii) the difference between the Supplier's Day-Ahead Regulation Capacity schedule and its real-time Regulation Capacity schedule.

(b) When the Supplier's real-time Regulation Capacity schedule is greater than its Day-Ahead Regulation 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 Market Price; and (ii) the difference between the Supplier's real-time Regulation Capacity schedule and its Day-Ahead Regulation 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 15.3.5.4.1.

(d) The ISO shall assess a performance charge, pursuant to Section 15.3.5.4.2 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.

#### 15.3.5.3 Other Real-Time Regulation Service Payments

A Supplier that bids on behalf of a Regulation Service provider 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 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.

#### 15.3.5.4 Performance-Based Adjustment to Payments for Regulation Service Providers and Performance Based Charges

##### 15.3.5.4.1 Performance-Based Adjustment to Payments for Regulation Service Suppliers

The amount paid to each Supplier for providing Regulation Movement in each RTD interval, pursuant to Section 15.3.5.2 shall be reduced to reflect the Supplier's performance using a performance factor developed pursuant to the following equation:

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

Where:

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

$PI_i$ = 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

$PSF$ = the payment scaling factor, established pursuant to ISO Procedures. The PSF shall be set between 0 and the minimum performance index required for payment for Regulation Service.

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.

**15.3.5.4.2 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.

$$Performance\ Charge_i = \Big(\big((1 - K_{PIi}) * RTRinccap_i * \text{-}1.1 * RTMPreg_i\big) + \big(((1 - K_{PIi}) * (RTRcap_i - RTRinccap_i) * \text{-}1.1) * Max(DAMPreg_i, RTMPreg_i)\big)\Big) * (S_i/3600)$$

$DAMPreg_i$ = 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*;

$RTMPreg_i$ = 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*;

$RTRcap_i$ = 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 15.3.5.4.1.

### 15.3.6 Energy Settlement Rules for Suppliers Providing Regulation Service

#### 15.3.6.1 Energy Settlements

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

B. Demand Reductions from Aggregations providing Regulation Service are only eligible for payment for Energy when the real-time LBMP, at the Aggregation's Transmission Node, meets or exceeds the Net Benefits Test Threshold calculated in accordance with Section 4.5.7 of the Services Tariff for the applicable period. When the Net Benefits Test Threshold is satisfied, such Aggregations shall receive an Energy payment for Demand Reductions equal to the lower of the Demand Reductions' contribution to the actual Energy provided or the Aggregation's AGC Base Point Signal.

C. For any hour in which a Limited Energy Storage Resource or Aggregation of Limited Energy Storage Resources 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:

$$Energy\ Settlements_h = Net\ MWHR_h * LBMP_h$$

Where:

$Net\ MWHR_h$ = the amount of Energy injected by the Limited Energy Storage Resource or Aggregation of Limited Energy Storage Resources in hour $h$ minus the amount of Energy withdrawn by that Limited Energy Storage Resource or Aggregation of Limited Energy Storage Resources in hour $h$

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

### 15.3.6.2 Additional Payments/Charges

For any interval in which a Supplier that is providing Regulation Service receives an AGC Base Point Signal that 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 or Aggregation of Limited Energy Storage Resources.

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

For any interval in which a Supplier 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 Supplier is higher than the LBMP at its location in that interval, the Supplier shall receive a RRAP. Conversely, for any interval in which such a Supplier's Energy Bid Price is lower than the LBMP at is location at that interval, the Supplier shall be assessed a RRAC. RRAPs and RRACs shall be calculated using the following formula:

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

Where:

$S$ = the number of seconds in the RTD interval;

If the result of the calculation is positive then the Supplier shall receive a RRAP. If it is negative then the Supplier shall be subject to a RRAC. For purposes of applying this formula, whenever the Supplier's actual Bid exceeds the applicable LBMP the "Bid" term shall be set at a level equal to the lesser of the Supplier'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.

#### 15.3.6.2.2 Additional Charges/Payments When AGC Base Point Signals Are Lower than RTD Base Point Signals

For any interval in which a Supplier 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 Supplier is higher than the LBMP at its location in that interval, the Supplier shall be assessed a RRAC. Conversely, for any interval in which such a Supplier's Energy Bid Price is lower than the LBMP at its location in that interval, the Supplier shall receive a RRAP. RRAPs and RRACs shall be calculated using the following formula:

$$Payment/Charge = \int_{min(RTD\ BasePoint\ Signal, max(AGC\ BasePoint\ Signal, Actual\ Output))}^{RTD\ BasePoint\ Signal} -[Bid - LBMP] * S/3600$$

Where:

$S$ = the number of seconds in the RTD interval;

If the result of the calculation is positive then the Supplier shall receive a RRAP. If it is negative then the Supplier shall be subject to a RRAC. For purposes of this formula, whenever the Supplier's actual Bid is lower than the applicable LBMP the "Bid" term shall be set at a level equal to the higher of the Supplier'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.

### 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 Capacity Market Price and settlements. The Regulation Capacity Market Prices 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 scheduled by SCUC, 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 Capacity 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 Capacity 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 $775/MW.

For quantities of Regulation Capacity 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 $525/MW.

For quantities of Regulation Capacity 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 $25/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 Capacity 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 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, The ISO will establish real-time Regulation Market Prices for Regulation Capacity and Regulation Movement of zero for settlement and balancing purposes. The ISO will restore real-time Regulation Service schedules as soon as possible after the end of the reserve or maximum generation pickup.

## 15.3A Rate Schedule "3-A" -Charges Applicable to Suppliers That Are Not Providing Regulation Service

### 15.3A.1 Persistent Undergeneration Charges

A Supplier, other than a Supplier exempted in Section 15.3A.2 of this Rate Schedule, that is not providing Regulation Service, and persistently operates at a level below its schedule to provide Energy shall pay a persistent undergeneration charge to the ISO, unless its operation is within a tolerance described below, provided, however, no persistent undergeneration charges shall apply to a Fixed Block Unit that has reached a percentage of its Normal Upper Operating Limit, which percentage shall be set pursuant to ISO Procedures and shall be initially set at seventy percent (70%). Persistent undergeneration charges per interval shall be calculated as follows:

$$\text{Persistent undergeneration charge} = \text{Energy Difference} \times \text{Max}(MPRC_{DAM}, MPRC_{RT}) \times \text{Length of Interval in seconds}/3600 \text{ seconds}$$

Where:

Energy Difference in (MW) is determined by subtracting the actual Energy provided by the Supplier from its RTD Base Point Signal for the dispatch interval. The Energy Difference shall be set at zero for any Energy Difference that is otherwise negative or that falls within a tolerance, set pursuant to ISO Procedures, and which shall contain a steady-state and a dynamic component. The steady-state component shall initially be 3% of the Supplier's Normal Upper Operating Limit or Emergency Upper Operating Limit, as applicable, and the dynamic component shall be a time constant that shall initially be set at fifteen minutes;

$MPRC_{DAM}$ is the Regulation Capacity Market Price in the Day-Ahead Market; and

$MPRC_{RT}$ is the Regulation Capacity Market Price in the Real-Time Market.

#### 15.3A.1.1 Overgeneration Charges

An Intermittent Power Resource that depends on wind or solar energy as its fuel, for which the ISO has imposed a Wind and Solar Output Limit that operates at a level above its schedule shall pay an overgeneration charge to the ISO, unless its operation is within a tolerance described below.

Overgeneration charges per interval shall be calculated as follows:

$$\text{Overgeneration charge} = \text{Energy Difference} \times \text{Max}(MPRC_{DAM}, MPRC_{RT}) \times \text{Length of Interval in seconds}/3600 \text{ seconds}$$

Where:

Energy Difference in (MW) is determined by subtracting the RTD Base Point Signal for the dispatch interval from the actual Energy provided by the Intermittent Power Resource for the same interval. The Energy Difference shall be set at zero for any Energy Difference that is otherwise negative or that falls within a tolerance, set pursuant to ISO Procedures, which shall initially be set at 3% of the Supplier's Normal Upper Operating Limit or Emergency Upper Operating Limit, as applicable;

$MPRC_{DAM}$ is the Regulation Capacity Market Price in the Day-Ahead Market; and

$MPRC_{RT}$ is the Regulation Capacity Market Price in the Real-Time Market

#### 15.3A.1.2 Persistent Over-Withdrawal Charges

An Energy Storage Resource, an Aggregation of Energy Storage Resources, or DER Aggregation that includes at least one Withdrawal-Eligible Generator that is (a) scheduled to withdraw Energy, (b) not providing Regulation Services, and (c) persistently withdrawing Energy at a level exceeding its withdrawal schedule shall pay a persistent over-withdrawal charge to the ISO unless its operation is within the applicable tolerance described below. Persistent over-withdrawal charges per interval shall be calculated as follows:

$$\text{Persistent Over-Withdrawal Charge} = \text{Energy Difference} \times \text{Max}(MPRC_{DAM}, MPRC_{RT}) \times \text{Length of Interval in seconds}/3600 \text{ seconds}$$

Where:

Energy Difference in (MW) is determined by subtracting the Resource's actual energy operating level from its RTD Base Point Signal. The Energy Difference shall be set at zero for any Energy Difference that is otherwise negative or that falls within a tolerance, set pursuant to ISO Procedures, and which shall contain a steady-state and a dynamic component. The steady-state component shall initially be an absolute value of 3% of the Resource's Maximum Withdrawal Limit, as applicable, and the dynamic component shall be a time constant that shall initially be set at fifteen minutes;

$MPRC_{DAM}$ is the Regulation Capacity Market Price in the Day-Ahead Market; and

$MPRC_{RT}$ is the Regulation Capacity Market Price in the Real-Time Market.

**15.3A.2 Exemptions**

The following types of Generator shall not be subject to persistent undergeneration charges:

15.3A.2.1 Generators, except for the Generator of a Behind-the-Meter Net Generation Resource and a Generator in an Aggregation, providing Energy under contracts (including PURPA contracts), executed and effective on or before November 18, 1999, in which the power purchaser does not control the operation of the supply source but would be responsible for payment of the persistent undergeneration or performance charge;

15.3A.2.2 Existing topping turbine Generators and extraction turbine Generators producing electric Energy resulting from the supply of steam to the district steam system in operation on or before November 18, 1999 and/or Generators utilized in replacing or repowering existing steam supplies from such units (in accordance with good engineering and economic design) that cannot follow schedules, up to a maximum total of 533 MW of such units;

15.3A.2.3 Limited Control Run of River Hydro Resources;

15.3A.2.4 Intermittent Power Resources and Aggregations of Intermittent Power Resources that depend on landfill gas as their fuel;

15.3A.2.5 Intermittent Power Resources and Aggregations of Intermittent Power Resources that depend on wind or solar energy as their fuel;

15.3A.2.6 Capacity Limited Resources, Aggregations of Capacity Limited Resources, Energy Limited Resources and Aggregations of Capacity Limited Resources, to the extent that their real-time Energy injections are equal to or greater than their bid-in upper operating limits but are less than their Real-Time Scheduled Energy Injections;

15.3A.2.7 Generators operating in their Start-Up Period or their Shutdown Period and, for Generators comprised of a group of generating units at a single location, which grouped generating units are separately committed and dispatched by the ISO, and for which Energy injections are measured at a single location, each of the grouped generating units when one of the grouped generating units is operating in its Start-Up or Shutdown Period; and

15.3A.2.8 Generators operating during a Testing Period.

15.3A.2.9 Energy Storage Resources with schedules to withdraw Energy are instead subject to persistent over-withdrawal charges.

For Generators and Resources described in Sections 15.3A.2.1, 15.3A.2.2, 15.3A.2.3, and 15.3A.2.4 above, this exemption shall not apply in an hour if the Generator or Resource has bid in that hour as ISO-Committed Flexible or Self-Committed Flexible.

## 15.4 Rate Schedule 4 - Payments for Supplying Operating Reserves

This Rate Schedule applies to payments to Suppliers that provide Operating Reserves to the ISO. Transmission Customers will purchase Operating Reserves from the ISO under Rate Schedule 5 of the ISO OATT.

### 15.4.1 General Responsibilities and Requirements

#### 15.4.1.1 ISO Responsibilities

The ISO shall procure on behalf of its Customers a sufficient quantity of Operating Reserve products to comply with the Reliability Rules and with other applicable reliability standards, as well as Scarcity Reserve Requirements. These quantities shall be established under Section 15.4.7 of this Rate Schedule for locational Operating Reserve requirements and Section 15.4.6.2 of this Rate Schedule for Scarcity Reserve Requirements. To the extent that the ISO enters into Operating Reserve sharing agreements with neighboring Control Areas its Operating Reserves requirements shall be adjusted as, and where, appropriate.

The ISO shall define requirements for Spinning Reserve, which may be met only by Suppliers that are eligible, under Section 15.4.1.2 of this Rate Schedule, to provide Spinning Reserve; 10-Minute Reserve, which may be met by Suppliers that are eligible to provide either Spinning Reserve or 10-Minute Non-Synchronized Reserve; and 30-Minute Reserve, which may be met by Suppliers that are eligible to provide any Operating Reserve product. The ISO shall also define locational requirements for Spinning Reserve, 10-Minute Reserve, and 30-Minute Reserve located East of Central-East, in Southeastern New York, in New York City, and on Long Island. In addition to being subject to the preceding limitations on Suppliers that can meet each of these requirements, the requirements for Operating Reserve located East of Central-East may only be met by eligible Suppliers that are located East of Central-East, requirements for

Operating Reserve located in Southeastern New York may only be met by eligible Suppliers that are located in Southeastern New York, requirements for Operating Reserve located in New York City may only be met by eligible Suppliers that are located in New York City, and requirements for Operating Reserve located on Long Island may only be met by eligible Suppliers located on Long Island. Each of these Operating Reserve requirements shall be defined consistent with the Reliability Rules and other applicable reliability standards. The ISO shall also establish Scarcity Reserve Requirements in the Real-Time Market pursuant to Section 15.4.6.2 of this Rate Schedule, which may be met by Suppliers eligible to provide 30-Minute Reserve. Scarcity Reserve Requirements may only be met by eligible Suppliers that are located in the Scarcity Reserve Region associated with a given Scarcity Reserve Requirement. The ISO shall select Suppliers of Operating Reserves products to meet these requirements, including the locational Operating Reserves requirements and Scarcity Reserve Requirements, as part of its overall co-optimization process.

The ISO shall select Operating Reserves Suppliers that are properly located electrically so that all locational Operating Reserves requirements determined consistently with the requirements of Section 15.4.7 of this Rate Schedule and Scarcity Reserve Requirements determined consistently with the requirements of Section 15.4.6.2 of this Rate Schedule are satisfied, and so that transmission Constraints resulting from either the commitment or dispatch of Generators do not limit the ISO's ability to deliver Energy to Loads in the case of a Contingency. The ISO will ensure that Suppliers that are compensated for using Capacity to provide one Operating Reserve product are not simultaneously compensated for providing another Operating Reserve product, or Regulation Service, using the same Capacity (consistent with the additive market clearing price calculation formulae in Sections 15.4.5.1 and 15.4.6.1 of this Rate Schedule).

**15.4.1.2 Supplier Eligibility Criteria**

The ISO shall enforce the following criteria, which define which types of Suppliers are eligible to supply particular Operating Reserve products.

**15.4.1.2.1 Spinning Reserve:**

Suppliers that are ISO Committed Flexible or Self-Committed Flexible, are operating within the dispatchable portion of their operating range, are capable of responding to ISO instructions to change their output level within ten minutes, and that meet the criteria set forth in the ISO Procedures shall be eligible to supply Spinning Reserve (except for Demand Side Resources that are Local Generators not utilizing inverter-based energy storage technology). The following types of resources are only eligible to provide Spinning Reserve if all of the generating units use inverter-based energy storage technology and meet the criteria set forth in the ISO Procedures: (a) Aggregations comprised of one or more generating units, (b) Aggregations that include Demand Side Resource(s) where at least one Demand Side Resource facilitates its Demand Reduction by utilizing a Local Generator, and (c) Behind-the-Meter Net Generation Resources that are comprised of more than one generating unit and dispatched as a single aggregate unit. Suppliers utilizing inverter-based energy storage technology, and that meet the criteria set forth in the ISO Procedures, shall be eligible to supply Spinning Reserve when withdrawing or injecting Energy, and when idle.

**15.4.1.2.2 10-Minute Non-Synchronized Reserve:**

(i) Off-line Generators that are capable of starting, synchronizing, and increasing their output level within ten (10) minutes; (ii) Behind-the-Meter Net Generation Resources that are comprised of more than one generating unit and dispatched as a single aggregate unit that are capable of increasing their output level within ten (10) minutes; and (iii) Demand Side Resources that are capable of reducing their Energy usage/Aggregations comprised solely of generating units that are capable of increasing their supply level within ten (10) minutes, that meet the criteria set forth in the ISO Procedures shall be eligible to supply 10-Minute Non-Synchronized Reserve.

**15.4.1.2.3 30-Minute Reserve:**

(i) Generators, except Behind-the-Meter Net Generation Resources and Aggregations that are comprised of more than one generating unit, that are ISO-Committed Flexible or Self-Committed Flexible and operating within the dispatchable portion of their operating range shall be eligible to supply synchronized 30-Minute Reserves. Aggregations that include/Demand Side Resource(s) that do not facilitate demand reduction using Local Generators, or that facilitate demand reduction using a Local Generator utilizing inverter-based energy storage technology, that are capable of reducing their Energy usage within thirty (30) minutes shall be eligible to supply synchronized 30-Minute Reserves. Suppliers utilizing inverter-based energy storage technology, including Aggregations with a combination of Resources utilizing inverter-based energy storage technology and Demand Side Resources, and that meet the criteria set forth in the ISO Procedures, shall be eligible to supply synchronized 30-Minute Reserves when withdrawing or when injecting Energy, and when idle; (ii) Off-line Generators that are capable of starting, synchronizing, and increasing their output level within thirty (30) minutes; (iii) Behind-the-

Meter Net Generation Resources that are comprised of more than one generating unit and dispatched as a single aggregate unit that are capable of increasing their output level within thirty (30) minutes; and (iv) Demand Side Resources that are capable of reducing their Energy usage/Aggregations comprised of one or more generating units that are capable of increasing their output level within thirty (30) minutes, that meet the criteria set forth in the ISO Procedures shall be eligible to supply non-synchronized 30-Minute Reserves.

#### 15.4.1.2.4 Self-Committed Fixed and ISO-Committed Fixed Generators and Aggregations:

Shall not be eligible to provide any kind of Operating Reserve.

### 15.4.1.3 Other Supplier Requirements

All Suppliers of Operating Reserve must be located within the NYCA and must be under ISO Operational Control. Each Supplier bidding to supply Operating Reserve or reduce demand must be able to provide Energy or reduce demand consistent with the Reliability Rules and the ISO Procedures when called upon by the ISO.

All Suppliers that are selected to provide Operating Reserves shall ensure that their Resources maintain and deliver the appropriate quantity of Energy, or reduce the appropriate quantity of demand, when called upon by the ISO during any interval in which they have been selected.

Suppliers that are selected to provide Operating Reserve in the Day-Ahead Market may increase their Incremental Energy Bids or Demand Reduction Bids, respectively, for portions of their Resources that have been scheduled; provided however, that they are not otherwise prohibited from doing so pursuant to other provisions of the ISO's Tariffs. Withdrawal-Eligible Generators or Aggregations comprised of one or more Withdrawal-Eligible Generators that are scheduled to withdraw Energy, and that are selected to provide Operating Reserve in the Day-Ahead Market, may decrease their Bids to withdraw Energy for portions of their resources that have been scheduled through those processes; provided however, that they are not otherwise prohibited from doing so pursuant to other provisions of the ISO's Tariffs. Suppliers that are selected to provide Operating Reserve in the Day-Ahead Market may not, however, reduce the $UOL_N$ in their Real-Time Market Bids below the sum of their Day-Ahead Market schedules for Energy, Operating Reserve, and Regulation Service, except to the extent that they are directed to do so by the ISO. The ISO may reduce the real-time Operating Reserve schedule (in MW) from an Energy Storage Resource to account for the Energy Level of such Resource, as discussed in Section 4.4.2.1 of this ISO Services Tariff. Suppliers may enter into alternate sales arrangements utilizing any Capacity that has not been scheduled to provide Operating Reserve.

## 15.4.2 General Day-Ahead Market Rules

### 15.4.2.1 Bidding and Bid Selection

Resources capable of providing Spinning Reserve, 10-Minute Non-Synchronized Reserve and/or 30-Minute Reserve in the Day-Ahead commitment may submit Availability Bids for each hour of the upcoming day. If a Supplier offers Resources that are capable, based on their indicated commitment status, of providing Operating Reserves but does not submit an Availability Bid, its Day-Ahead Bid will be rejected in its entirety. A Supplier may resubmit a complete Day-Ahead Bid, provided that the new bid is timely.

The ISO may schedule Suppliers that make themselves available to provide Operating Reserves up to the following maximum Operating Reserve levels: (i) for Spinning Reserves, the least of the Resource's emergency response rate multiplied by ten, or the Resource's applicable Upper Operating Limit (*i.e.*, $UOL_N$, $UOL_E$); (ii) for 10-Minute Non-Synchronized Reserves, or for non-synchronized 30-Minute Reserves, the Resource’s UOLN or UOLE, whichever is applicable at the relevant time (the Resource may offer one product or the other depending on the time required for it to start-up and synchronize to the grid; and (iii) for synchronized 30-Minute Reserves, the least of the Resource’s emergency response rate multiplied by twenty and its applicable Upper Operating Limit.

However, the sum of the amount of Energy or Demand Reduction a Resource is scheduled to provide, the amount of Regulation Service it is scheduled to provide, and the amount of each Operating Reserves product it is scheduled to provide shall not exceed its UOLN or UOLE, whichever is applicable.  For an Energy Storage Resource or an Aggregation of Energy Storage Resources, the Resource’s Energy schedule minus its Regulation Service schedule shall not be less than the Resource’s Lower Operating Limit.

For an Energy Storage Resource or Aggregation of Energy Storage Resources that is withdrawing Energy, the sum of the Resource’s or Aggregation’s Energy Schedule, the amount of Regulation Capacity it is scheduled to provide, and the amount of Operating Reserves product it is scheduled to provide shall not exceed its Upper Operating Limit.

For Co-located Storage Resources the sum of the amount of Energy each Generator is scheduled to provide, the amount of Regulation Service the Energy Storage Resource is scheduled to provide, and the amount of each Operating Reserves product the Energy Storage Resource is scheduled to provide, shall account for the CSR injection Scheduling Limit consistent with ISO Procedures.  The net amount of Energy that the CSR Generators are scheduled to withdraw, plus the amount of Regulation Service the Energy Storage Resource is scheduled to provide, shall account for the CSR withdrawal Scheduling Limit consistent with ISO Procedures.

The ISO shall select Operating Reserve Suppliers for each hour of the upcoming day through a co-optimized Day-Ahead commitment process that minimizes the total bid cost of Energy, Operating Reserves and Regulation Service, using Bids submitted pursuant to Section 4.2 of, and Attachment D to, this ISO Services Tariff. As part of the co-optimization process, the ISO shall determine how much of each Operating Reserves product particular Suppliers will be required to provide in light of the Reliability Rules and other applicable reliability standards, including the locational Operating Reserves requirements specified above.

#### 15.4.2.2 ISO Notice Requirement

The ISO shall notify each Operating Reserve Supplier that has been selected in the Day-Ahead Market of the amount of each Operating Reserve product that it has been scheduled to provide.

#### 15.4.2.3 Real-Time Market Responsibilities of Suppliers Scheduled to Provide Operating Reserves in the Day-Ahead Market

Suppliers that are scheduled Day-Ahead to provide Operating Reserves shall either provide Operating Reserve, Energy or Demand Reductions in real-time when scheduled by the ISO in all hours for which they have been selected to provide Operating Reserve and are physically capable of doing so. However, Suppliers that are scheduled Day-Ahead to provide Operating Reserves and have startup periods of two hours or less may advise the ISO no later than three hours prior to the first hour of their Day-Ahead schedule that they will not be available to provide Operating Reserves or Energy in real-time under normal conditions. Such Suppliers will be required to settle their Day-Ahead schedule at real-time prices pursuant to Section 15.4.6.3 of this Rate Schedule. The only restriction on Suppliers' ability to exercise this option is that all Suppliers with Day-Ahead Operating Reserves schedules must make the scheduled amount of Capacity available to the ISO for dispatch in the RTD if the ISO initiates a Supplemental Resource Evaluation.

### 15.4.3 General Real-Time Market Rules

#### 15.4.3.1 Bid Selection

The ISO will automatically select Operating Reserves Suppliers in real-time from eligible Resources, that submit Real-Time Bids pursuant to Section 4.4 of, and Attachment D to, this ISO Services Tariff. Each Supplier will automatically be assigned a real-time Operating Reserves Availability bid of $0/MW for the quantity of Capacity that it makes available to the ISO in its Real-Time Bid. The ISO may schedule Suppliers that make themselves available to provide Operating Reserves up to the following maximum Operating Reserve levels: (i) for Spinning Reserves, the least of the Resource's emergency response rate multiplied by ten and the Resource's applicable Upper Operating Limit ($UOL_N$ or $UOL_E$); (ii) for 10-Minute Non-Synchronized Reserves, or for non-synchronized 30-Minute Reserves, the Resource's $UOL_N$ or $UOL_E$, whichever is applicable at the relevant time (the Resource may offer one product or the other depending on the time required for it to start-up and synchronize to the grid); and (iii) for synchronized 30-Minute Reserves, the least of the Resource's emergency response rate multiplied by twenty and the Resource's applicable Upper Operating Limit ($UOL_N$ or $UOL_E$). However, the sum of the amount of Energy or Demand Reduction, that each Resource is scheduled to provide, the amount of Regulation Service it is scheduled to provide, and the amount of each Operating Reserves product it is scheduled to provide shall not exceed its $UOL_N$ or $UOL_E$, whichever is applicable.

For an Energy Storage Resource or an Aggregation of Energy Storage Resources that is withdrawing Energy, the sum of the Resource's or Aggregation's Energy Schedule, the amount of Regulation Capacity it is scheduled to provide and the amount of Operating Reserves product it is scheduled to provide shall not exceed its UOL.  The ISO may limit the availability of a Withdrawal-Eligible Generator to provide Operating Reserves based on its Energy Level constraints.

For a Co-located Storage Resource the sum of the amount of Energy each Generator is scheduled to provide, the amount of Regulation Service the Energy Storage Resource is scheduled to provide, and the amount of each Operating Reserves product the Energy Storage Resource is scheduled to provide, shall account for the CSR injection Scheduling Limit consistent with ISO Procedures.  The net amount of Energy that the CSR Generators are scheduled to withdraw, plus the amount of Regulation Service the Energy Storage Resource is scheduled to provide, shall account for the CSR withdrawal Scheduling Limit consistent with ISO Procedures.

Suppliers will thus be selected on the basis of their response rates, their applicable upper operating limits, and their Energy Bids (which will reflect their opportunity costs) through a co-optimized real-time commitment process that minimizes the total bid cost of Energy, or Demand Reduction, Regulation Service, and Operating Reserves.  As part of the process, the ISO shall determine how much of each Operating Reserves product particular Suppliers will be required to provide in light of the Reliability Rules and other applicable reliability standards, including the locational Operating Reserves requirements and Scarcity Reserve Requirements specified above.

#### 15.4.3.2 ISO Notice Requirement

The ISO shall notify each Supplier of Operating Reserve that has been scheduled by RTD of the amount of Operating Reserve that it must provide.

#### 15.4.3.3 Obligation to Make Resources Available to Provide Operating Reserves

Any Resource that is eligible to supply Operating Reserves and that is made available to ISO for dispatch in Real-Time must also make itself available to provide Operating Reserves.

#### 15.4.3.4 Activation of Operating Reserves

All Resources that are selected by the ISO to provide Operating Reserves shall respond to the ISO's directions to activate in real-time.

#### 15.4.3.5 Performance Tracking and Supplier Disqualifications

When a Supplier committed to supply Operating Reserves is activated, the ISO shall measure and track its actual Energy injections, withdrawals, and Demand Reductions against its expected performance in real-time.  The ISO may disqualify Suppliers that consistently fail to provide Energy, Demand Reduction, or to reduce Energy withdrawals, when called upon to do so in real-time from providing Operating Reserves in the future.  If a Resource has been disqualified, the ISO shall require it to pass a re-qualification test before accepting any additional Bids to supply Operating Reserves from it.  Disqualification and re-qualification criteria shall be set forth in the ISO Procedures.

### 15.4.4 Operating Reserves Settlements - General Rules

#### 15.4.4.1 Establishing Locational Reserve and Scarcity Reserve Requirement Prices

Except as noted below, the ISO shall calculate separate Day-Ahead Market and Real-Time Market prices for each of the products in five locations:  (i) West of Central-East ("West" or "Western"); (ii) East of Central-East excluding Southeastern New York ("Eastern"); (iii) Southeastern New York excluding New York City and Long Island ("Southeastern"); (iv) New York City ("N.Y.C."); and (v) Long Island ("L.I.").  The ISO will thus calculate fifteen different locational Operating Reserve prices in both the Day-Ahead Market and the Real-Time Market. The ISO will also calculate prices in the Real-Time Market for each of the products in a Scarcity Reserve Region, if applicable. Day-Ahead locational reserve prices shall be calculated pursuant to Section 15.4.5 of this Rate Schedule. Real-Time locational Operating Reserves prices and Scarcity Reserve Requirement prices shall be calculated pursuant to Section 15.4.6 of this Rate Schedule.

#### 15.4.4.2 Settlements Involving Suppliers of Operating Reserves Located on Long Island

Suppliers of Operating Reserves located on Long Island shall receive settlement payments as if they were providing Operating Reserves located in Southeastern New York, except in the case of a Scarcity Reserve Requirement for a Scarcity Reserve Region that includes Long Island in addition to one or more other Load Zones. In this instance, suppliers of Operating Reserves located on Long Island shall receive settlement payments as if they were providing Operating Reserves located in Southeastern New York and in the applicable Scarcity Reserve Region. The ISO will calculate separate locational Long Island Operating Reserves prices and Long Island Scarcity Reserve Requirement prices for Scarcity Reserve Regions that include Long Island but will not post them or use them for settlement purposes.

#### 15.4.4.3 "Cascading" of Operating Reserves

The ISO will deem Spinning Reserve to be the "highest quality" Operating Reserve, followed by 10-Minute Non-Synchronized Reserve and by 30-Minute Reserve. The ISO shall substitute higher quality Operating Reserves in place of lower quality Operating Reserves, when doing so lowers the total as-bid cost, *i.e.*, when the marginal cost for the higher quality Operating Reserve product is lower than the marginal cost for the lower quality Operating Reserve product, and the substitution of a higher quality for the lower quality product does not cause locational Operating Reserve requirements or Scarcity Reserve Requirements to be violated.  To the extent, however, that reliability standards require the use of higher quality Operating Reserves, substitution cannot be made in the opposite direction.

The market clearing price of higher quality Operating Reserves will not be set at a price below the market clearing price of lower quality Operating Reserves in the same location or Scarcity Reserve Region.  Thus, the market clearing price of Spinning Reserves will not be below the price for 10-Minute Non-Synchronized Reserves or 30-Minute Reserves and the market clearing price for 10-Minute Non-Synchronized Reserves will not be below the market clearing price for 30-Minute Reserves.

## 15.4.5 Operating Reserve Settlements – Day-Ahead Market

### 15.4.5.1 Calculation of Day-Ahead Market Clearing Prices

The ISO shall calculate hourly Day-Ahead Market clearing prices for each Operating Reserve product at each location.  Each Day-Ahead Market clearing price shall equal the sum of the relevant Day-Ahead locational Shadow Prices for that product in that hour, subject to the restriction described in Section 15.4.4.3 of this Rate Schedule.

The Day-Ahead Market clearing price for a particular Operating Reserve product in a particular location shall reflect the Shadow Prices associated with all of the ISO-defined Operating Reserve requirements, including locational requirements, that a particular Operating Reserves product from a particular location may be used to satisfy in a given hour.  The ISO shall calculate Day-Ahead Market clearing prices using the following formulae:

Market clearing price for Western 30-Minute Reserves = SP1

Market clearing price for Western 10-Minute Non-Synchronized Reserves = SP1 + SP2

Market clearing price for Western Spinning Reserves = SP1 + SP2 + SP3

Market clearing price for Eastern 30-Minute Reserves = SP1 + SP4

Market clearing price for Eastern 10-Minute Non-Synchronized Reserves = SP1 + SP2 + SP4 + SP5

Market clearing price for Eastern Spinning Reserves = SP1 + SP2 + SP3 + SP4 + SP5 + SP6

Market clearing price for Southeastern 30-Minute Reserves = SP1 + SP4 + SP7

Market clearing price for Southeastern 10-Minute Non-Synchronized Reserves = SP1 + SP2 + SP4 + SP5 + SP7 + SP8

Market clearing price for Southeastern Spinning Reserves = SP1 + SP2 + SP3 + SP4 + SP5 + SP6 + SP7 + SP8 + SP9

Market clearing price for N.Y.C. 30-Minute Reserves = SP1 + SP4 + SP7 + SP10

Market clearing price for N.Y.C. 10-Minute Non-Synchronized Reserves = SP1 + SP2 + SP4 + SP5 + SP7 + SP8 + SP10 + SP11

Market clearing price for N.Y.C. Spinning Reserves = SP1 + SP2 + SP3 + SP4 + SP5 + SP6 + SP7 + SP8 + SP9 + SP10 + SP11 + SP12

Market clearing price for L.I. 30-Minute Reserves = SP1 + SP4 + SP7 + SP13

Market clearing price for L.I. 10-Minute Non-Synchronized Reserves = SP1 + SP2 + SP4 + SP5 + SP7 + SP8 + SP13 + SP14

Market clearing price for L.I. Spinning Reserves = SP1 + SP2 + SP3 + SP4 + SP5 + SP6 + SP7 + SP8 + SP9 + SP13 + SP14 + SP15

Where:

SP1 = Shadow Price for total 30-Minute Reserve requirement constraint for the hour

SP2 = Shadow Price for total 10-Minute Reserve requirement constraint for the hour

SP3 = Shadow Price for total Spinning Reserve requirement constraint for the hour

SP4 = Shadow Price for Eastern, Southeastern, N.Y.C., or L.I. 30-Minute Reserve requirement constraint for the hour

SP5 = Shadow Price for Eastern, Southeastern, N.Y.C., or L.I. 10-Minute Reserve requirement constraint for the hour

SP6 = Shadow Price for Eastern, Southeastern, N.Y.C., or L.I. Spinning Reserve requirement constraint for the hour

SP7 = Shadow Price for Southeastern, N.Y.C., or L.I. 30-Minute Reserve requirement constraint for the hour

SP8 = Shadow Price for Southeastern, N.Y.C., or L.I. 10-Minute Reserve requirement constraint for the hour

SP9 =Shadow Price for Southeastern, N.Y.C., or L.I. Spinning Reserve requirement constraint for the hour

SP10 = Shadow Price for New York City 30-Minute Reserve requirement constraint for the hour

SP11 = Shadow Price for New York City 10-Minute Reserve requirement constraint for the hour

SP12 =Shadow Price for New York City Spinning Reserve requirement constraint for the hour

SP13 = Shadow Price for Long Island 30-Minute Reserve requirement constraint for the hour

SP14 = Shadow Price for Long Island 10-Minute Reserve requirement constraint for the hour

SP15 = Shadow Price for Long Island Spinning Reserve requirement constraint for the hour

Day-Ahead locational Shadow Prices will be calculated by SCUC. Each hourly Day-Ahead Shadow Price for each Operating Reserves requirement shall equal the marginal Bid cost of scheduling Resources to provide additional Operating Reserves to meet that requirement in that hour, including any impact on the Bid Production Cost of procuring Energy or Regulation Service that would result from procuring an increment of Operating Reserve to meet the requirement in that hour, as calculated during the fifth SCUC pass described in Section 17.1.3 of

Attachment B to this Services Tariff.  As a result, the Shadow Price for each Operating Reserves requirement shall include the Day-Ahead Availability Bid of the marginal Resource selected to meet that requirement (or the applicable price on the Operating Reserve Demand Curve for that requirement during shortage conditions), plus any margins on the sale of Energy or Regulation Service in the Day-Ahead Market that that Resource would forego if scheduling it to provide additional Operating Reserve to meet that requirement would lead to it being scheduled to provide less Energy or Regulation Service. Shadow Prices will also be consistent with the Operating Reserve Demand Curves described in Section 15.4.7 of this Rate Schedule, which will ensure that Operating Reserves are not scheduled by SCUC at a cost greater than the relevant Operating Reserve Demand Curve indicates should be paid.  If more Operating Reserve of a particular quality than is needed is scheduled to meet a particular locational Operating Reserve requirement, the Shadow Price for that Operating Reserve requirement constraint shall be set at zero.

Each Supplier that is scheduled Day-Ahead to provide Operating Reserve shall be paid the applicable Day-Ahead Market clearing price, based on its location and the quality of Operating Reserve scheduled, multiplied by the amount of Operating Reserve that the Supplier is scheduled to provide in each hour.

#### 15.4.5.2 Other Day-Ahead Payments

A Supplier that bids on behalf of (i) a Generator that provides Operating Reserves or (ii) a Demand Side Resource/Aggregation that provides Operating Reserves 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.

## 15.4.6 Operating Reserve Settlements – Real-Time Market

### 15.4.6.1 Calculation of Real-Time Market Clearing Prices

The ISO shall calculate Real-Time Market clearing prices for each Operating Reserve product for each location in every interval and Scarcity Reserve Region in each interval for which a Scarcity Reserve Requirement is established by the ISO. Each real-time market-clearing price shall equal the sum of the relevant real-time locational Shadow Prices and Scarcity Reserve Requirement Shadow Prices for a given product, subject to the restriction described in Section 15.4.4.3 of this Rate Schedule.

The Real-Time Market clearing price for a particular Operating Reserve product for a particular location or Scarcity Reserve Region shall reflect the Shadow Prices associated with all of the ISO-defined Operating Reserve requirements, including locational requirements and Scarcity Reserve Requirements, that a particular Operating Reserves product from that location or Scarcity Reserve Region may be used to satisfy in a given interval. The ISO shall calculate the Real-Time Market clearing prices using the following formulae:

Market clearing price for Western 30-Minute Reserves = SP1

Market clearing price for Western 10-Minute Non-Synchronized Reserves = SP1 + SP2

Market clearing price for Western Spinning Reserves = SP1 + SP2 + SP3

Market clearing price for Eastern 30-Minute Reserves = SP1 + SP4

Market clearing price for Eastern 10-Minute Non-Synchronized Reserves = SP1 + SP2 + SP4 + SP5

Market clearing price for Eastern Spinning Reserves = SP1 + SP2 + SP3 + SP4 + SP5 + SP6

Market clearing price for Southeastern 30-Minute Reserves = SP1 + SP4 + SP7

Market clearing price for Southeastern 10-Minute Non-Synchronized Reserves = SP1 + SP2 + SP4 + SP5 + SP7 + SP8

Market clearing price for Southeastern Spinning Reserves = SP1 + SP2 + SP3 + SP4 + SP5 + SP6 + SP7 + SP8 + SP9

Market clearing price for N.Y.C. 30-Minute Reserves = SP1 + SP4 + SP7 + SP10

Market clearing price for N.Y.C. 10-Minute Non-Synchronized Reserves = SP1 + SP2 + SP4 + SP5 + SP7 + SP8 + SP10 + SP11

Market clearing price for N.Y.C. Spinning Reserves = SP1 + SP2 + SP3 + SP4 + SP5 + SP6 + SP7 + SP8 + SP9 + SP10 + SP11 + SP12

Market clearing price for L.I. 30-Minute Reserves = SP1 + SP4 + SP7 + SP13

Market clearing price for L.I. 10-Minute Non-Synchronized Reserves = SP1 + SP2 + SP4 + SP5 + SP7 + SP8 + SP13 + SP14

Market clearing price for L.I. Spinning Reserves = SP1 + SP2 + SP3 + SP4 + SP5 + SP6 + SP7 + SP8 + SP9 + SP13 + SP14 +SP15

Where:

SP1 = Shadow Price for total 30-Minute Reserve requirement constraint and, if applicable, Scarcity Reserve Requirement constraint for the interval

SP2 = Shadow Price for total 10-Minute Reserve requirement constraint for the interval

SP3 = Shadow Price for total Spinning Reserve requirement constraint for the interval

SP4 = Shadow Price for Eastern, Southeastern, N.Y.C., or L.I. 30-Minute Reserve requirement constraint and, if applicable, Scarcity Reserve Requirement constraint for the interval

SP5 = Shadow Price for Eastern, Southeastern, N.Y.C., or L.I. 10-Minute Reserve requirement constraint for the interval

SP6 = Shadow Price for Eastern, Southeastern, N.Y.C., or L.I. Spinning Reserve requirement constraint for the interval

SP7 = Shadow Price for Southeastern, N.Y.C., or L.I. 30-Minute Reserve requirement constraint and, if applicable, Scarcity Reserve Requirement constraint for the interval

SP8 = Shadow Price for Southeastern, N.Y.C., or L.I. 10-Minute Reserve requirement constraint for the interval

SP9 = Shadow Price for Southeastern, N.Y.C., or L.I. Spinning Reserve requirement constraint for the interval

SP10 = Shadow Price for New York City 30-Minute Reserve requirement constraint and, if applicable, Scarcity Reserve Requirement constraint for the interval

SP11 = Shadow Price for New York City 10-Minute Reserve requirement constraint for the interval

SP12 =Shadow Price for New York City Spinning Reserve requirement constraint for the interval

SP13 = Shadow Price for Long Island 30-Minute Reserve requirement constraint and, if applicable, Scarcity Reserve Requirement constraint for the interval

SP14 = Shadow Price for Long Island 10-Minute Reserve requirement constraint for the interval

SP15 = Shadow Price for Long Island Spinning Reserve requirement constraint for the interval

Real-time locational and Scarcity Reserve Requirement Shadow Prices will be calculated by the ISO's RTD. Each Real-Time Shadow Price for each Operating Reserves requirement, including a Scarcity Reserve Requirement, in each RTD interval shall equal the marginal Bid cost of scheduling Resources to provide additional Operating Reserves to meet that requirement in that interval, including any impact on the Bid Production Cost of procuring Energy or Regulation Service that would result from procuring an increment of Operating Reserve to meet the requirement in that interval, as calculated during the second RTD pass described in Section 17.1.2.1.2.2 of Attachment B to this ISO Services Tariff. As a result, the Shadow Price for each Operating Reserves requirement, including a Scarcity Reserve Requirement, shall include the Real-Time Availability Bid of the marginal Resource selected to meet that requirement (or the applicable price on the Operating Reserve Demand Curve or Scarcity Reserve Demand Curve for that requirement during shortage conditions), plus any margins on the sale of Energy or Regulation Service in the Real-Time Market that that Resource would forego if scheduling it to provide additional Operating Reserve to meet that requirement would lead to it being scheduled to provide less Energy or Regulation Service. Shadow Prices will also be consistent with the

Operating Reserve Demand Curves and Scarcity Reserve Demand Curve described in Section 15.4.7 of this Rate Schedule, which will ensure that Operating Reserves are not scheduled by RTC at a cost greater than the relevant Operating Reserve Demand Curve or Scarcity Reserve Demand Curve indicates should be paid. If there is more Operating Reserve of the required quality than is needed to meet a particular locational Operating Reserve requirement or Scarcity Reserve Requirement then the Shadow Price for that Operating Reserve requirement or Scarcity Reserve Requirement constraint shall be zero.

Each Supplier that is scheduled in real-time to provide Operating Reserve shall be paid the applicable Real-Time Market clearing price, based on its location and the quality of Operating Reserve scheduled, multiplied by the amount of Operating Reserve that the Supplier is scheduled to provide in each interval that was not scheduled Day-Ahead.

15.4.6.1.1 The Real-Time Market clearing price shall also reflect the Shadow Price for any Scarcity Reserve Requirement constraint as part of the applicable 30-Minute Reserve requirement constraint Shadow Price for the Load Zones included in the Scarcity Reserve Region. The inclusion of Scarcity Reserve Requirement constraint Shadow Prices in the calculation of Real-Time Market clearing prices is as set forth below:

(a) When the Load Zones included in a Scarcity Reserve Region are identical to the Load Zones of an existing locational reserve region, the Scarcity Reserve Requirement will be added to the existing 30-Minute Reserve requirement for the locational reserve region and the Shadow Price for the Scarcity Reserve Requirement will be the Shadow Price for the revised 30-Minute Reserve requirement. The use of Scarcity Reserve Requirement Shadow Prices in calculating Real-Time Market clearing in such circumstances is as follows:

i. If the Scarcity Reserve Requirement is for a Scarcity Reserve Region that includes Load Zones A, B, C, D, E, F, G, H, I, J, and K (*i.e.*, all Load Zones), then the Shadow Price for the Scarcity Reserve Requirement shall be SP1. SP1 shall be utilized in the same manner as described in the formulae above in calculating Real-Time Market clearing prices;

ii. If the Scarcity Reserve Requirement is for a Scarcity Reserve Region that includes Load Zones F, G, H, I, J, and K (*i.e.*, all East of Central-East Load Zones), but does not include Load Zones A, B, C, D, or E, then the Shadow Price for the Scarcity Reserve Requirement shall be SP4. SP4 shall be utilized in the same manner as described in the formulae above in calculating Real-Time Market clearing prices;

iii. If the Scarcity Reserve Requirement is for a Scarcity Reserve Region that includes Load Zones G, H, I, J, and K (*i.e.*, all Southeastern New York Load Zones), but does not include Load Zones A, B, C, D, E, or F, then the Shadow Price for the Scarcity Reserve Requirement shall be SP7. SP7 shall be utilized in the same manner as described in the formulae above in calculating Real-Time Market clearing prices;

iv. If the Scarcity Reserve Requirement is for a Scarcity Reserve Region that includes Load Zone J (*i.e.*, New York City only), but does not include Load Zones A, B, C, D, E, F, G, H, I, or K, then the Shadow Price for the Scarcity Reserve Requirement shall be SP10. SP10 shall be utilized in the same manner as described in the formulae above in calculating Real-Time Market clearing prices; or

v. If the Scarcity Reserve Requirement is for a Scarcity Reserve Region that includes Load Zone K (*i.e.*, Long Island only), but does not include Load Zones A, B, C, D, E, F, G, H, I, or J, then the Shadow Price for the Scarcity Reserve Requirement shall be SP13. SP13 shall be utilized in the same manner as described in the formulae above in calculating Real-Time Market clearing prices.

(b) When the Load Zones included in the Scarcity Reserve Region are not identical to the Load Zones of an existing locational reserve region, the Shadow Price attributable to the Scarcity Reserve Requirement will be added to the applicable Shadow Price for the 30-Minute Reserve requirement for the existing locational reserve region to which all of the Load Zones included in the Scarcity Reserve Region belong. The inclusion of the Scarcity Reserve Requirement Shadow Prices shall apply only to the Load Zones included as part of a Scarcity Reserve Region. The use of Scarcity Reserve Requirement Shadow Prices in calculating Real-Time Market clearing in such circumstances is as follows:

i. If the Scarcity Reserve Requirement is for a Scarcity Reserve Region that includes at least one or more of Load Zones A, B, C, D, or E and Section 15.4.6.1.1(a)(i) of this Rate Schedule is not applicable, then the Shadow Price for the Scarcity Reserve Requirement shall be included in SP1 for each of the Load Zones included in the Scarcity Reserve Region. This SP1 value shall be utilized in the same manner as described in the formulae above in calculating Real-Time

Market clearing prices for each of the Load Zones included in the Scarcity Reserve Region;

ii. If the Scarcity Reserve Requirement is for a Scarcity Reserve Region that includes at least Load Zone F, but does not include Load Zones A, B, C, D, or E and Section 15.4.6.1.1(a)(ii) of this Rate Schedule is not applicable, then the Shadow Price for the Scarcity Reserve Requirement shall be included in SP4 for each of the Load Zones included in the Scarcity Reserve Region. This SP4 value shall be utilized in the same manner as described in the formulae above in calculating Real-Time Market clearing prices for each of the Load Zones included in the Scarcity Reserve Region; or

iii. If the Scarcity Reserve Requirement is for a Scarcity Reserve Region that includes at least one or more of Load Zones G, H, I, J, or K but does not include Load Zones A, B, C, D, E, or F and Sections 15.4.6.1.1(a)(iii), 15.4.6.1.1(a)(iv), or 15.4.6.1.1(a)(v) of this Rate Schedule are not applicable, then the Shadow Price for the Scarcity Reserve Requirement shall be included in SP7 for each of the Load Zones included in the Scarcity Reserve Region. This SP7 value shall be utilized in the same manner as described in the formulae above in calculating Real-Time Market clearing prices for each of the Load Zones included in the Scarcity Reserve Region.

### 15.4.6.2 Establishment of Scarcity Reserve Requirements in the Real-Time Market During EDRP/SCR Activations

The ISO will establish a Scarcity Reserve Requirement for each Scarcity Reserve Region when it has called upon the EDRP and/or SCRs in identified Load Zones to reduce Load to address a reliability need. The Scarcity Reserve Requirement will be applicable for all real-time intervals during which the ISO has activated EDRP and/or SCRs within the applicable Scarcity Reserve Region to provide Load reduction. The Scarcity Reserve Requirement for each affected real-time interval shall be an amount equal to the sum of the applicable values for the Expected EDRP/SCR MW for all of the Load Zones included in a Scarcity Reserve Region, less the Available Operating Capacity in the Scarcity Reserve Region; provided, however, that a Scarcity Reserve Requirement shall not have a value less than zero.

The applicable value of the Expected EDRP/SCR MW for each Load Zone included in a Scarcity Reserve Region to be used in calculating the Scarcity Reserve Requirement is dependent upon whether the Load reduction for a given interval is deemed voluntary or mandatory for purposes of calculating the Scarcity Reserve Requirement, as further described below. If the ISO has satisfied the notification requirements set forth in Section 5.12.11.1 of this ISO Services Tariff for the SCRs within any Load Zone for any hour encompassed by the EDRP/SCR activation(s) for the day at issue, the Load reduction for all intervals encompassed by such activation(s) are deemed to be mandatory for the purposes of calculating any Scarcity Reserve Requirement only and the corresponding value for a mandatory Load reduction is used for SCRs in determining any Scarcity Reserve Requirement. In all other circumstances not encompassed by the preceding sentence, the Load reduction for all intervals encompassed by such EDRP/SCR activation(s) are deemed to be voluntary for the day at issue and the corresponding value for a voluntary Load reduction is used for SCRs in determining any Scarcity Reserve Requirement. For EDRP, Load reduction is deemed to be voluntary in all intervals and the value for EDRP included in the Expected EDRP/SCR MW value for each Load Zone reflects the voluntary nature of the Load reduction.

#### 15.4.6.3 Operating Reserve Balancing Payments

Any deviation in performance from a Supplier's Day-Ahead schedule to provide Operating Reserves, including deviations that result from schedule modifications made by the ISO, shall be settled pursuant to the following rules.

(a) When the Supplier's real-time Operating Reserves schedule is less than its Day-Ahead Operating Reserves schedule, the Supplier shall pay a charge for the imbalance equal to the product of: (i) the Real-Time Market clearing price for the relevant Operating Reserves Product in the relevant location or Scarcity Reserve Region; and (ii) the difference between the Supplier's Day-Ahead and real-time Operating Reserves schedules.

(b) When the Supplier's real-time Operating Reserves schedule is greater than its Day-Ahead Operating Reserves schedule, the ISO shall pay the Supplier an amount to compensate it for the imbalance equal to the product of: (i) the Real-Time Market clearing price for the relevant Operating Reserve product in the relevant location or Scarcity Reserve Region; and (ii) the difference between the Supplier's Day-Ahead and real-time Operating Reserves schedules.

#### 15.4.6.4 Other Real-Time Payments

The ISO shall pay Generators and Aggregations that are selected to provide Operating Reserves Day-Ahead, but are directed to convert to Energy production or, for Withdrawal-Eligible Generators and Aggregations that include Withdrawal-Eligible Generator(s), to reduce Energy withdrawals in real-time, the applicable Real-Time LBMP for all Energy they are directed to provide in excess of their Day-Ahead Energy schedule.

A Supplier that bids on behalf of (i) a Generator that provides Operating Reserves or (ii) an Demand Side Resource/Aggregation that provides Operating Reserves may be eligible for a Bid Production Cost guarantee payment pursuant to Section 4.6.6 and Attachment C of this ISO Services Tariff.

A Supplier that provides Operating Reserves 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.

### 15.4.7 Operating Reserve Demand Curves and Scarcity Reserve Demand Curve

The ISO shall establish Operating Reserve Demand Curves for each locational Operating Reserves requirement. Specifically, there shall be a demand curve for: (i) Total Spinning Reserves; (ii) Eastern, Southeastern, New York City, or Long Island Spinning Reserves; (iii) Southeastern, New York City, or Long Island Spinning Reserves; (iv) New York City Spinning Reserves; (v) Long Island Spinning Reserves; (vi) Total 10-Minute Reserves; (vii) Eastern, Southeastern, New York City, or Long Island 10-Minute Reserves; (viii) Southeastern, New York City, or Long Island 10-Minute Reserves; (ix) New York City 10-Minute Reserves; (x) Long Island 10-Minute Reserves; (xi) Total 30-Minute Reserves (including separate demand curves applicable for each real-time interval the ISO has established a Scarcity Reserve Requirement); (xii) Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves (including separate demand curves applicable for each real-time interval the ISO has established certain Scarcity Reserve Requirements); (xiii) Southeastern, New York City, or Long Island 30-Minute Reserves (including separate demand curves applicable for each real-time interval the ISO has established certain Scarcity Reserve Requirements); (xiv) New York City 30-Minute Reserves (including a separate demand curve applicable for each real-time interval the ISO has established a Scarcity Reserve Requirement for which the pricing rules established in Section 15.4.6.1.1(a)(iv) of this Rate Schedule apply); and (xv) Long Island 30-Minute Reserves (including a separate demand curve applicable for each real-time interval the ISO has established a Scarcity Reserve Requirement for which the pricing rules established in Section 15.4.6.1.1(a)(v) of this Rate Schedule apply). Each Operating Reserve Demand Curve will apply to both the Day-Ahead Market and the Real-Time Market for the relevant product and location, except for those demand curves that apply to certain Scarcity Reserve Requirements which will be applicable only during the real-time intervals that a Scarcity Reserve Requirement has been established by the ISO. The ISO shall also establish a Scarcity Reserve Demand Curve for each Scarcity Reserve Requirement established by the ISO in the Real-Time Market for which the pricing rules established in Section 15.4.6.1.1(b) of this Rate Schedule apply. A Scarcity Reserve Demand Curve will be applicable only during the real-time intervals that such a Scarcity Reserve Requirement has been established by the ISO.

The market clearing pricing for Operating Reserves shall be calculated pursuant to Sections 15.4.5.1 and 15.4.6.1 of this Rate Schedule and in a manner consistent with the demand curves established in this Section so that Operating Reserves are not purchased by SCUC, RTC or RTD at a cost higher than the relevant demand curve indicates should be paid.

The ISO shall establish and post a target level for each locational Operating Reserves requirement for each hour, which will be the number of MW of Operating Reserves meeting that requirement that the ISO would seek to maintain in that hour. To the extent not otherwise already adjusted pursuant to Section 15.4.6.1.1(a) of this Rate Schedule, during each real-time interval in which the ISO has established a Scarcity Reserve Requirement, the ISO will adjust the target level for the locational 30-Minute Reserves requirement to account for the Scarcity Reserve

Requirement within the existing locational reserve region(s) to which all the Load Zones included in the Scarcity Reserve Region belong.

The ISO will then define an Operating Reserves demand curve for that hour corresponding to each Operating Reserves requirement as follows:

(a) Total Spinning Reserves: For quantities of Operating Reserves meeting the total Spinning Reserves requirement that are less than or equal to the target level for that locational requirement, the price on the total Spinning Reserves demand curve shall be $775/MW. For all other quantities, the price on the total Spinning Reserves demand curve shall be $0/MW.

(b) Eastern, Southeastern, New York City, or Long Island Spinning Reserves: For quantities of Operating Reserves meeting the Eastern, Southeastern, New York City, or Long Island Spinning Reserves requirement that are less than or equal to the target level for that locational requirement, the price on the Eastern, Southeastern, New York City, or Long Island Spinning Reserves demand curve shall be $40/MW. For all other quantities, the price on the Eastern, Southeastern, New York City, or Long Island Spinning Reserves demand curve shall be $0/MW.

(c) Southeastern, New York City, or Long Island Spinning Reserves: For quantities of Operating Reserves meeting the Southeastern, New York City, or Long Island Spinning Reserves requirement that are less than or equal to the target level for that locational requirement, the price on the Southeastern, New York City, or Long Island Spinning Reserves demand curve shall be $40/MW. For all other quantities, the price on the Southeastern, New York City, or Long Island Spinning Reserves demand curve shall be $0/MW.

(d) New York City Spinning Reserves: For quantities of Operating Reserves meeting the New York City Spinning Reserves requirement that are less than or equal to the target level for that locational requirement, the price on the New York City Spinning Reserves demand curve shall be $25/MW. For all other quantities, the price on the New York City Spinning Reserves demand curve shall be $0/MW.

(e) Long Island Spinning Reserves: For quantities of Operating Reserves meeting the Long Island Spinning Reserves requirement that are less than or equal to the target level for that locational requirement, the price on the Long Island Spinning Reserves demand curve shall be $25/MW. For all other quantities, the price on the Long Island Spinning Reserves demand curve shall be $0/MW.

(f) Total 10-Minute Reserves: For quantities of Operating Reserves meeting the total 10-minute reserves requirement that are less than or equal to the target level for that locational requirement, the price on the total 10-minute reserves demand curve shall be $750/MW. For all other quantities, the price on the total 10-minute reserves demand curve shall be $0/MW.

(g) Eastern, Southeastern, New York City, or Long Island 10-Minute Reserves: For quantities of Operating Reserves meeting the Eastern, Southeastern, New York City, or Long Island 10-minute reserves requirement that are less than or equal to the target level for that locational requirement, the price on the Eastern, Southeastern, New York City, or Long Island 10-minute reserves demand curve shall be $775/MW. For all other quantities, the price on the Eastern, Southeastern, New York City, or Long Island 10-minute reserves demand curve shall be $0/MW.

(h) Southeastern, New York City, or Long Island 10-Minute Reserves: For quantities of Operating Reserves meeting the Southeastern, New York City, or Long Island 10-minute reserves requirement that are less than or equal to the target level for that locational requirement, the price on the Southeastern, New York City, or Long Island 10-minute reserves demand curve shall be $40/MW. For all other quantities, the price on the Southeastern, New York City, or Long Island 10-Minute Reserves demand curve shall be $0/MW.

(i) New York City 10-Minute Reserves: For quantities of Operating Reserves meeting the New York City 10-minute reserves requirement that are less than or equal to the target level for that locational requirement, the price on the New York City 10-minute reserves demand curve shall be $25/MW. For all other quantities, the price on the New York City 10-minute reserves demand curve shall be $0/MW.

(j) Long Island 10-Minute Reserves: For quantities of Operating Reserves meeting the Long Island 10-minute reserves requirement that are less than or equal to the target level for that locational requirement, the price on the Long Island 10-minute reserves demand curve shall be $25/MW. For all other quantities, the price on the Long Island 10-minute reserves demand curve shall be $0/MW.

(k) Total 30-Minute Reserves: For quantities of Operating Reserves meeting the total 30-Minute Reserves requirement that are less than or equal to the target level for that locational requirement minus 655 MW, the price on the total 30-Minute

Reserves demand curve shall be $750/MW. For quantities of Operating Reserves meeting the total 30-Minute Reserves requirement that (i) are less than or equal to the target level for that locational requirement minus 600 MW, but (ii) exceed the target level for that locational requirement minus 655 MW, the price on the total 30-Minute Reserves demand curve shall be $625/MW. For quantities of Operating Reserves meeting the total 30-Minute Reserves requirement that (i) are less than or equal to the target level for that locational requirement minus 545 MW, but (ii) exceed the target level for that locational requirement minus 600 MW, the price on the total 30-Minute Reserves demand curve shall be $500/MW. For quantities of Operating Reserves meeting the total 30-Minute Reserves requirement that (i) are less than or equal to the target level for that locational requirement minus 490 MW, but (ii) exceed the target level for that locational requirement minus 545 MW, the price on the total 30-Minute Reserves demand curve shall be $375/MW. For quantities of Operating Reserves meeting the total 30-Minute Reserves requirement that (i) are less than or equal to the target level for that locational requirement minus 435 MW, but (ii) exceed the target level for that locational requirement minus 490 MW, the price on the total 30-Minute Reserves demand curve shall be $300/MW. For quantities of Operating Reserves meeting the total 30-Minute Reserves requirement that (i) are less than or equal to the target level for that locational requirement minus 380 MW, but (ii) exceed the target level for that locational requirement minus 435 MW, the price on the total 30-Minute Reserves demand curve shall be $225/MW. For quantities of Operating Reserves meeting the total 30-Minute Reserves requirement that (i) are less than or equal to the target level for that locational requirement minus 325 MW, but (ii) exceed the target level for that locational requirement minus 380 MW, the price on the total 30-Minute Reserves demand curve shall be $175/MW. For quantities of Operating Reserves meeting the total 30-Minute Reserves requirement that (i) are less than or equal to the target level for that locational requirement minus 200 MW, but (ii) exceed the target level for that locational requirement minus 325 MW, the price on the total 30-Minute Reserves demand curve shall be $100/MW. For quantities of Operating Reserves meeting the total 30-Minute Reserves requirement that (i) are less than or equal to the target level for that locational requirement, but (ii) exceed the target level for that locational requirement minus 200 MW, the price on the total 30-Minute Reserves demand curve shall be $40/MW. For all other quantities, the price on the total 30-Minute Reserves demand curve shall be $0/MW. However, the ISO will not schedule more total 30-Minute Reserves than the target level established for the requirement for that hour.

During each real-time interval that the ISO has established a Scarcity Reserve Requirement in the Real-Time Market for which the pricing rules established in Section 15.4.6.1.1(a)(i) of this Rate Schedule apply, the applicable Operating Reserves demand curve for total 30-Minute Reserves shall be as follows: For quantities of Operating Reserves meeting the total 30-Minute Reserves locational requirement target level plus the Scarcity Reserve Requirement ("NYCA scarcity target level") that are less than or equal to the NYCA scarcity target level minus an amount equal to the sum of 655 MW and the Scarcity Reserve Requirement, the price on the total 30-Minute Reserves demand curve shall be $750/MW.  For quantities of Operating Reserves meeting the NYCA scarcity target level that (i) are less than or equal to the NYCA scarcity target level minus an amount equal to the sum of 600 MW and the Scarcity Reserve Requirement, but (ii) exceed the NYCA scarcity target level minus an amount equal to the sum of 655 MW and the Scarcity Reserve Requirement, the price on the total 30-Minute Reserves demand curve shall be $625/MW.  For quantities of Operating Reserves meeting the NYCA scarcity target level that (i) are less than or equal to the NYCA scarcity target, but (ii) exceed the NYCA scarcity target level minus an amount equal to the sum of 600 MW and the Scarcity Reserve Requirement, the price on the total 30-Minute Reserves demand curve shall be $500/MW.  For all other quantities, the price on the total 30-Minute Reserves demand curve shall be $0/MW. However, the ISO will not schedule more total 30-Minute Reserves than the NYCA scarcity target level for that interval.

During each real-time interval that the ISO has established a Scarcity Reserve Requirement(s) in the Real-Time Market, other than a Scarcity Reserve Requirement for which the pricing rules established in Section 15.4.6.1.1(a)(i) of this Rate Schedule apply, the applicable Operating Reserves demand curve for total 30-Minute Reserves shall be as follows: For quantities of Operating Reserves meeting the total 30-Minute Reserves locational requirement target level plus the applicable Scarcity Reserve Requirement(s) ("adjusted NYCA target level") that are less than or equal to the adjusted NYCA target level minus an amount equal to the sum of 655 MW and the Scarcity Reserve Requirement(s), the price on the total 30-Minute Reserves demand curve shall be $750/MW. For quantities of Operating Reserves meeting the adjusted NYCA target level that (i) are less than or equal to the adjusted NYCA target level minus an amount equal to the sum of 600 MW and the Scarcity Reserve Requirement(s), but (ii) exceed the adjusted NYCA target level minus an amount equal to the sum of 655 MW and the Scarcity Reserve Requirement(s), the price on the total 30-Minute Reserves demand curve shall be $625/MW. For quantities of Operating Reserves meeting the adjusted NYCA target level that (i) are less than or equal to the adjusted NYCA target level, but (ii) exceed the adjusted NYCA target level minus an amount equal to the sum of 600 MW and the Scarcity Reserve Requirement(s), the price on the total 30-Minute Reserves demand curve shall be $500/MW. For all other quantities, the price on the total 30-Minute Reserves demand curve shall be $0/MW. However, the ISO will not schedule more total 30-Minute Reserves than the adjusted NYCA target level for that interval.

(l) Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves: For quantities of Operating Reserves meeting the Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves requirement that are less than or equal to the target level for that locational requirement, the price on the Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be $40/MW. For all other quantities, the price on the Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be $0/MW.

During each real-time interval that the ISO has established a Scarcity Reserve Requirement in the Real-Time Market for which the pricing rules established in Section 15.4.6.1.1(a)(ii) of this Rate Schedule apply, the applicable Operating Reserves demand curve for Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves shall be as follows: For quantities of Operating Reserves meeting the Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves locational requirement target level plus the Scarcity Reserve Requirement ("Eastern scarcity target level") that are less than or equal to the Eastern scarcity target level minus an amount equal to the Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves locational requirement target , the price on the Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be \$500/MW.  For the quantities of Operating Reserves meeting the Eastern scarcity target level that (i) are less than or equal to the Eastern scarcity target level , but (ii) exceed the Eastern scarcity target level minus an amount equal to the Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves locational requirement target level, the price on the Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be \$40/MW.  For all other quantities, the price on the Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be \$0/MW.

During each real-time interval that the ISO has established a Scarcity Reserve Requirement(s) in the Real-Time Market for which all the Load Zones encompassed by such Scarcity Reserve Requirement belong to the East of

Central-East reserve region, other than a Scarcity Reserve Requirement for which the pricing rules established in Section 15.4.6.1.1(a)(ii) of this Rate Schedule apply, the applicable Operating Reserves demand curve for Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves shall be as follows: For quantities of Operating Reserves meeting the Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves locational requirement target level plus the applicable Scarcity Reserve Requirement(s) ("adjusted Eastern target level") that are less than or equal to the adjusted Eastern target level, the price on the Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be $40/MW. For all other quantities, the price on the Eastern, Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be $0/MW.

(m) Southeastern, New York City, or Long Island 30-Minute Reserves: For quantities of Operating Reserves meeting the Southeastern, New York City, or Long Island 30-Minute Reserves requirement that are less than or equal to the target level for that locational requirement minus any incremental 30-Minute Reserve target level established by the ISO for an amount not to exceed 500 MW ("SENY incremental reserve target level"), the price on the Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be $500/MW. For quantities of Operating Reserves meeting the Southeastern, New York City, or Long Island 30-Minute Reserves requirement that (i) are less than or equal to the target level for that locational requirement, but (ii) exceed the target level for that locational requirement minus the SENY incremental reserve target level, the price on the

Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be $40/MW. For all other quantities, the price on the Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be $0/MW. During each real-time interval that the ISO has established a Scarcity Reserve Requirement in the Real-Time Market for which the pricing rules established in Section 15.4.6.1.1(a)(iii) of this Rate Schedule apply, the applicable Operating Reserves demand curve for Southeastern, New York City, or Long Island 30-Minute Reserves shall be as follows: For quantities of Operating Reserves meeting the Southeastern, New York City, or Long Island 30-Minute Reserves locational requirement target level plus the Scarcity Reserve Requirement ("Southeastern scarcity target level") that are less than or equal to the Southeastern scarcity target level minus the SENY incremental reserve target level, the price on the Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be $500/MW. For quantities of Operating Reserves meeting the Southeastern scarcity target level that (i) are less than or equal to the Southeastern scarcity target level, but (ii) exceed the Southeastern scarcity target level minus the SENY incremental reserve target level, the price on the Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be $40/MW. For all other quantities, the price on the Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be $0/MW. During each real-time interval that the ISO has established a Scarcity Reserve Requirement(s) in the Real-Time Market for which all the Load Zones encompassed by such Scarcity Reserve Requirement belong to the Southeastern

New York reserve region, other than a Scarcity Reserve Requirement for which the pricing rules established in Section 15.4.6.1.1(a)(iii) of this Rate Schedule apply, the applicable Operating Reserves demand curve for Southeastern, New York City, or Long Island 30-Minute Reserves shall be as follows: For quantities of Operating Reserves meeting the Southeastern, New York City, or Long Island 30-Minute Reserves locational requirement target level plus the applicable Scarcity Reserve Requirement(s) ("adjusted Southeastern target level") that are less than or equal to the adjusted Southeastern target level minus the SENY incremental reserve target level minus the SENY incremental reserve target level, the price on the Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be $500/MW. For quantities of Operating Reserves meeting the adjusted Southeastern target level that (i) are less than or equal to the adjusted Southeastern target level, but (ii) exceed the adjusted Southeastern target level minus the SENY incremental reserve target level, the price on the Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be $40/MW. For quantities of Operating Reserves meeting the adjusted Southeastern target level that are less than or equal to the adjusted Southeastern target level but that exceed the adjusted Southeastern target level minus the SENY incremental reserve target level, the price on the Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be $25/MW. For all other quantities, the price on the Southeastern, New York City, or Long Island 30-Minute Reserves demand curve shall be $0/MW.

(n) New York City 30-Minute Reserves: For quantities of Operating Reserves meeting the New York City 30-Minute Reserves requirement that are less than or equal to the target level for that locational requirement, the price on the New York City 30-Minute Reserves demand curve shall be $25/MW. For all other quantities, the price on the New York City 30-Minute Reserves demand curve shall be $0/MW.

During each real-time interval that the ISO has established a Scarcity Reserve Requirement in the Real-Time Market for which the pricing rules established in Section 15.4.6.1.1(a)(iv) of this Rate Schedule apply, the applicable Operating Reserves demand curve for New York City 30-Minute Reserves shall be as follows: For quantities of Operating Reserves meeting the New York City 30-Minute Reserves locational requirement target level plus the Scarcity Reserve Requirement ("N.Y.C. scarcity target level") that are less than or equal to the N.Y.C. scarcity target level minus an amount equal to the New York City 30-Minute Reserves locational requirement target level, the price on the New York City 30-Minute Reserves demand curve shall be $500/MW. For the quantities of Operating Reserves meeting the N.Y.C. scarcity target level that (i) are less than or equal to the N.Y.C. scarcity target level, but (ii) exceed the N.Y.C. scarcity target level minus an amount equal to the New York City 30-Minute Reserves locational requirement target level, the price on the New York City 30-Minute Reserves demand curve shall be $25/MW. For all other quantities, the price on the New York City 30-Minute Reserves demand curve shall be $0/MW.

(o) Long Island 30-Minute Reserves: For quantities of Operating Reserves meeting the Long Island 30-Minute Reserves requirement that are less than or equal to the target level for that locational requirement, the price on the Long Island 30-Minute Reserves demand curve shall be $25/MW. For all other quantities, the price on the Long Island 30-Minute Reserves demand curve shall be $0/MW. During each real-time interval that the ISO has established a Scarcity Reserve Requirement in the Real-Time Market for which the pricing rules established in Section 15.4.6.1.1(a)(v) of this Rate Schedule apply, the applicable Operating Reserves demand curve for Long Island 30-Minute Reserves shall be as follows: For quantities of Operating Reserves meeting the Long Island 30-Minute Reserves locational requirement target level plus the Scarcity Reserve Requirement ("Long Island scarcity target level") that are less than or equal to the Long Island scarcity target level minus an amount equal to the Long Island 30-Minute Reserves locational requirement target level, the price on the Long Island 30-Minute Reserves demand curve shall be $500/MW. For the quantities of Operating Reserves meeting the Long Island scarcity target level that (i) are less than or equal to the Long Island scarcity target level, but (ii) exceed the Long Island scarcity target level minus an amount equal to the Long Island 30-Minute Reserves locational requirement target level, the price on the Long Island 30-Minute Reserves demand curve shall be $25/MW. For all other quantities, the price on the Long Island 30-Minute Reserves demand curve shall be $0/MW.

The ISO will procure additional Operating Reserves to meet each Scarcity Reserve Requirement established by the ISO in the Real-Time Market for which the pricing rules established in Section 15.4.6.1.1(b) of this Rate Schedule apply. The Scarcity Reserve Demand Curve for each real-time interval in which the ISO has established such a Scarcity Reserve Requirement shall be defined as follows: For quantities of Operating Reserves meeting the Scarcity Reserve Requirement that are less than or equal to the Scarcity Reserve Requirement, the price on the Scarcity Reserve Demand Curve shall be $500/MW. For all other quantities, the price on the Scarcity Reserve Demand Curve shall be $0/MW.

In order to respond to operational or reliability problems that arise in real-time, the ISO may procure any Operating Reserve product 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 Operating Reserves Demand Curves the ISO, in consultation with its Market Advisor, shall conduct an initial review of them in accordance with the ISO Procedures. The scope of the review shall include, but not be limited to, an analysis of whether any Operating Reserve Demand Curve should be adjusted upward or downward in order to optimize the economic efficiency of any, or all, of 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 15.4.7 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 Operating Reserve Demand Curves and Scarcity Reserve Demand Curve.

The responsibilities of the Market Monitoring Unit that are addressed in the above section of Rate Schedule 4 to the Services Tariff are also addressed in Section 30.4.6.4.2 of Attachment O.

### 15.4.8 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) or Aggregation(s) supplying any one of the Operating Reserves under ISO control.  The Generator(s) or Aggregation(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) or Aggregation(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.

## 15.7 Rate Schedule 7 - Charges for Intermittent Power Resource Forecasting Services

The ISO shall charge each Intermittent Power Resource, except for Intermittent Power Resources in a DER Aggregation, that depends on wind or solar energy as its fuel that is interconnected in the New York Control Area in order to provide Energy to the LBMP Market or bilaterally to a Load internal or external to the NYCA, pursuant to this ISO Services Tariff or the NYISO OATT, and that has entered commercial operation, for forecasting service pursuant to this Rate Schedule, provided however no charge shall be assessed against any Intermittent Power Resource in commercial operation as of January 1, 2002 with nameplate capacity of 12 MWs or fewer.

The ISO shall calculate and assess such charges each Billing Period.

### 15.7.1 Responsibilities

The ISO shall calculate a forecasting service charge which shall include a fixed component and a component that varies by the nameplate capacity of the Intermittent Power Resource subject to this charge ("Forecasting Service Charge"). Such charge shall be based upon the costs the NYISO incurs in producing a forecast of the expected generation output of each Intermittent Power Resource subject to this charge.

### 15.7.2 Charges

Each Billing Period, the ISO shall assess to each Intermittent Power Resource subject to this charge the portion of the following monthly Forecasting Service Charge allocated to that Billing Period:

- $500.00 as a fixed fee; and
- $6.20 / MW of name plate capacity.

### 17.1 LBMP Calculation

The Locational Based Marginal Prices ("LBMPs" or "prices") for Suppliers and Loads in the Real-Time Market will be based on the system marginal costs produced by the Real-Time Dispatch ("RTD") program and during intervals when certain conditions exist at Proxy Generator Buses, the Real-Time Commitment ("RTC") program. LBMPs for Suppliers and Loads in the Day-Ahead Market will be based on the system marginal costs produced by the Security Constrained Unit Commitment ("SCUC"). LBMPs calculated by SCUC and RTD will incorporate the incremental dispatch costs of Dispatchable Resources that would be scheduled to meet an increment of Load. For pricing purposes, the incremental dispatch costs of Fast-Start Resources that Bid ISO-Committed Flexible shall be adjusted to include start-up costs and minimum generation costs based on the Start-Up Bids and Minimum Generation Bids or mitigated Start-Up Bids and Minimum Generation Bids of each such Resource, as described in Section 17.1.1.2 below.

To the extent that tradeoffs exist between scheduling providers to produce Energy or reduce demand, and scheduling them to provide Regulation Service or Operating Reserves, LBMPs shall reflect the effect of meeting an increment of Load, given those tradeoffs, at each location on the Bid Production Cost associated with those services. As such, those LBMPs may incorporate: (i) Bids for Regulation Service or Operating Reserves; or (ii) shortage costs associated with the inability to meet a Regulation Service or Operating Reserves requirement under the Regulation Service Demand Curve set forth in Rate Schedule 3 of this ISO Services Tariff and Operating Reserve Demand Curves and Scarcity Reserve Demand Curve set forth in Rate Schedule 4 of this ISO Services Tariff. For the purposes of calculating LBMPs under this

Services Tariff Section 17, Energy withdrawals by Withdrawal-Eligible Generators are treated as negative generation, and can set price.

Additionally, for the purpose of calculating Real-Time LBMPs when RTD is committing and dispatching Resources meeting Minimum Generation Levels and capable of starting in ten minutes pursuant to Section 4.4.2.4 of this ISO Services Tariff, RTD shall include in the incremental dispatch cost of each such Resource a start-up cost based on the Start-Up Bid of each such Resource and shall assume for each such Resource a zero downward response rate.

### 17.1.1 LBMP Bus Calculation Method

System marginal costs will be utilized in an *ex ante* computation to produce Day-Ahead and Real-Time LBMP bus prices using the following equations.

The LBMP at bus i can be written as:

$$\gamma_i = \lambda^R + \gamma_i^L + \gamma_i^C$$

Where:

$\gamma_i$ = LBMP at bus *i* in \$/MWh

$\lambda^R$ = the system marginal price at the Reference Bus

$\gamma_i^L$ = Marginal Losses Component of the LBMP at bus *i* which is the marginal cost of losses at bus *i* relative to the Reference Bus

$\gamma_i^C$ = Congestion Component of the LBMP at bus *i* which is the marginal cost of Congestion at bus *i* relative to the Reference Bus

The Marginal Losses Component of the LBMP at any bus i is calculated using the equation:

$$\gamma_i^L = (DF_i - 1)\lambda^R$$

Where:

$DF_i$ = delivery factor for bus *i* to the system Reference Bus and:

$$DF_i = \left(1 - \frac{\partial L}{\partial P_i}\right)$$

Where:

| | | |
|---|---|---|
| $L$ | = | NYCA losses; and |
| $P_i$ | = | injection at bus *i* |

The Congestion Component of the LBMP at bus i is calculated using the equation:

$$\gamma_i^c = -\left(\sum_{k \in K}^{n} GF_{ik}\mu_k\right)$$

Where:

| | | |
|---|---|---|
| $K$ | = | the set of Constraints; |
| $GF_{ik}$ | = | Shift Factor for bus *i* on Constraint *k* in the pre- or post-Contingency case which limits flows across that Constraint (the Shift Factor measures the incremental change in flow on Constraint *k*, expressed in per unit, for an increment of injection at bus *i* and a corresponding withdrawal at the Reference Bus); and |
| $\mu_k$ | = | the Shadow Price of Constraint *k* expressed in $/MWh, provided however, this Shadow Price shall not exceed the Transmission Shortage Cost. |

Substituting the equations for $\gamma_i^L$ and $\gamma_i^C$ into the first equation yields:

$$\gamma_i = \lambda^R + (DF_i - 1)\lambda^R - \sum_{k \epsilon K} GF_{ik}\mu_k$$

LBMPs will be calculated for the Day-Ahead and the Real-Time Markets. In the Day-Ahead Market, the three components of the LBMP at each location will be calculated from the SCUC results and posted for each of the twenty four (24) hours of the next day. The Real-Time LBMPs will be calculated and posted for each execution of RTD.

#### 17.1.1.1 Determining Shift Factors and Incremental System Losses

For the purposes of pricing and scheduling, Shift Factors, $GF_{ik}$, and loss delivery factors, $DF_i$, will reflect expected power flows, including expected unscheduled power flows. When determining prices and schedules, SCUC, RTC and RTD shall include both the expected power flows resulting from NYISO interchange schedules (*see* Section 17.1.1.1.2), and expected unscheduled power flows (*see* Section 17.1.1.1.1). All NYCA Resource, NYCA Load and Proxy Generator Bus Shift Factors and loss delivery factors will incorporate internal and coordinated external transmission facility outages, power flows due to schedules, and expected unscheduled power flows.

##### 17.1.1.1.1 Determining Expected Unscheduled Power Flows

In the Day-Ahead Market, expected unscheduled power flows will ordinarily be determined based on historical, rolling 30-day on-peak and off-peak averages. To ensure expected unscheduled power flows accurately reflect anticipated conditions, the frequency and/or period used to determine the historical average may be modified by the NYISO to address market rule, system topology, operational, or other changes that would be expected to significantly impact unscheduled power flows. The NYISO will publicly post the Day-Ahead on-peak and off-peak unscheduled power flows on its web site.

In the Real-Time Market, expected unscheduled power flows will ordinarily be determined based on current power flows, modified to reflect expected changes over the real-time scheduling horizon.

#### 17.1.1.1.2 Determining Expected Power Flows Resulting from NYISO Interchange Schedules

In the Day-Ahead Market, for purposes of scheduling and pricing, SCUC will establish expected power flows for the ABC interface, JK interface and Hopatcong-Ramapo interconnection based on the following:

a. The percentage of PJM-NYISO scheduled interchange that is expected to flow over the Hopatcong-Ramapo interconnection;

   1) The expected flow over the Hopatcong-Ramapo interconnection may also be adjusted by a MW offset to reflect expected operational conditions;

b. The percentage of PJM-NYISO scheduled interchange that is expected to flow over the ABC interface;

   1) The expected flow over the ABC interface will include an additional Operational Base Flow as described in Attachment CC to the OATT;

c. The percentage of PJM-NYISO scheduled interchange (if any) that is expected to flow over the JK interface;

   1) The expected flow over the JK interface will include an additional Operational Base Flow as described in Attachment CC to the OATT.

The terms “ABC interface” and “JK interface” have the meaning ascribed to them in Attachment CC to the OATT.

The NYISO shall post the interchange percentage and Operational Base Flow values it is currently using to establish Day-Ahead and real-time expected Hopatcong-Ramapo interconnection, ABC interface and JK interface flows for purposes of scheduling and pricing on its web site.  If the NYISO determines it is necessary to change the posted Hopatcong-Ramapo, ABC or JK interchange percentage or Operational Base Flow values, it will provide notice to its Market Participants as far in advance of the change as is practicable under the circumstances.

In the Day-Ahead Market, scheduled interchange that is not expected to flow over the ABC interface, JK interface or Hopatcong-Ramapo interconnection (or on Scheduled Lines) will be expected to flow over the NYISO's other interconnections. Expected flows over the NYISO's other interconnections will be determined consistent with the expected impacts of scheduled interchange and consistent with shift factors and delivery factors calculated in accordance with Section 17.1.1.1, above.

For pricing purposes, flows in the Real-Time Market will be established for the ABC interface, JK interface, and Hopatcong-Ramapo interconnection based on the current flow, modified to reflect the expected incremental impacts of changes to interchange schedules over the forward scheduling horizon in a manner that is consistent with the method used to establish Day-Ahead power flows over these facilities. Expected flows over the NYISO's other interconnections will be determined based on the current flow, modified to reflect the expected incremental impacts of changes to interchange schedules over the forward scheduling horizon, and shall be consistent with shift factors and delivery factors calculated in accordance with Section 17.1.1.1, above.

**17.1.1.1.3 Scheduled Lines and Chateauguay Interconnection with Hydro Quebec**

For purposes of scheduling and pricing, the NYISO expects that power flows will ordinarily match the interchange schedule at Scheduled Lines, and at the NYCA's Chateauguay interconnection with Hydro Quebec, in both the Day-Ahead and Real-Time Markets.

#### 17.1.1.2 Incremental Dispatch Costs for Pricing Fast-Start Resources

For the purpose of calculating LBMPs for the Day-Ahead and Real-Time Markets, the incremental dispatch costs of Fast-Start Resources that Bid ISO-Committed Flexible shall be adjusted to include start-up costs and minimum generation costs based on the Start-Up Bids and Minimum Generation Bids or mitigated Start-Up Bids and Minimum Generation Bids of each such Resource ("Adjusted Dispatch Costs"). For start-up costs, the ISO will use a Fast-Start Resource's single point Start-Up Bid if one is submitted (or the mitigated Bid, where appropriate). If a Fast-Start Resource does not submit a single point Start-Up Bid in the Real-Time Market, the ISO will use the point on the Fast-Start Resource's multi-point Start-Up Bid curve (or its mitigated multi-point Start-Up Bid curve, where appropriate) that corresponds to the shortest specified down time.

The ISO will use the following procedure to determine a Fast-Start Resource's Adjusted Dispatch Costs for each pricing interval in the Day-Ahead and Real-Time Markets. The ISO will determine the "cost-minimizing output level" that minimizes the average as-Bid operating cost ("minimum average cost") for that Fast-Start Resource in each hour of the Day-Ahead Market and in each RTD interval of the Real-Time Market. The average as-Bid operating cost for a Fast-Start Resource at a given operating level shall include the Fast-Start Resource's minimum generation costs and incremental energy costs to provide Energy at that operating level, based on the Resource's Bids, or mitigated Bids as appropriate. The average as-Bid operating cost may also include some or all of the Fast-Start Resource's start-up costs based on the Resource's Bids, or mitigated Bids as appropriate, in a given hour, to be determined as follows: (1) for the Day-Ahead Market, a Fast-Start Resource's average as-Bid operating cost to operate in a given hour will include start-up costs for the hour the Resource is scheduled to start; or (2) for the Real-Time Market, a Fast-Start Resource's average as-Bid operating cost to operate in a given RTD interval will include the start-up costs for approximately the first fifteen minutes, among consecutive operating intervals, after the Resource is scheduled to start, *i.e.*, for each RTD interval that starts within the first fifteen minutes after the Resource is scheduled to start, the average as-Bid operating cost to operate in that interval will include start-up costs.

For all output levels less than or equal to the cost-minimizing output level, the ISO will set the Adjusted Dispatch Cost equal to the minimum average cost. For all output levels greater than the cost-minimizing output level, the ISO will set the Adjusted Dispatch Cost equal to the price on the Resource's Bid curve. The ISO will calculate Adjusted Dispatch Costs for each output level between the Fast-Start Resource's minimum operating level and its $UOL_N$ or $UOL_E$ (whichever is applicable).

For the purpose of calculating LBMPs for the Day-Ahead and Real-Time Markets, all Fast-Start Resources that Bid ISO-Committed Flexible are treated as flexible and able to be dispatched anywhere between zero (0) MW and their $UOL_N$ or $UOL_E$ (whichever is applicable).

Additional rules for Fixed Block Units are set forth below in Section 17.1.2.1.2.

### 17.1.2 Real-Time LBMP Calculation Procedures

For each RTD interval, the ISO shall use the procedures described below in Sections 17.1.2.1-17.1.2.1.4 to calculate Real-Time LBMPs at each Load Zone, Generator bus and Transmission Node. The LBMP bus and zonal calculation procedures are described in Sections 17.1.1 and 17.1.5 of this Attachment B, respectively. Procedures governing the calculation of LBMPs at Proxy Generator Buses are set forth below in Section 17.1.6 of this Attachment B.

#### 17.1.2.1 General Procedures

##### 17.1.2.1.1 Overview

The ISO shall calculate Real-Time Market LBMPs using the three passes of each RTD run, except as noted below in Section 17.1.2.1.3. A new RTD run will initialize every five minutes and each run will produce prices and schedules for five points in time (the optimization period). Only the prices and schedules determined for the first time point of the optimization period will be binding. Prices and schedules for the other four time points of the optimization period are advisory.

Each RTD run shall, depending on when it occurs during the hour, have a bid optimization horizon of fifty, fifty-five, or sixty minutes beyond the first, or binding, point in time that it addresses. The posting time and the first time point in each RTD run, which establishes binding prices and schedules, will be five minutes apart. The remaining points in time in each optimization period can be either five, ten, or fifteen minutes apart depending on when the run begins within the hour. The points in time in each RTD optimization period are arranged so that they parallel as closely as possible RTC's fifteen minute evaluations.

For example, the RTD run that posts its results at the beginning of an hour ("$RTD_0$") will initialize at the fifty-fifth minute of the previous hour and produce schedules and prices over a fifty-five minute optimization period. $RTD_0$ will produce binding prices and schedules for the RTD interval beginning when it posts its results (i.e., at the beginning of the hour) and ending at the first time point in its optimization period (i.e., five minutes after the hour). It will produce advisory prices and schedules for its second time point, which is ten minutes after the first time point in its optimization period, and advisory prices and schedules for its third, fourth and fifth time points, each of which would be fifteen minutes apart. The RTD run that posts its results at five minutes after the beginning of the hour ("$RTD_5$") will initialize at the beginning of the hour and produce prices over a fifty minute optimization period. $RTD_5$ will produce binding prices and schedules for the RTD interval beginning when it posts its results (i.e., at five minutes after the hour) and ending at the first time point in its optimization period (i.e., ten minutes after the hour.) It will produce advisory prices and schedules for its second time point (which is five minutes after the first time point), and advisory prices and schedules for its third, fourth and fifth time points, each of which would be fifteen minutes apart. The RTD run that posts its results at ten minutes after the beginning of the hour ("$RTD_{10}$") will initialize at five minutes after the beginning of the hour and produce prices over a sixty minute optimization period. $RTD_{10}$ will produce binding prices and schedules for the interval beginning when it posts its results (i.e., at ten minutes after the hour) and ending at the first time point in its optimization period (i.e., fifteen minutes after the hour.) It will produce advisory prices and schedules for its second, third, fourth and fifth time points, each of which would be fifteen minutes after the preceding time point.

**17.1.2.1.2 Description of the Real-Time Dispatch Process**

**17.1.2.1.2.1 The First Pass**

The first RTD pass consists of a least bid cost, multi-period co-optimized dispatch for Energy, Regulation Service and Operating Reserves that treats all Fixed Block Units that are committed by RTC, or are otherwise instructed to be online or remain online by the ISO as if they were blocked on at their $UOL_N$ or $UOL_E$, whichever is applicable. Fixed Block Units meeting Minimum Generation Levels and capable of being started in ten minutes that have not been committed by RTC are treated as flexible (i.e. able to be dispatched anywhere between zero (0) MW and their $UOL_N$ or $UOL_E$, whichever is applicable). The first pass establishes "physical base points" (i.e., real-time Energy schedules) and real-time schedules for Regulation Service and Operating Reserves for the first time point of the optimization period. Physical base points and schedules established for the first time point shall be binding and shall remain in effect until the results of the next run are posted. Physical base points and schedules established for all subsequent time points shall be advisory. The first pass also produces information that is used to calculate the RTD Base Point Signals that the ISO sends to Suppliers.

When establishing physical base points, the ISO shall assume that each Generator and Aggregation will move toward the physical base point established during the first pass of the prior RTD run at its specified response rate.

**17.1.2.1.2.1.1 Upper and Lower Dispatch Limits for Dispatchable Resources Other Than Intermittent Power Resources That Depend on Wind or Solar Energy as Their Fuel**

When setting physical base points for a Dispatchable Resource at the first time point, the ISO shall ensure that they do not fall outside of the bounds established by the Dispatchable Resource's lower and upper dispatch limits. A Dispatchable Resource's dispatch limits shall be determined based on whether it was feasible for it to reach the physical base point calculated by the last RTD run given its: (A) metered output level and metered Energy Level (if applicable) at the time that the RTD run was initialized; (B) response rate; (C) minimum generation level/LOL; (D) USL and LSL (if applicable); and (E) $UOL_N$ or $UOL_E$, whichever is applicable. If it was feasible for the Dispatchable Resource to reach that base point, then its upper and lower dispatch limits shall reflect the highest and lowest output levels it could achieve over the next RTD interval starting from its previous base point, subject to factors (A) through (E) specified above. If it was not feasible for the Dispatchable Resource to reach that base point, then its upper and lower dispatch limits shall reflect the highest and lowest output levels it could achieve over the next RTD interval, subject to factors (A) through (E) specified above, but instead starting from the feasible output level closest to its previous base point.

When setting physical base points for a Dispatchable Resource at later time points, the ISO shall ensure that they do not fall outside of the bounds established by the Resource's lower and upper dispatch limits for that time point. A Resource's dispatch limits at later time points shall be based on its: (A) dispatch limits from the first time point; (B) response rate; (C) minimum generation level/LOL; (D) Energy Level, USL and LSL (if applicable); and (E) $UOL_N$ or $UOL_E$, whichever is applicable.

The upper dispatch limit for a Dispatchable Resource at later time points shall be determined by adjusting the upper dispatch limit from the first time point at the Resource's response rate, up to its $UOL_N$ or $UOL_E$, whichever is applicable, considering Energy Level limitations for ISO-Managed ESRs. The lower dispatch limit for a Dispatchable Resource at later time points shall be determined by adjusting the lower dispatch limit from the first time point at the Resource's response rate, down to its minimum generation level/LOL considering applicable Energy Level limitations for ISO-Managed ESRs, or to a Demand Side Resource's Demand Reduction level.

The RTD Base Point Signals sent to Dispatchable Resources shall be the same as the physical base points determined above.

**17.1.2.1.2.1.2 Upper and Lower Dispatch Limits for Intermittent Power Resources That Depend on Wind or Solar Energy as Their Fuel**

For all time points of the optimization period, the Lower Dispatch Limit shall be the higher of (a) an Intermittent Power Resource's metered output level at the time that the RTD run was initialized reduced by its response rate, or (b) zero. The Upper Dispatch Limit shall be the Wind and Solar Energy Forecast for that Resource. For Intermittent Power Resources depending on wind as their fuel in commercial operation as of January 1, 2002 with a name plate capacity of 12 MWs or fewer, the Upper and Lower Dispatch Limits shall be the output level specified by the Wind and Solar Energy Forecast.

**17.1.2.1.2.1.3. Setting Physical Basepoints for Fixed Generators and Aggregations**

When setting physical base points for Self-Committed Fixed Generators and Aggregations in any time point, the ISO shall consider the feasibility of the Resource reaching the output levels that it specified in its self-commitment request for each time point in the RTD run given: (A) its metered output at the time that the run was initialized; and (B) its response rate.

When setting physical base points for ISO-Committed Fixed Generators and Aggregations in any time point, the ISO shall consider the feasibility of the Resource reaching the output levels scheduled for it by RTC for each time point in the RTD run given: (A) its metered output at the time that the run was initialized; and (B) its response rate.

The RTD Base Point Signals sent to Self-Committed Fixed Generators and Aggregations shall follow the quarter hour operating schedules that those Generators and Aggregations submitted in their real-time self-commitment requests.

The RTD Base Point Signals sent to ISO-Committed Fixed Generators shall follow the quarter hour operating schedules established for those Generators by RTC, regardless of their actual performance.  To the extent possible, the ISO shall honor the response rates specified by such Generators when establishing RTD Base Point Signals.  If a Self-Committed Fixed Generator's or Aggregation's operating schedule is not feasible based on its real-time self-commitment requests then its RTD Base Point Signals shall be determined using a response rate consistent with the operating schedule changes.

#### 17.1.2.1.2.2 The Second Pass

The second RTD pass consists of a least bid cost, multi-period, co-optimized dispatch for Energy, Regulation Service, and Operating Reserves that treats: (i) all Fast-Start Resources that are committed by RTC; (ii) all Fixed Block Units meeting Minimum Generation Levels and capable of starting in ten minutes that have not been committed by RTC; and (iii) all Fixed Block Units otherwise instructed to be online or remain online by the ISO, as flexible (i.e., able to be dispatched anywhere between zero (0) MW and their $UOL_N$ or $UOL_E$, whichever is applicable), regardless of their minimum run-time status. The second pass calculates real-time Energy prices and real-time Shadow Prices for Regulation Service and Operating Reserves that the ISO shall use for settlement purposes pursuant to Section 4, Rate Schedule 15.3, and Rate Schedule 15.4 of this ISO Services Tariff respectively. The ISO will not use schedules for Energy, Regulation Service and Operating Reserves established in the second pass to dispatch Resources.

The upper and lower dispatch limits used for ISO-Committed Fixed and Self-Committed Fixed Resources shall be the same as the physical base points calculated in the first pass.

##### 17.1.2.1.2.2.1 Upper and Lower Dispatch Limits for Dispatchable Resources Other Than Intermittent Power Resources That Depend on Wind or Solar Energy as Their Fuel

The upper dispatch limit for the first time point of the second pass for a Dispatchable Resource shall be the higher of: (A) its upper dispatch limit from the first pass; or (B) its "pricing base point" from the first time point of the prior RTD interval adjusted up within its Dispatchable range for any possible ramping since that pricing base point was issued less the higher of: (i) the physical base point established during the first pass of the RTD immediately prior to the previous RTD minus the Resource's metered output level at the time that the current RTD run was initialized, or (ii) zero.

The lower dispatch limit for the first time point of the second pass for a Dispatchable Resource shall be the lower of: (A) its lower dispatch limit from the first pass; or (B) its "pricing base point" from the first time point of the prior RTD interval adjusted down within its Dispatchable range to account for any possible ramping since that pricing base point was issued plus the higher of: (i) the Resource's metered output level at the time that the current RTD run was initialized minus the physical base point established during the first pass of the RTD immediately prior to the previous RTD, considering the metered Energy Level if applicable; or (ii) zero.

The upper dispatch limit for the later time points of the second pass for a Dispatchable Resource shall be determined by adjusting its upper dispatch limit from the first time point at the Resource's response rate, up to its $UOL_N$ or $UOL_E$, whichever is applicable, considering Energy Level limitations for ISO-Managed ESRs. The lower dispatch limit for the later time points of the second pass for a Dispatchable non-Fast-Start Resource shall be determined by adjusting its lower dispatch limit from the first time point at the Resource's response rate, down to its minimum generation level/LOL, considering Energy Level limitations for ISO-Managed ESRs. The lower dispatch limit for the later time points of the second pass for a Fast Start Resource shall be determined by decreasing its lower dispatch limit from the first time point at the Resource's response rate, down to zero.

**17.1.2.1.2.2.2 Upper and Lower Dispatch Limits for Intermittent Power Resources That Depend on Wind or Solar Energy as Their Fuel**

For the first time point and later time points for Intermittent Power Resources that depend on wind or solar energy as their fuel, the Lower Dispatch Limit shall be zero and the Upper Dispatch Limit shall be the Wind and Solar Energy Forecast for that Resource. For Intermittent Power Resources depending on wind as their fuel in commercial operation as of January 1, 2002 with a name plate capacity of 12 MWs or fewer, the Upper and Lower Dispatch Limits shall be the output level specified by the Wind and Solar Energy Forecast.

**17.1.2.1.2.3 The Third Pass**

The third RTD pass is reserved for future use.

**17.1.2.1.3 Variations in RTD-CAM**

When the ISO activates RTD-CAM, the following variations to the rules specified above in Sections 17.1.2.1.1 and 17.1.2.1.2 shall apply.

First, if the ISO enters reserve pickup mode: (i) the ISO will produce prices and schedules for a single ten minute interval (not for a multi-point co-optimization period); (ii) the ISO shall set Regulation Service schedules to zero as described in Rate Schedule 15.3 of this ISO Services Tariff; (iii) the ISO will have discretion to make additional Generator and Aggregations commitments before executing the three RTD passes; and (iv) the ISO will have discretion to allow the RTD Base Point Signal of each Dispatchable Generator or Aggregation to be set to the higher of the Generator's or Aggregation's physical base point or its actual supply level.

Second, if the ISO enters maximum generation pickup mode: (i) the ISO will produce prices and schedules for a single five minute interval (not for a multi-point co-optimization period); (ii) the ISO shall set Regulation Service schedules to zero as described in Rate Schedule 15.3 of this ISO Services Tariff; (iii) the ISO will have discretion to make additional Generator and Aggregation commitments in the affected area before executing the three RTD passes; and (iv) the ISO will have discretion to either move the RTD Base Point Signal of each Generator and Aggregation within the affected area towards its $UOL_E$ at its emergency response rate or set it at a level equal to its physical base point.

Third, if the ISO enters basepoints ASAP – no commitments mode it will produce prices and schedules for a single five minute interval (not for a multi-point co-optimization period).

Fourth, if the ISO enters basepoints ASAP – commit as needed mode: (i) the ISO will produce price and schedules for a single five minute interval (not for a multi-point co-optimization period); and (ii) the ISO may make additional commitments of Generators and Aggregations that are capable of starting within ten minutes before executing the three RTD passes.

Fifth, and finally, if the ISO enters re-sequencing mode it will solve for a ten-minute optimization period consisting of two five-minute time points.

**17.1.2.1.4 The Real-Time Commitment ("RTC") Process and Automated Mitigation**

Attachment H of this Services Tariff shall establish automated market power mitigation measures that may affect the calculation of Real-Time LBMPs. To the extent that these measures are implemented they shall be incorporated into the RTC software through the establishment of a second, parallel, commitment evaluation that will assess the impact of the mitigation measures. The first evaluation, referred to as the "RTC evaluation," will determine the schedules and prices that would result using an original set of offers and Bids before any additional mitigation measures, the necessity for which will be considered in the RTC evaluation, are applied. The second evaluation, referred to as the "RT-AMP" evaluation, will determine the schedules and prices that would result from using the original set of offers and bids as modified by any necessary mitigation measures. Both evaluations will follow the rules governing RTC's operation that are set forth in Section 4 of and this Attachment B to this ISO Services Tariff.

In situations where Attachment H specifies that real-time automated mitigation measures be utilized, the ISO will perform the two parallel RTC evaluations in a manner that enables it to implement mitigation measures one RTC run (i.e., fifteen minutes) in the future. For example, $RTC_{15}$ and RT-$AMP_{15}$ will perform Resource commitment evaluations simultaneously. RT-$AMP_{15}$ will then apply the mitigation "impact" test, account for reference bid levels as appropriate and determine which Resources are actually to be mitigated. This information will then be conveyed to $RTC_{30}$ which will make Resource commitments consistent with the application of the mitigation measures (and will thus indirectly be incorporated into future RTD runs).

### 17.1.3 Day-Ahead LBMP Calculation Procedures

LBMPs in the Day-Ahead Market are calculated using five passes. The first two passes are commitment and dispatch passes; the last three are dispatch only passes.

Pass 1 consists of a least cost commitment and dispatch to meet Bid Load and reliable operation of the NYS Power System that includes Day-Ahead Reliability Units.

It consists of several steps. Step 1A is a complete Security Constrained Unit Commitment ("SCUC") to meet Bid Load. At the end of this step, committed Fast-Start Resources, Imports, Exports, Virtual Supply, Virtual Load, Demand Side Resources and non-Fast-Start Resources are dispatched to meet Bid Load. Fast-Start Resources are treated as dispatchable between zero MW and their $UOL_N$ or $UOL_E$, whichever is applicable. For mitigation purposes, LBMPs are calculated from this dispatch. Following Step 1A, SCUC tests for automated mitigation procedure ("AMP") activation.

If AMP is activated, Step 1B tests to determine if the AMP will be triggered by mitigating offer prices subject to mitigation that exceed the conduct threshold to their respective reference prices. These mitigated offer prices together with all originally submitted offer prices not subject to automatic mitigation are then used to commit generation and dispatch energy to meet Bid Load. This step is another iteration of the SCUC process. At the end of Step 1B, committed Fast-Start Resources, Imports, Exports, Virtual Supply, Virtual Load, Demand Side Resources, and non-Fast-Start Resources are again dispatched to meet Bid Load using the same mitigated or unmitigated Bids used to determine the commitment to meet Bid Load. Fast-Start Resources are treated as dispatchable between zero MW and their $UOL_N$ or $UOL_E$, whichever is applicable. For mitigation purposes, LBMPs are again calculated from this dispatch. The LBMPs determined at the end of Step 1B are compared to the LBMPs determined at the end of Step 1A to determine the hours and zones in which the impact test is met.

In Step 1C, generation offer prices subject to mitigation that exceed the conduct threshold are mitigated for those hours and zones in which the impact test was met in Step 1B. The mitigated offer prices, together with the original unmitigated offer price of units whose offer prices were not subject to mitigation, or did not trigger the conduct or impact thresholds, are used to commit generation and dispatch energy to meet Bid Load. This step is also a complete iteration of the SCUC process. At the end of Step 1C, committed Fast-Start Resources, Imports, Exports, virtual supply, virtual load, Demand Side Resources, and non- Fast-Start Resources are again dispatched to meet Bid Load. Fast-Start Resources are treated as dispatchable between zero MW and their $UOL_N$ or $UOL_E$, whichever is applicable. For mitigation purposes, LBMPs are again calculated from this dispatch.

All Demand Side Resources and non-Fixed Block Units committed in the final step of Pass 1 (which could be either step 1A, 1B, or 1C depending on activation of the AMP) are blocked on at least to minimum generation level in Passes 4 through 6. All Energy Storage

Resources and Aggregations dispatched in the final step of Pass 1 (which could be either Step 1A, 1B, or 1C depending on activation of the AMP) are blocked on at the dispatch that was determined in Pass 1 in Passes 2 through 4. The resources required to meet local system reliability are determined in Pass 1.

Pass 2 consists of a least cost commitment and dispatch of Fast-Start Resources, Imports, Exports, Demand Side Resources and non- Fast-Start Resources to meet forecast Load requirements in excess of Bid Load, considering the Wind and Solar Energy Forecast, that minimizes the cost of incremental Minimum Generation and Start Up Bids, given revenues for Minimum Generation Energy based on LBMPs calculated in Pass 1, and assumes all Fast-Start Resources are dispatchable between zero MW and their $UOL_N$ or $UOL_E$, whichever is applicable. Incremental Import Capacity needed to meet forecast Load requirements is determined in Pass 2. Fixed Block Units committed in this pass are not included in the least cost dispatches of Passes 5 or 6. Demand Side Resources and non-Fixed Block Units committed in this step are blocked on at least to minimum generation level in Passes 4 through 6. Intermittent Power Resources that depend on wind or solar energy as their fuel committed in this pass as a result of the consideration of the Wind and Solar Energy Forecast are not blocked in Passes 5 or 6.

Pass 3 is reserved for future use.

Pass 4 consists of a least cost dispatch to forecast Load. It is not used to set schedules or prices. It is used for operational purposes and provides a dispatch of Fast-Start Resources, Imports, Exports, Demand Side Resources and non- Fast-Start Resources committed in Passes 1 or 2. Incremental Import Capacity committed in Pass 2 is re-evaluated and may be reduced if no longer required.

Pass 5 consists of a least cost dispatch of Fast-Start Resources, Imports, Exports, Virtual Supply, Virtual Load, Demand Side Resources and non- Fast-Start Resources committed to meet Bid Load, based where appropriate on offer prices as mitigated in Pass 1. Fast-Start Resources are treated as dispatchable between zero MW and their $UOL_N$ or $UOL_E$, whichever is applicable. LBMPs used to settle the Day-Ahead Market are calculated from this dispatch. The Shadow Prices used to compute Day-Ahead Market clearing prices for Regulation Service and for Operating Reserves in Rate Schedules 3 and 4 of this ISO Services Tariff are also calculated from this dispatch. Final schedules for all Imports, Exports, Virtual Supply, Virtual Load, Demand Side Resources and non-Fixed Block Units in the Day-Ahead Market are calculated from this dispatch.

Pass 6 consists of a least cost dispatch of all Day-Ahead committed Resources, Imports, Exports, Virtual Supply, Virtual Load, based where appropriate on offer prices as mitigated in Pass 1, with the schedules of all Fixed Block Units committed in the final step of Pass 1 blocked on at maximum Capacity. Final schedules for Fixed Block Units in the Day-Ahead Market are calculated from this dispatch.

### 17.1.4 Determination of Transmission Shortage Cost

The applicable Transmission Shortage Cost depends on whether a particular transmission Constraint is associated with a transmission facility or Interface that includes a non-zero constraint reliability margin value. The ISO shall establish constraint reliability margin values for transmission facilities and Interfaces. Non-zero constraint reliability margin values established by the ISO are normally equal to 20 MW. The ISO assigns a non-zero constraint reliability margin value (normally equal to 5 MW) to certain transmission facilities accommodating power flows out of export constrained areas (or “generation pockets”) that, as further described below, are subject to a different Transmission Shortage Cost (for purposes of this Section 17.1.4, the aforementioned facilities are hereinafter referred to as "Identified Facilities"). The ISO shall post to its website a list of transmission facilities and Interfaces assigned a constraint reliability margin value other than 20 MW. The list posted by the ISO shall also include Identified Facilities and the applicable constraint reliability margin value assigned to each such facility.

Except for Identified Facilities, when evaluating transmission Constraints associated with transmission facilities and Interfaces assigned a non-zero constraint reliability margin value, SCUC, RTC, and RTD shall include consideration of a six-step demand curve consisting of the following components: (1) a MW value of additional available resource capacity equal to or less than 20% of the applicable constraint reliability margin value, at a cost of $200/MWh; (2) a MW value of additional available resource capacity equal to or less than 40% of the applicable constraint reliability margin value, but greater than 20% of such value, at a cost of $350/MWh; (3) a MW value of additional available resource capacity equal to or less than 60% of the applicable constraint reliability margin value, but greater than 40% of such value, at a cost of $600/MWh; (4) a MW value of additional available resource capacity equal to or less than 80% of the applicable constraint reliability margin value, but greater than 60% of such value, at a cost of $1,500/MWh; (5) a MW value of additional available resource capacity equal to or less than 100% of the applicable constraint reliability margin value, but greater than 80% of such value, at a cost of $2,500/MWh; and (6) any MW value of additional available resource capacity greater than the applicable constraint reliability margin value, at a cost of $4,000/MWh.

When evaluating transmission Constraints associated with Identified Facilities, SCUC, RTC, and RTD shall include consideration of a two-step demand curve consisting of the following components: (1) a MW value of additional available resource capacity equal to or less than the applicable constraint reliability margin value, at a cost of $100/MWh; and (2) any MW value of additional available resource capacity greater than the applicable constraint reliability margin value, at a cost of $250/MWh.

For transmission facilities and Interfaces assigned a non-zero constraint reliability margin value, the applicable demand curve, as described above, shall be applied in a manner such that it is considered in resolving, collectively, all applicable transmission Constraints associated with a particular transmission facility or Interface rather than applying a distinct demand curve individually to each such transmission Constraint. In the event of redundant transmission Constraints on in-series transmission facilities or parallel transmission facilities, the most limiting of such redundant transmission Constraints shall be deemed binding and utilized for the purposes of determining the applicable Shadow Price for the redundant transmission Constraints at issue. The less limiting of such redundant transmission Constraints on in-series transmission facilities or parallel transmission facilities shall be deemed non-binding and assigned a zero value Shadow Price. The MW value of the additional available resource capacity associated with each step of the applicable demand curve, as described above, shall be rounded to the nearest whole number.

For transmission facilities and Interfaces with a constraint reliability margin value of zero, the Shadow Price for transmission Constraints associated with such facilities and Interfaces shall not exceed $4,000/MWh. SCUC, RTC, and RTD shall not include consideration of additional available resource capacity provided by a demand curve mechanism for such transmission Constraints.

In evaluating transmission Constraints for transmission facilities and Interfaces with a constraint reliability margin value of zero, the ISO will determine whether sufficient available resource capacity exists to solve each transmission Constraint at its applicable limit. If sufficient available resource capacity does not exist to solve the transmission Constraint at its otherwise applicable limit, the ISO shall increase the applicable limit for such transmission Constraint to an amount achievable by the available resource capacity plus 0.2 MW.

Notwithstanding anything to the contrary herein, in circumstances where the ISO is the "Non-Monitoring RTO" with respect to a transmission Constraint associated with a "Flowgate" subject to "M2M" coordination, the ISO's evaluation of such transmission Constraint in the Real-Time Market shall be consistent with the rules and procedures specified in Section 35.23 of Attachment CC of the ISO OATT. For purposes of this Section 17.1.4, the terms "Non-Monitoring RTO," "Flowgate," and "M2M" shall have the meaning specified in Section 35.2.1 of Attachment CC of the ISO OATT.

The ISO may periodically evaluate the Transmission Shortage Cost to determine whether it is necessary to modify the Transmission Shortage Cost to avoid future operational or reliability problems. The ISO will consult with its Market Monitoring Unit after it conducts this evaluation. If the ISO determines that it is necessary to modify the Transmission Shortage Cost in order to avoid future operational or reliability problems the resolution of which would otherwise require recurring operator intervention outside normal market scheduling procedures, in order to avoid among other reliability issues, a violation of NERC Interconnection Reliability Operating Limits or System Operating Limits, it may temporarily modify it for a period of up to ninety days, provided however the ISO shall file such change with the Commission pursuant to Section 205 of the Federal Power Act within 45 days of such modification. 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: (i) consult with those entities as soon as reasonably possible after implementing a temporary modification and shall explain the reasons for the change; and (ii) notify Market Participants of any temporary modification.

The responsibilities of the ISO and the Market Monitoring Unit in evaluating and modifying the Transmission Shortage Cost, as necessary are addressed in Attachment O, Section 30.4.6.8.1 of this Market Services Tariff ("Market Monitoring Plan").

### 17.1.5 Zonal LBMP Calculation Method

The computation described in Section 17.1.1 of this Attachment B is at the bus level. An eleven (11) zone model will be used for the LBMP billing related to Loads, except for Energy withdrawals by Eligible Generators for later injection onto the grid. The LBMP for a zone will be a Load weighted average of the Load bus LBMPs in the Load Zone. The Load weights which will sum to unity will be calculated from the load bus MW distribution. Each component of the LBMP for a zone will be calculated as a Load weighted average of the Load bus LBMP components in the zone. The LBMP for a zone *j* can be written as:

$$\gamma_j^Z = \lambda^R + \gamma_j^{L,Z} + \gamma_j^{C,Z}$$

where:

| | |
|---|---|
| $\gamma_j^Z =$ | LBMP for zone j, |
| $\gamma_j^{L,Z} = \sum_{i=1}^{n} W_i \gamma_i^L$ | is the Marginal Losses Component of the LBMP for zone j; |
| $\gamma_j^{C,Z} = \sum W_i \gamma_i^L$ | is the Congestion Component of the LBMP for zone j; |

$n$ = number of Load buses in zone j for which LBMPs are calculated; and

$W_i =$ Load weighting factor for bus i.

The NYISO also calculates and posts zonal LBMP for four (4) external zones for informational purposes only. Settlements for External Transactions are determined using the Proxy Generator Bus LBMP. Each external zonal LBMP is equal to the LBMP of the Proxy Generator Bus associated with that external zone. The table below identifies which Proxy Generator Bus LBMP is used to determine each of the posted external zonal LBMPs.

| External Zone | External Zone PTID | Proxy Generator Bus | Proxy Generator Bus PTID |
|---|---|---|---|
| HQ | 61844 | HQ_GEN_WHEEL | 23651 |
| NPX | 61845 | N.E._GEN_SANDY_POND | 24062 |
| OH | 61846 | O.H._GEN_PROXY | 24063 |
| PJM | 61847 | PJM_GEN_KEYSTONE | 24065 |

Consistent with the ISO Services Tariff**,** LBMPs at Proxy Generator Buses are determined using calculated bus prices as described in this Section 17.1.

## 17.1.6 Real Time LBMP Calculation Methods for Proxy Generator Buses, Non-Competitive Proxy Generator Buses and Proxy Generator Buses Associated with Designated Scheduled Lines

### 17.1.6.1 Definitions

**Interface ATC Constraint:** An Interface ATC Constraint exists when proposed economic transactions over an Interface between the NYCA and the Control Area with which one or more Proxy Generator Bus(es) are associated would exceed the transfer capability for the Interface or for an associated Proxy Generator Bus.

**Interface Ramp Constraint:** An Interface Ramp Constraint exists when proposed interchange schedule changes pertaining to an Interface between the NYCA and the Control Area with which one or more Proxy Generator Bus(es) are associated would exceed any Ramp Capacity limit imposed by the ISO for the Interface or for an associated Proxy Generator Bus.

**NYCA Ramp Constraint:** A NYCA Ramp Constraint exists when proposed interchange schedule changes pertaining to the NYCA as a whole would exceed any Ramp Capacity limits in place for the NYCA as a whole.

**Proxy Generator Bus Constraint:** Any of an Interface ATC Constraint, an Interface Ramp Constraint, or a NYCA Ramp Constraint (individually and collectively).

**External Interface Congestion:** The product of: (i) the portion of the Congestion Component of the LBMP at a Proxy Generator Bus that is associated with a Proxy Generator Bus Constraint and (ii) a factor, between zero and 1, calculated pursuant to ISO Procedures.

**Proxy Generator Bus Border LBMP:** The LBMP at a Proxy Generator Bus minus External Interface Congestion at that Proxy Generator Bus.

**Unconstrained RTD LBMP:** The LBMP as calculated by RTD less any congestion associated with a Proxy Generator Bus Constraint.

#### 17.1.6.2 General Rules

Transmission Customers and Customers with External Generators and Loads can bid into the LBMP Market or participate in Bilateral Transactions. Those with External Generators may arrange LBMP Market sales and/or Bilateral Transactions with Internal or External Loads and External Loads may arrange LBMP Market purchases and/or Bilateral Transactions with Internal Generators.

The Generator and Load locations for which LBMPs will be calculated will initially be limited to a pre-defined set of Proxy Generator Buses. LBMPs will be calculated for each Proxy Generator Bus within this limited set. When an Interface with multiple Proxy Generator Buses is constrained, the ISO will apply the constraint to all of the Proxy Generator Buses located at that Interface. Except as set forth in Sections 17.1.6.3 and 17.1.6.4, the NYISO will calculate the three components of LBMP for Transactions at a Proxy Generator Bus as provided in the tables below.

When determining the External Interface Congestion, if any, to apply to determine the LBMP for RTD intervals that bridge two RTC intervals, the NYISO shall use the External Interface Congestion associated with the second (later) RTC interval.

#### 17.1.6.2.1 Pricing rules for Dynamically Scheduled Proxy Generator Buses

The pricing rules for Dynamically Scheduled Proxy Generator Buses are to be determined.

#### 17.1.6.2.2 Pricing rules for Variably Scheduled Proxy Generator Buses

The pricing rules for Variably Scheduled Proxy Generator Buses are provided in the following table.

| **Rule No.** | **Proxy Generator Bus Constraint affecting External Schedules at location *a*** | **Direction of Proxy Generator Bus Constraint** | **Real-Time Pricing Rule (for location *a*)** |
|---|---|---|---|
| 1 | Unconstrained in $RTC_{15}$, Rolling RTC and RTD | N/A | Real-Time $LBMP_a$ = RTD $LBMP_a$ |
| 2 | The Rolling RTC used to schedule External Transactions in a given 15-minute interval is subject to a Proxy Generator Bus Constraint | Into NYCA or out of NYCA (Import or Export) | Real-Time $LBMP_a$ = RTD $LBMP_a$ + Rolling RTC External Interface $Congestion_a$ |

#### 17.1.6.2.3 Pricing rules for Proxy Generator Buses that are not Dynamically Scheduled or Variably Scheduled

The pricing rules for Proxy Generator Buses that are not Dynamically Scheduled or Variably Scheduled Proxy Generator Buses are provided in the following table.

| **Rule No.** | **Proxy Generator Bus Constraint affecting External Schedules at location *a*** | **Direction of Proxy Generator Bus Constraint** | **Real-Time Pricing Rule (for location *a*)** |
|---|---|---|---|
| 1 | Unconstrained in $RTC_{15}$, Rolling RTC and RTD | N/A | Real-Time $LBMP_a$ = RTD $LBMP_a$ |
| 3 | $RTC_{15}$ is subject to a Proxy Generator Bus Constraint | Into NYCA or out of NYCA (Import or Export) | Real-Time $LBMP_a$ = RTD $LBMP_a$ + $RTC_{15}$ External Interface $Congestion_a$ |

#### 17.1.6.3 Rules for Non-Competitive Proxy Generator Buses and Associated Interfaces

Real-Time LBMPs for an Interface that is associated with one or more Non-Competitive Proxy Generator Buses or for a Non-Competitive Proxy Generator Bus shall be determined as provided in the tables below. Non-Competitive Proxy Generator Buses are identified in Section 4.4.4 of the Services Tariff.

##### 17.1.6.3.1 Pricing rules for Non-Competitive, Dynamically Scheduled Proxy Generator Buses

The pricing rules for Non-Competitive, Dynamically Scheduled Proxy Generator Buses are to be determined.

##### 17.1.6.3.2 Pricing rules for Non-Competitive, Variably Scheduled Proxy Generator Buses

The pricing rules for Non-Competitive, Variably Scheduled Proxy Generator Buses are provided in the following table.

| Rule No. | Proxy Generator Bus Constraint affecting External Schedules at location *a* | Direction of Proxy Generator Bus Constraint | Real-Time Pricing Rule (for location *a*) |
|---|---|---|---|
| 1 | Unconstrained in $RTC_{15}$, Rolling RTC and RTD | N/A | Real-Time $LBMP_a$ = RTD $LBMP_a$ |
| 4 | The Rolling RTC used to schedule External Transactions in a given 15-minute interval is subject to an Interface ATC or Interface RampConstraint | Into NYCA (Import) | If Rolling RTC Proxy Generator Bus $LBMP_a > 0$, then Real-Time $LBMP_a$ = RTD $LBMP_a$ + Rolling RTC External Interface $Congestion_a$<br><br>Otherwise, Real-Time $LBMP_a$ = Minimum of (i) RTD $LBMP_a$ and (ii) zero |
| 5 | The Rolling RTC used to schedule External Transactions in a given 15-minute interval is subject to an Interface ATC or Interface Ramp Constraint | Out of NYCA (Export) | If Rolling RTC Proxy Generator Bus $LBMP_a < 0$, then Real-Time $LBMP_a$ = RTD $LBMP_a$ + Rolling RTC External Interface $Congestion_a$<br><br>Otherwise, Real-Time $LBMP_a$ = RTD $LBMP_a$ |

#### 17.1.6.3.3 Pricing rules for Non-Competitive Proxy Generator Buses that are not Dynamically Scheduled or Variably Scheduled Proxy Generator Buses

The pricing rules for Non-Competitive Proxy Generator Buses that are not Dynamically Scheduled or Variably Scheduled Proxy Generator Buses are provided in the following table.

| Rule No. | Proxy Generator Bus Constraint affecting External Schedules at location *a* | Direction of Proxy Generator Bus Constraint | Real-Time Pricing Rule (for location *a*) |
|---|---|---|---|
| 1 | Unconstrained in $RTC_{15}$, Rolling RTC and RTD | N/A | Real-Time $LBMP_a$ = RTD $LBMP_a$ |
| 6 | $RTC_{15}$ is subject to an Interface ATC or Interface Ramp Constraint | Into NYCA (Import) | If $RTC_{15}$ Proxy Generator Bus $LBMP_a > 0$, then Real-Time $LBMP_a$ = RTD $LBMP_a$ + $RTC_{15}$ External Interface $Congestion_a$<br><br>Otherwise, Real-Time $LBMP_a$ = Minimum of (i) RTD $LBMP_a$ and (ii) zero |
| 7 | $RTC_{15}$ is subject to an Interface ATC or Interface Ramp Constraint | Out of NYCA (Export) | If $RTC_{15}$ Proxy Generator Bus $LBMP_a < 0$, then Real-Time $LBMP_a$ = RTD $LBMP_a$ + $RTC_{15}$ External Interface $Congestion_a$<br><br>Otherwise, Real-Time $LBMP_a$ = RTD $LBMP_a$ |

#### 17.1.6.4 Special Pricing Rules for Proxy Generator Buses Associated with Designated Scheduled Lines

Real-Time LBMPs for the Proxy Generator Buses associated with designated Scheduled Lines shall be determined as provided in the tables below.  The Proxy Generator Buses that are associated with designated Scheduled Lines are identified in Section 4.4.4 of the Services Tariff.

##### 17.1.6.4.1 Pricing rules for Dynamically Scheduled Proxy Generator Buses that are associated with Designated Scheduled Lines

The pricing rules for Dynamically Scheduled Proxy Generator Buses that are associated with designated Scheduled Lines are to be determined.

##### 17.1.6.4.2 Pricing rules for Variably Scheduled Proxy Generator Buses that are associated with Designated Scheduled Lines

The pricing rules for Variably Scheduled Proxy Generator Buses that are associated with designated Scheduled Lines are provided in the following table.

| Rule No. | Proxy Generator Bus Constraint affecting External Schedules at location *a* | Direction of Proxy Generator Bus Constraint | Real-Time Pricing Rule (for location *a*) |
|---|---|---|---|
| 1 | Unconstrained in $RTC_{15}$, Rolling RTC and RTD | N/A | Real-Time $LBMP_a$ = RTD $LBMP_a$ |
| 4 | The Rolling RTC used to schedule External Transactions in a given 15-minute interval is subject to an Interface ATC Constraint | Into NYCA (Import) | If Rolling RTC Proxy Generator Bus $LBMP_a$ > 0, then Real-Time $LBMP_a$ = RTD $LBMP_a$ + Rolling RTC External Interface $Congestion_a$<br><br>Otherwise, Real-Time $LBMP_a$ = Minimum of (i) RTD $LBMP_a$ and (ii) zero |
| 5 | The Rolling RTC used to schedule External Transactions in a given 15-minute interval is subject to an Interface ATC Constraint | Out of NYCA (Export) | If Rolling RTC Proxy Generator Bus $LBMP_a$ < 0, then Real-Time $LBMP_a$ = RTD $LBMP_a$ + Rolling RTC External Interface $Congestion_a$<br><br>Otherwise, Real-Time $LBMP_a$ = RTD $LBMP_a$ ) |

### 17.1.6.4.3 Pricing rules for Proxy Generator Buses that are associated with Designated Scheduled Lines that are not Dynamically Scheduled or Variably Scheduled Proxy Generator Buses

The pricing rules for Proxy Generator Buses that are associated with designated Scheduled Lines that are not Dynamically Scheduled or Variably Scheduled Proxy Generator Buses, are provided in the following table.

| Rule No. | Proxy Generator Bus Constraint affecting External Schedules at location *a* | Direction of Proxy Generator Bus Constraint | Real-Time Pricing Rule (for location *a*) |
|---|---|---|---|
| 1 | Unconstrained in $RTC_{15}$, Rolling RTC and RTD | N/A | Real-Time $LBMP_a$ = RTD $LBMP_a$ |
| 6 | $RTC_{15}$ is subject to an Interface ATC Constraint | Into NYCA (Import) | If $RTC_{15}$ Proxy Generator Bus $LBMP_a$ > 0, then Real-Time $LBMP_a$ = RTD $LBMP_a$ + $RTC_{15}$ External Interface $Congestion_a$<br><br>Otherwise, Real-Time $LBMP_a$ = Minimum of (i) RTD $LBMP_a$ and (ii) zero |

| Rule No. | Proxy Generator Bus Constraint affecting External Schedules at location *a* | Direction of Proxy Generator Bus Constraint | Real-Time Pricing Rule (for location *a*) |
|---|---|---|---|
| 7 | $RTC_{15}$ is subject to an Interface ATC Constraint | Out of NYCA (Export) | If $RTC_{15}$ Proxy Generator Bus $LBMP_a < 0$, then Real-Time $LBMP_a$ = RTD $LBMP_a$ + $RTC_{15}$ External Interface $Congestion_a$<br><br>Otherwise, Real-Time $LBMP_a$ = RTD $LBMP_a$ |

### 17.1.6.5 Method of Calculating Marginal Loss and Congestion Components of Real-Time LBMP at Non-Competitive Proxy Generator Buses and Proxy Generator Buses that are Subject to the Special Pricing Rule for Designated Scheduled Lines

Under the conditions specified below, the Marginal Losses Component and the Congestion Component of the Real-Time LBMP, calculated pursuant to the preceding paragraphs in Sections 17.1.6.3 and 17.1.6.4, shall be constructed as follows:

When the Real-Time LBMP is set to zero and that zero price was not the result of using the RTD, RTC or SCUC-determined LBMP;

$$Marginal\ Losses\ Component\ of\ the\ Real\text{-}Time\ LBMP = Losses_{RTD\ PROXY\ GENERATOR\ BUS}$$

and

$$Congestion\ Component\ of\ the\ Real\text{-}Time\ LBMP = -(Energy_{RTD\ REF\ BUS} + Losses_{RTD\ PROXY\ GENERATOR\ BUS})$$

where:

$Energy_{RTD\ REF\ BUS}$ = The marginal Bid cost of providing Energy at the reference Bus, as calculated by RTD for that 5-minute interval; and

$Losses_{RTD\ PROXY\ GENERATOR\ BUS}$ = The Marginal Losses Component of the LBMP as calculated by RTD for that 5-minute interval at the Non-Competitive Proxy Generator Bus or Proxy Generator Bus associated with a designated Scheduled Line.

## 17.2 Accounting For Transmission Losses

### 17.2.1 Charges

Subject to Attachment K to the ISO OATT, the ISO shall charge all Transmission Customers for transmission system losses based on the marginal cost of losses on either a bus (including a Transmission Node) or zonal basis, described below.

#### 17.2.1.1 Loss Model

The ISO's RTD software will use a power flow model and penalty factors to estimate losses incurred in performing generation dispatch (including dispatch of DER Aggregations) and billing functions for losses.

#### 17.2.1.2 Residual Loss Payment

The ISO will determine the difference between the payments by Transmission Customers for losses and the payments to Suppliers for losses associated with all Transactions (LBMP Market or Transmission Service under Parts 3, 4 and 5 of the ISO OATT) for both the Day-Ahead and Real-Time Markets. The accounting for losses at the margin may result in the collection of more revenue than is required to compensate Generators and Aggregations for the Energy they produced to supply the actual losses in the system. This over collection is termed residual loss payments. The ISO shall calculate residual loss payments revenue on an hourly basis and will credit them against the ISO's Residual Adjustment (See Rate Schedule 1 of the ISO OATT).

### 17.2.2 Computation of Residual Loss Payments

#### 17.2.2.1 Marginal Losses Component LBMP

The ISO shall utilize the Marginal Losses Component of the LBMP on an Internal bus, an External bus, or a zone basis for computing the marginal contribution of each Transaction to the system losses. The computation of these quantities is described in this Attachment.

#### 17.2.2.1.1 Marginal Losses Component Day-Ahead

The ISO shall utilize the Marginal Losses Component computed by SCUC for computing the marginal contributions of each Transaction in the Day-Ahead Market.

#### 17.2.2.1.2 Marginal Losses Component Real -Time

The ISO shall utilize the Marginal Losses Component calculated by the (i) RTD programs in most cases; or, (ii) during intervals when the conditions specified in Part 17.1 of this Attachment B exist at Proxy Generator Buses, the RTC program, for computing the Marginal Losses Component associated with each Transaction scheduled in the Real-Time Market (or deviations from Transactions scheduled in the Day-Ahead Market). The computations will be performed on an RTD-interval basis and aggregated to an hourly total.

#### 17.2.2.2 Payments and Charges

Payments and charges to reflect the impact of Energy supplied (or withdrawn by Withdrawal-Eligible Generators) by each Generator and Aggregation, consumed by each Load, or transmitted by each Transmission Customer on the Marginal Losses Component shall be determined as follows. Each of these payments or charges may be negative.

#### 17.2.2.3 Day-Ahead Payments and Charges

As part of the LBMP paid to all Suppliers scheduled Day-Ahead to provide Energy to the LBMP Market, the ISO shall pay each such Supplier the product of: (a) the injection scheduled

Day-Ahead from each of that Supplier's Generators or Aggregations in each hour, in MWh; and (b) the Marginal Losses Component of the Day-Ahead LBMP at each of those Generators' buses or Aggregation's Transmission Nodes, in $/MWh.

As part of the LBMP charged to all LSEs scheduled Day-Ahead to purchase Energy from the LBMP Market, the ISO shall charge each such LSE the product of: (a) the withdrawal scheduled Day-Ahead in each Load Zone by that LSE in each hour, in MWh; and (b) the Marginal Losses Component of the Day-Ahead LBMP in that Load Zone, in $/MWh.

As part of the TUC charged to all Transmission Customers whose Transmission Service has been scheduled Day-Ahead, the ISO shall charge each such Transmission Customer the product of: (a) the amount of Energy scheduled Day-Ahead to be injected and withdrawn by that Transmission Customer in each hour, in MWh; and (b) the Marginal Losses Component of the Day-Ahead LBMP at the Point of Delivery (*i.e.*, Load Zone in which Energy is scheduled to be withdrawn or the bus where Energy is scheduled to be withdrawn if the Energy is scheduled to be withdrawn at a location outside the NYCA), minus the Marginal Losses Component of the Day-Ahead LBMP at the Point of Receipt, in $/MWh.

#### 17.2.2.4 Real-Time Payments and Charges

As part of the LBMP paid to all Suppliers providing Energy to the Real-Time LBMP Market, the ISO shall pay each such Supplier the product of: (a) the amount of Energy actually injected by each of that Supplier's Generators or Aggregations in each hour (to the extent that actual injections do not exceed the AGC or RTD Base Points Signals sent to that Supplier for those Generators plus any Compensable Overgeneration payable pursuant to ISO Procedures), minus the amount of Energy each of those Generators or Aggregations was scheduled Day-Ahead to inject in that hour, in MWh; and (b) the loss component of the Real-Time LBMP at each of those Generator's buses or Aggregation's Transmission Nodes, in $/MWh.

As part of the LBMP charged to all LSEs that purchase Energy from the LBMP Market, the ISO shall charge each such LSE the product of (a) the Actual Energy Withdrawals by that LSE in each Load Zone in each hour, minus the Energy withdrawal scheduled Day-Ahead in that Load Zone by that LSE for that hour, in MWh; and (b) the Marginal Losses Component of the Real-Time LBMP in that Load Zone, in $MWh.

As part of the TUC charged to all Transmission Customers whose Transmission Service was scheduled after the determination of the Day-Ahead schedule, or who schedule additional Transmission Service after the determination of the Day-Ahead schedule, the ISO shall charge each such Transmission Customer the product of: (a) Actual Energy Withdrawals scheduled RTD in each hour, minus the amount of Energy scheduled Day-Ahead to be withdrawn by that Transmission Customer in that hour, in MWh; and (b) the Marginal Losses Component of the Real-Time LBMP at the Point of Delivery (i.e., the Load Zone in which Energy is scheduled to be withdrawn or the External bus where Energy is scheduled to be withdrawn if Energy is scheduled to be withdrawn at a location outside the NYCA), minus the Marginal Losses Component of the Real-Time LBMP at the Point of Receipt, in $MWh.

As part of the LBMP paid to all Suppliers providing an amount of Energy that differs from the amount of Energy those Suppliers were scheduled by RTD to provide in an hour in association with Bilateral Transactions, the ISO shall pay each such Supplier the product of: (a) the amount of Energy actually injected by each of that Supplier's Generators and/or Aggregation in each hour (to the extent that actual injections do not exceed the AGC or RTD Base Points Signals sent to that Supplier for those Generators or Aggregations plus any Compensable Overgeneration payable pursuant to ISO Procedures) minus the amount of Energy each of those Generators or Aggregations was scheduled by RTD to provide in that hour in association with

Bilateral Transactions, in MWh; and (b) the Marginal Losses Component of the Real-Time LBMP at each of those Generators' buses, or Aggregation's Transmission Node in $/MWh.

As part of the LBMP charged to all LSEs consuming an amount of Energy that deviates from the amount of Energy those LSEs were scheduled by RTD to consume in an hour in association with Bilateral Transactions, the ISO shall charge each such LSE the product of: (a) the Actual Energy Withdrawals by that LSE in each Load Zone in each hour, minus the Energy withdrawal scheduled by RTD in that Load Zone by that LSE for that hour in association with Bilateral Transactions, in MWh; and (b) the Marginal Losses Component of the Real-Time LBMP in that Load Zone, in $/MWh.

# 18 Attachment C -Formulas For Determining Bid Production Cost Guarantee Payments

## 18.1 Introduction

Ten Bid Production Cost Guarantee (BPCG) payments for eligible Suppliers are described in this attachment: (i) a Day-Ahead BPCG for Generators; (ii) a Day-Ahead BPCG for Imports; (iii) a real-time BPCG for Generators and Aggregations in RTD intervals other than Supplemental Event Intervals ; (iv) a BPCG for Generators and Aggregations for Supplemental Event Intervals; (v) a real-time BPCG for Imports; (vi) a BPCG for long start-up time Generators (i.e., Generators that cannot be scheduled by SCUC to start up in time for the next Dispatch Day) whose start is aborted by the ISO prior to their dispatch; (vii) a BPCG for Demand Reduction in the Day-Ahead Market; (viii) a Special Case Resources BPCG; (ix) a BPCG for Demand Side Resources providing synchronized Operating Reserves and / or Regulation Service in the Day-Ahead Market; and (x) a BPCG for Demand Side Resources providing synchronized Operating Reserves and / or Regulation Service in the Real-Time Market. Suppliers shall be eligible for these payments in accordance with the eligibility requirements and formulas established in this Attachment C.

The Bid Production Cost guarantee payments described in this Attachment C are each calculated and paid independently from each other. A Customer’s eligibility to receive one type of Bid Production Cost guarantee payment shall have no impact on the Customer’s eligibility to be considered to receive another type of Bid Production Cost guarantee payment, in accordance with the rule set forth in this Attachment C.

## 18.2 Day-Ahead BPCG For Generators and Aggregations

### 18.2.1 Eligibility to Receive a Day-Ahead BPCG for Generators and Aggregations

#### 18.2.1.1 Eligibility.

A Supplier that bids on behalf of an ISO-Committed Fixed Generator or an ISO Committed Flexible Generator or an ISO-Committed Flexible Aggregation that is committed by the ISO in the Day-Ahead Market shall be eligible to receive a Day-Ahead Bid Production Cost guarantee payment. Energy Storage Resources and Aggregations comprised entirely of Energy Storage Resources that satisfy this eligibility criteria shall be eligible to receive a Day-Ahead Bid Production Cost guarantee payment regardless of whether the Resource Self-Manages its Energy Level.

#### 18.2.1.2 Non-Eligibility (includes both partial and complete exclusions).

Notwithstanding Section 18.2.1.1, a Supplier that bids on behalf of an ISO-Committed Fixed Generator or an ISO-Committed Flexible Generator, or an ISO-Committed Flexible Aggregation that is committed by the ISO in the Day-Ahead Market shall not be eligible to receive a Day-Ahead Bid Production Cost guarantee payment if that Generator or Aggregation has been committed in the Day-Ahead Market for any other hour of the day as a result of a Self-Committed Fixed or Self-Committed Flexible bid.

Notwithstanding Section 18.2.1.1, Incremental Energy Bid costs and Minimum Generation Bids that exceed $1,000/MWh are only eligible for inclusion in a Day-Ahead Bid Production Cost guarantee payment in accordance with Sections 21.4.1 and 23.7 of this ISO Services Tariff.

### 18.2.2 Formulas for Determining Day-Ahead BPCG for Generators and Aggregations

#### 18.2.2.1 Applicable Formula. A Supplier's BPCG for Generator or Aggregation g, shall be as follows:

Day-Ahead Bid Production Cost Guarantee for Generator g or Aggregation g =

$$Max\left[\sum_{h=1}^{N}\left(\int_{MGH_{gh}^{DA}}^{EH_{gh}^{DA}} C_{gh}^{DA} + MGC_{gh}^{DA}MGH_{gh}^{DA} + SUC_{gh}^{DA}NSUH_{gh}^{DA} - LBMP_{gh}^{DA}EH_{gh}^{DA} - NASR_{gh}^{DA}\right), 0\right]$$

#### 18.2.2.2 Variable Definitions. The terms used in this Section 18.2.2 shall be defined as follows:

$Supplier_g$ = Generator *g* or Aggregation *g*;

$N$ = number of hours in the Day-Ahead Market day;

$EH_{gh}^{DA}$ = Energy scheduled Day-Ahead to be provided by Supplier *g* or withdrawn by Supplier g, which is eligible to withdraw Energy,in hour *h* expressed in terms of MWh;

$MGH_{gh}^{DA}$ = Energy scheduled Day-Ahead to be produced by the minimum generation segment of Supplier *g* in hour *h* expressed in terms of MWh;

$C_{gh}^{DA}$ = Bid cost submitted by Supplier g, or when applicable the mitigated Bid cost curve for Supplier *g*, in the Day-Ahead Market for hour *h* expressed in terms of $/MWh;

$MGC_{gh}^{DA}$ = Minimum Generation Bid by Supplier g, or when applicable the mitigated Minimum Generation Bid for Supplier *g*, for hour *h* in the Day-Ahead Market, expressed in terms of $/MWh.

If Supplier g was committed in the Day-Ahead Market, or in the Real-Time Market via Supplemental Resource Evaluation ("SRE"), on the day prior to the Dispatch Day and Supplier g has not yet completed the minimum run time reflected in the accepted Bid for the hour in which it was scheduled to start on the day before the Dispatch Day (as mitigated, where appropriate), then Supplier g shall have its minimum generation cost set equal to the revenues received for energy produced at its minimum operating level for purposes of calculating a Day-Ahead Bid Production Cost guarantee until Supplier g completes the minimum run time reflected in the accepted Bid for the hour in which it was scheduled to start on the day before the Dispatch Day;

$SUC_{gh}^{DA}$ = Start-Up Bid by Supplier *g* in hour *h*, or when applicable the mitigated Start-Up Bid for Supplier *g*, in hour *h* in the Day-Ahead Market expressed in terms of $/start; *provided, however*, that the Start-Up Bid for Supplier *g* in hour *h* or, when applicable, the mitigated Start-Up Bid, for Supplier *g* in hour *h*, may be subject to *pro rata* reduction in accordance with the rules set forth in Section 18.12 of this Attachment C. Bases for *pro rata* reduction include, but are not limited to, failure to be scheduled, and to operate in real-time to produce, in each hour, the MWh specified in the accepted Minimum Generation Bid that was submitted for the first hour of Generator g's Day-Ahead or SRE schedule, and failure to operate for the minimum run time specified in the Bid submitted for the first hour of Supplier *g*'s Day-Ahead or SRE schedule.

If Supplier *g* was committed in the Day-Ahead Market, or in the Real-Time Market via SRE, on the day prior to the Dispatch Day, *and* Supplier g has not yet completed the minimum run time reflected in the accepted Bid for the hour in which it was scheduled to start on the day before the Dispatch Day (as mitigated, where appropriate) plus the contiguous hour that follows the conclusion of such minimum run time, *then* Supplier *g* shall have its Start-Up Bid set to zero for purposes of calculating a Day-Ahead Bid Production Cost guarantee.

For a long start-up time Supplier (*i.e.*, a Supplier that cannot be scheduled by SCUC to start up in time for the next Dispatch Day) that is committed by the ISO and runs in real-time, the Start-Up Bid for Supplier g in hour h shall be the Supplier's Start-Up Bid, or when applicable the mitigated Start-Up Bid for Supplier g, for the hour (as determined at the point in time in which the ISO provided notice of the request for start-up):

$NSUH_{gh}^{DA}$ = number of times Supplier g is scheduled Day-Ahead to start up in hour h;

$LBMP_{gh}^{DA}$ = Day-Ahead LBMP at Supplier g's bus in hour h expressed in $/MWh;

$NASR_{gh}^{DA}$ = Net Ancillary Services revenue, expressed in terms of $, paid to Supplier g as a result of having been committed to produce Energy for the LBMP Market and/or Ancillary Services Day-Ahead in hour h which is computed by summing the following: (1) Voltage Support Service payments received by that Supplier for that hour, if it is not a Supplier of Installed Capacity and has been scheduled to operate in that hour; (2) Regulation Service payments made to that Supplier for all Regulation Service it is scheduled Day-Ahead to provide in that hour, less that Supplier's Day-Ahead Regulation Capacity Bid to provide that amount of Regulation Service in that hour; and (3) payments made to that Supplier for providing Spinning Reserve and synchronized 30-Minute Reserve in that hour if it is committed Day-Ahead to provide such reserves in that hour, less that Supplier's

Day-Ahead Bid to provide Spinning Reserve and synchronized 30-Minute Reserve in that hour.

## 18.3 Day-Ahead BPCG For Imports

### 18.3.1 Eligibility to Receive a Day-Ahead BPCG for Imports

A Supplier that bids an Import that is committed by the ISO in the Day-Ahead Market shall be eligible to receive a Day-Ahead Bid Production Cost guarantee payment.

### 18.3.2 BPCG Calculated by Transaction ID

For purposes of calculating a Day-Ahead Bid Production Cost guarantee payment for an Import under this Section 18.3, the ISO shall treat the Import as being from a single Resource for all hours of the Day-Ahead Market day in which the same Transaction ID is used, and the ISO shall treat the Import as being from a different Resource for all hours of the Day-Ahead Market day in which a different Transaction ID is used.

### 18.3.3 Formula for Determining Day-Ahead BPCG for Imports

Day-Ahead Bid Production Cost guarantee for Import t by Supplier =

$$max\left[\sum_{h=1}^{N}(DecBid_{th}^{DA} - LBMP_{th}^{DA}) * SchImport_{th}^{DA}, 0\right]$$

Where;

| | | |
|---|---|---|
| $N$ | = | number of hours in the Day-Ahead Market day; |
| $DecBid_{th}^{DA}$ | = | Decremental Bid, in $/MWh, supplied for Import t for hour h; |
| $LBMP_{th}^{DA}$ | = | Day-Ahead LBMP, in $/MWh, for hour h at the Proxy Generator Bus that is the source of the Import t and |
| $SchImport_{th}^{DA}$ | = | total Day-Ahead schedule, in MWh, for Import t in hour h. |

## 18.4 Real-Time BPCG For Generators and Aggregations In RTD Intervals Other Than Supplemental Event Intervals

### 18.4.1 Eligibility for Receiving Real-Time BPCG for Generators and Aggregations in RTD Intervals Other Than Supplemental Event Intervals

#### 18.4.1.1 Eligibility.

A Supplier shall be eligible to receive a real-time Bid Production Cost guarantee payment for intervals (excluding Supplemental Event Intervals) if it bids on behalf of:

18.4.1.1.1 an ISO-Committed Flexible Generator or an ISO-Committed Fixed Generator that is committed by the ISO in the Real-Time Market; or

18.4.1.1.2 a Self-Committed Flexible Generator if the Generator's minimum operating level does not exceed its Day-Ahead schedule at any point during the Dispatch Day; or

18.4.1.1.3 a Generator or Aggregation committed via SRE, or committed or dispatched by the ISO as Out-of-Merit generation to ensure NYCA or local system reliability for the hours of the day that it is committed via SRE or is committed or dispatched by the ISO as Out-of-Merit generation to meet NYCA or local system reliability without regard to the Bid mode(s) employed during the Dispatch Day, except as provided in Sections 18.4.2 and 18.12, below.

18.4.1.1.4 an ISO-Committed Flexible Aggregation comprised entirely of Energy Storage Resources that Self-Manages its Energy Level.

#### 18.4.1.2 Non-Eligibility (includes both partial and complete exclusions).

18.4.1.2.1 Notwithstanding Section 18.4.1.1, a Supplier that bids on behalf of an ISO-Committed Fixed Generator or an ISO-Committed Fixed Aggregation or an ISO-Committed Flexible Generator that is committed by the ISO in the Real-

Time Market shall not be eligible to receive a real-time Bid Production Cost guarantee payment if that Generator or Aggregation has been committed in real-time, in any other hour of the day, as the result of a Self-Committed Fixed bid or a Self-Committed Flexible bid with a minimum operating level that exceeds its Day-Ahead schedule, *provided however*, a Generator or Aggregation that has been committed in real time as a result of a Self-Committed Fixed bid, or a Self-Committed Flexible bid with a minimum operating level that exceeds its Day-Ahead schedule will not be precluded from receiving a real-time Bid Production Cost guarantee payment for other hours of the Dispatch Day, in which it is otherwise eligible, due to these Self-Committed mode Bids if such Bid mode was used for: (i) an ISO authorized Start-Up, Shutdown or Testing Period, or (ii) for hours in which such Generator or Aggregation was committed via SRE, or committed or dispatched by the ISO as Out-of-Merit to meet NYCA or local system reliability as long as the Generator's Out-of-Merit Upper Operating Limit is equal to or greater than any Self-Committed minimum operating level.

18.4.1.2.2 Notwithstanding Section 18.4.1.1, Incremental Energy Bid costs and Minimum Generation Bids that exceed $1,000/MWh are only eligible for inclusion in a real-time Bid Production Cost guarantee payment for intervals other than Supplemental Event Intervals, in accordance with Sections 21.4.1 and 23.7 of this ISO Services Tariff.

18.4.1.2.3 Notwithstanding Section 18.4.1.1, an Energy Storage Resource or Aggregation comprised entirely of Energy Storage Resources with a ISO-Managed Energy Level for any hour of the Real-Time Market day shall not be eligible to receive a real-time Bid Production Cost guarantee payment for that day, provided however, an Energy Storage Resource or Aggregation comprised entirely of Energy Storage Resources shall be eligible for a real-time Bid Production Cost guarantee payment in accordance with Section 18.4.1.1.3 of this ISO Services Tariff regardless of whether the Energy Level is ISO-Managed.

18.4.1.2.4 Notwithstanding Section 18.4.1.1, Energy Storage Resources and Aggregations shall not be eligible to receive a real-time Bid Production Cost guarantee payment for a day if such Resources' Real-Time Market Bids for any hour of that day do not permit the Resource to receive a schedule of zero MW. However, such Resources shall be eligible for a real-time Bid Production Cost guarantee payment in accordance with Section 18.4.1.1.3 of this ISO Services Tariff.

## 18.4.2 Formula for Determining Real-Time BPCG for Generators and Aggregations in RTD Intervals Other Than Supplemental Event Intervals

Real-Time Bid Production Cost Guarantee for Supplier g, which is not an Energy Storage Resource or an Aggregation that contains Energy Storage Resource(s) =

$$Max\left[\left(\sum_{i\in M}\left(\left(\int_{max\left(EI_{gi}^{DA},MGI_{gi}^{RT}\right)}^{max\left(EI_{gi}^{RT},MGI_{gi}^{RT}\right)} C_{gi}^{RT} + MGC_{gi}^{RT} * \left(MGI_{gi}^{RT} - MGI_{gi}^{DA}\right) - LBMP_{gi}^{RT} * \left(EI_{gi}^{RT} - EI_{gi}^{DA}\right)\right) * \frac{S_i}{3600}\right) \\ - \left(NASR_{gi}^{TOT} - NASR_{gi}^{DA}\right) - RRAP_{gi} + RRAC_{gi} + \sum_{j\in L} SUC_{gj}^{RT} * \left(NSUI_{gj}^{RT} - NSUI_{gj}^{DA}\right)\right), 0\right]$$

Real-Time Bid Production Cost Guarantee for Supplier g, which is an Energy Storage Resource or an Aggregation that contains Energy Storage Resource(s) =

$$Max\left(0, \sum_{i\in M}\left(InjBPCG_{gi} + WthBPCG_{gi}\right)\right)$$

where, when an Energy Storage Resource or Aggregation that contains Energy Storage Resource(s) has a real-time schedule to inject Energy:

$$InjBPCG_{gi} = \left(\left(\int_{max\left(EI_{gi}^{DA},0\right)}^{EI_{gi}^{RT}} C_{gi}^{RT} - LBMP_{gi}^{RT} * \left(EI_{gi}^{RT} - max\,(EI_{gi}^{DA}, 0)\right)\right) * \frac{S_i}{3600}\right)$$

$$- \left(NASR_{gi}^{TOT} - NASR_{gi}^{DA}\right) - RRAP_{gi} + RRAC_{gi}$$

and, when an Energy Storage Resource or an Aggregation that contains Energy Storage Resource(s) has a real-time schedule to withdraw Energy =

$$WthBPCG_{gi} = \left(\left(\int_{min\left(EI_{gi}^{DA},0\right)}^{EI_{gi}^{RT}} C_{gi}^{RT} - LBMP_{gi}^{RT} * \left(EI_{gi}^{RT} - min(EI_{gi}^{DA}, 0)\right)\right) * \frac{S_i}{3600}\right)$$

$$- \left(NASR_{gi}^{TOT} - NASR_{gi}^{DA}\right) - RRAP_{gi} + RRAC_{gi}$$

where:

| | | |
|---|---|---|
| $Supplier_g$ | = | Generator *g* or Aggregation *g*; |
| $S_i$ | = | number of seconds in RTD interval i; |
| $C_{gi}^{RT}$ | = | Bid cost submitted by Supplier g, or when applicable the mitigated Bid cost for Supplier g, in the RTD for the hour that includes RTD interval i expressed in terms of $/MWh, except in intervals in which the dispatch of the Supplier is constrained by its downward ramp rate for that interval, unless that Supplier was scheduled to provide Regulation Service in that interval and its RTD basepoint was less than its AGC basepoint, and except in hours in which the NYISO has increased Supplier g's minimum operating level, either (i) at the Supplier's request including through an adjustment to the Resource's self-commitment schedule, or (ii) in order to reconcile the ISO's dispatch with the Supplier's actual output or to address |

reliability concerns that arise because the Supplier is not following Base Point Signals, in which case $C_{gi}^{RT}$ shall be deemed to be zero;

$MGI_{gi}^{RT}$ = metered Energy provided by minimum generation segment of Supplier g in RTD interval i expressed in terms of MW;

$MGI_{gi}^{DA}$ = Energy scheduled Day-Ahead to be produced by minimum generation segment of Supplier g in RTD interval i expressed in terms of MW;

$MGC_{gi}^{RT}$ = Minimum Generation Bid by Supplier g, or when applicable the mitigated Minimum Generation Bid for Supplier g, in the Real-Time Market for the hour that includes RTD interval i, expressed in terms of $/MWh, which Bid or mitigated Bid may include costs pursuant to Section 4.1.8;

If Supplier g was committed in the Day-Ahead Market, or in the Real-Time Market via Supplemental Resource Evaluation ("SRE"), on the day prior to the Dispatch Day *and* Supplier g has not yet completed the minimum run time reflected in the accepted Bid for the hour in which it was scheduled to start on the day before the Dispatch Day (as mitigated, where appropriate), *then* Supplier g shall have its minimum generation cost set equal to the revenues received for energy produced at its minimum operating level for purposes of calculating a Real-Time Bid Production Cost guarantee until Supplier g completes the minimum run time reflected in the accepted Bid for the hour in which it was scheduled to start on the day before the Dispatch Day;

$SUC_{gj}^{RT}$ = Start-Up Bid by Supplier g, or when applicable the mitigated Start-Up Bid for Supplier g, for hour j into RTD expressed in terms of $/start, which Bid or mitigated Bid may include costs pursuant to Section 4.1.8;

provided, however,

(i) the Start-Up Bid shall be deemed to be zero for (1) Self-Committed Fixed and Self-Committed Flexible Suppliers, (2) Suppliers that are economically committed by RTC or RTD that have 10-minute start-up times that are not synchronized and producing Energy within 20 minutes after their scheduled start time, and (3) Suppliers that are economically committed by RTC that have greater than 10-minute start-up times that are not synchronized and producing Energy within 45 minutes after their scheduled start time;

(ii) if a Supplier has been committed via SRE and its SRE schedule immediately precedes or follows a real-time commitment that did not result from a Day-Ahead commitment, the Supplier's Start-Up Bid included in its daily real-time Bid Production Cost guarantee calculation for this contiguous real-time commitment period shall be the Start-Up Bid submitted in response to the SRE request (subject to mitigation, where appropriate);

(iii) if a Supplier has been committed via SRE and its SRE schedule immediately precedes or follows a real-time schedule that resulted from a Day-Ahead commitment, then the Supplier's Start-Up Bid included in its daily real-time Bid Production Cost guarantee calculation for this contiguous real-time commitment period shall be set to zero;

(iv) the real-time Start-Up Bid for Supplier g for hour j or, when applicable, the mitigated real-time Start-Up Bid, for Supplier g for hour j, may be subject to *pro rata* reduction in accordance with the rules set forth in Section 18.12 of this Attachment C. Bases for *pro rata* reduction include, but are not limited to, failure to be scheduled and operate in real-time to produce, in each hour, the MWh specified in the accepted Minimum Generation Bid that was submitted for the first hour of Supplier g's Day-Ahead or SRE schedule, and failure to operate for the minimum run time specified in the Bid submitted for the first hour of Supplier g's Day-Ahead or SRE schedule; and

(v) if Supplier g was committed in the Day-Ahead Market, or in the Real-Time Market via SRE, on the day prior to the Dispatch Day, *and* Supplier g has not yet completed the minimum run time reflected in the accepted Bid for the hour in which it was scheduled to start on the day before the Dispatch Day (as mitigated, where appropriate) plus the contiguous hour that follows the conclusion of such minimum run time, *then* Supplier g shall have its Start-Up Bid set to zero for purposes of calculating a Real-Time Bid Production Cost guarantee.

$NSUI_{gj}^{RT}$ = number of times Supplier g started up in hour j;

$NSUI_{gj}^{DA}$ = number of times Supplier g is scheduled Day-Ahead to start up in hour j;

$LBMP_{gi}^{RT}$ = Real-Time LBMP at Supplier g's bus in RTD interval i expressed in terms of $/MWh;

$M$ = the set of eligible RTD intervals in the Dispatch Day consisting of all of the RTD intervals in the Dispatch Day except:

(i) Supplemental Event Intervals (which are addressed separately in Section 18.5 below);

(ii) intervals during authorized Start-Up Periods, Shutdown Periods, or Testing Periods for Supplier g;

$L$ = the set of all hours in the Dispatch Day

$EI_{gi}^{RT}$ = either, as the case may be:

(i) if $EOP_{ig} > AE_{ig} + ADR_{ig}$ then $\min(\max((AE_{ig}+ADR_{ig}), RTSen_{ig}), EOP_{ig})$; or

(ii) if otherwise, then $\max(\min((AE_{ig} + ADR_{ig}), RTSen_{ig}), EOP_{ig})$.

$EI_{gi}^{DA}$ = Energy scheduled in the Day-Ahead Market to be provided or withdrawn by Supplier g in the hour that includes RTD interval i expressed in terms of MW;

$RTSen_{ig}$ = Real-time Energy scheduled for Supplier g in interval i, and calculated as the arithmetic average of the 6-second AGC Base Point Signals sent to Supplier g during the course of interval i expressed in terms of MW;

$AE_{ig}$ = either, (1) average Actual Energy Injection by Supplier g in interval i but not more than $RTSen_{ig}$ plus any Compensable Overgeneration expressed in terms of MW; or (2) average Actual Energy Withdrawal by Generator g in interval i expressed in terms of MW;

$ADR_{ig}$ = average Actual Demand Reduction by Supplier g in interval *i*;

$EOP_{ig}$ = the Economic Operating Point of Supplier g in interval i expressed in terms of MW;

$NASR_{gi}^{TOT}$ = Net Ancillary Services revenue, expressed in terms of $, paid to Supplier g as a result of either having been committed Day-Ahead to operate in the hour that includes RTD interval i or having operated in interval i which is computed by summing the following: (1) Voltage Support Service payments received by that Supplier for that RTD interval, if it is not a Supplier of Installed Capacity; (2) Regulation Service payments that would be made to that Supplier for that hour based on a Performance Index of 1, less the Regulation Capacity and Regulation Movement Bids placed by that Supplier to provide Regulation Service in that hour at the time it was committed to produce Energy for the LBMP Market and/or Ancillary Services to do so; (3) payments made to that Supplier for providing Spinning Reserve or synchronized 30-Minute Reserve in that hour, less the Bid placed by that Supplier to provide such reserves in that hour at the time it was scheduled to do so; and (4) Lost Opportunity Cost payments made to that Supplier in that hour as a result of reducing that Generator's output in order for it to provide Voltage Support Service.

$NASR_{gi}^{DA}$ = The proportion of the Day-Ahead net Ancillary Services revenue, expressed in terms of $, that is applicable to interval i calculated by multiplying the $NASR_{gh}^{DA}$ for the hour that includes interval i by $S_i$/3600.

$RRAP_{gi}$ = Regulation Revenue Adjustment Payment for Supplier g in RTD interval i expressed in terms of $.

$RRAC_{gi}$ = Regulation Revenue Adjustment Charge for Supplier g in RTD interval i expressed in terms of $.

### 18.4.3 Bids Used For Intervals at the End of the Hour

For RTD intervals in an hour that start 55 minutes or later after the start of that hour, a Bid used to determine real-time BPCG in Section 18.4.2 will be the Bid for the next hour in accordance with ISO Procedures. For RTD-CAM intervals in an hour that start 50 minutes or later after the start of that hour, a Bid used to determine real-time BPCG in Section 18.4.2 will be the Bid for the next hour, in accordance with ISO Procedures.

## 18.5 BPCG For Generators and Aggregations In Supplemental Event Intervals

### 18.5.1 Eligibility for BPCG for Generators Aggregations in Supplemental Event Intervals

#### 18.5.1.1 Eligibility

For intervals in which the ISO has called a large event reserve pick-up, as described in Section 4.4.4.1.1 of this ISO Services Tariff, or an emergency under Section 4.4.4.1.2 of this ISO Services Tariff, any Supplier who meets the eligibility requirements for a real-time Bid Production Cost guarantee payment described in subsection 18.4.1.1 of this Attachment C, shall be eligible to receive a BPCG under this Section 18.5.

#### 18.5.1.2 Non-Eligibility (includes both partial and complete exclusions)

(A) Notwithstanding subsection 18.5.1.1, a Supplier shall not be eligible to receive a Bid Production Cost guarantee payment for Supplemental Event Intervals if the Supplier is not eligible for a real-time Bid Production Cost guarantee payment for the reasons described in Section 18.4.1.2 of this Attachment C.

(B) Notwithstanding subsection 18.5.1.1, Incremental Energy Bid costs and Minimum Generation Bids that exceed $1,000/MWh are only eligible for inclusion in a real-time Bid Production Cost guarantee payment for Supplemental Event Intervals, in accordance with Sections 21.4.1 and 23.7 of this ISO Services Tariff.

#### 18.5.1.3 Additional Eligibility

Notwithstanding Section 18.5.1.2(A), a Supplier shall be eligible to receive a Bid Production Cost guarantee payment for a Generator or Aggregation providing energy during Supplemental Event Intervals occurring as a result of an ISO emergency under Section 4.4.4.1.2 of this ISO Services Tariff regardless of bid mode used for the day.

### 18.5.2 Formula for Determining BPCG for Generators and Aggregations in Supplemental Event Intervals

Real-Time Bid Production Cost Guarantee Payment for Generator or Aggregation g, which is not an Energy Storage Resource or an Aggregation that contains Energy Storage Resource(s) =

$$\sum_{i \in P}\left(\max\left(\begin{array}{c}\left(\int_{max\left(EI_{gi}^{DA},MGI_{gi}^{RT}\right)}^{max\left(EI_{gi}^{RT},MGI_{gi}^{RT}\right)} C_{gi}^{RT} + MGC_{gi}^{RT} * \left(MGI_{gi}^{RT} - MGI_{gi}^{DA}\right)\right) * \frac{S_i}{3600} \\ - LBMP_{gi}^{RT} * \left(EI_{gi}^{RT} - EI_{gi}^{DA}\right) - \left(NASR_{gi}^{TOT} - NASR_{gi}^{DA}\right) - RRAP_{gi} + RRAC_{gi}\end{array}\right), 0\right)$$

Real-Time Bid Production Cost Guarantee for Supplier g, which is an Energy Storage Resource or an Aggregation that contains Energy Storage Resource(s)=

$$Max\left(0, \sum_{i \in P}\left(InjBPCG_{gi} + WthBPCG_{gi}\right)\right)$$

where, when an Energy Storage Resource or an Aggregation that contains Energy Storage Resource(s) has a real-time schedule to inject Energy:

$$InjBPCG_{gi} = \left(\left(\int_{max\left(EI_{gi}^{DA},0\right)}^{EI_{gi}^{RT}} C_{gi}^{RT} - LBMP_{gi}^{RT} * \left(EI_{gi}^{RT} - max\left(EI_{gi}^{DA}, 0\right)\right)\right) * \frac{S_i}{3600}\right)$$

$$- \left(NASR_{gi}^{TOT} - NASR_{gi}^{DA}\right) - RRAP_{gi} + RRAC_{gi}$$

and, when an Energy Storage Resource or an Aggregation that contains Energy Storage Resource(s) has a real-time schedule to withdraw Energy =

$$WthBPCG_{gi} = \left( \left( \int_{min\left(EI_{gi}^{DA},0\right)}^{EI_{gi}^{RT}} C_{gi}^{RT} - LBMP_{gi}^{RT} * \left( EI_{gi}^{RT} - min(EI_{gi}^{DA}, 0) \right) \right) * \frac{S_i}{3600} \right)$$

$$- \left( NASR_{gi}^{TOT} - NASR_{gi}^{DA} \right) - RRAP_{gi} + RRAC_{gi}$$

where:

$Supplier_g$ = Generator $g$ or Aggregation $g$;

$P$ = the set of Supplemental Event Intervals in the Dispatch Day but excluding any intervals in which there are maximum generation pickups or large event reserve pickups where $EI_{gi}^{RT}$ is less than or equal to $EI_{gi}^{DA}$; and

$EI_{gi}^{RT}$ = (i) for any intervals in which there are maximum generation pickups, and the three intervals following, for Suppliers in the location for which the maximum generation pickup has been called -- the average Actual Energy Injections, expressed in MWh, for Generator g in interval i, and for all other Suppliers $EI_{gi}^{RT}$ is as defined in Section 18.4.2 above.

(ii) for any intervals in which there are large event reserve pickups and the three intervals following, $EI_{gi}^{RT}$ is as defined in Section 18.4.2 above.

$C_{gi}^{RT}$ = Bid cost submitted by Supplierg, or when applicable the mitigated Bid cost for Supplier g, in the RTD for the hour that includes RTD interval i expressed in terms of \$/MWh, except in hours in which the NYISO has increased Supplier g's minimum operating level, either (i) at the Supplier's request, or (ii) in order to reconcile the ISO's dispatch with the Supplier's actual output or to address reliability concerns that arise because the Supplieris not following Base Point Signals, in which case $C_{gi}^{RT}$ shall be deemed to be zero;

The definition of all other variables is identical to those defined in Section 18.4 above.

In the event that the ISO re-institutes penalties for poor Regulation Service performance under Section 15.3.8 of Rate Schedule 3 such penalties will not be taken into account when calculating supplemental payments under this Attachment C.

## 18.6 Real-Time BPCG For External Transactions

External Transactions are not eligible to receive Bid Production Cost guarantee payments in the Real-Time Market.

## 18.7. BPCG for Long Start-Up Time Generators Whose Starts are Aborted by the ISO Prior to their dispatch

### 18.7.1 Eligibility for BPCG for Long Start-Up Time Generators Whose Starts Are Aborted by the ISO Prior to their Dispatch

A Supplier that bids on behalf of a long start-up time Generator (i.e., a Generator that cannot be scheduled by SCUC to start up in time for the next Dispatch Day) that is committed by the ISO for reliability purposes as a result of a Supplemental Resource Evaluation and whose start is aborted by the ISO prior to its dispatch, as described in Section 4.2.5 of the ISO Services Tariff, shall be eligible to receive a Bid Production Cost guarantee payment under this Section 18.7.

### 18.7.2 Methodology for Determining BPCG for Long Start-Up Time Generators Whose Starts are Aborted by the ISO Prior to their Dispatch

A Supplier whose long start-up time Generator's start-up is aborted shall receive a prorated portion of its Start-Up Bid submitted for the hour in which the ISO requested that the Generator begin its start-up sequence, based on the portion of the start-up sequence that it has completed prior to the signal to abort the start-up (*e.g.*, if a long start-up time Generator with a seventy-two (72) hour start-up time has its start-up sequence aborted after forty-eight (48) hours, it would receive two-thirds (2/3) of its Start-Up Bid).

## 18.8 BPCG For Demand Reduction In The Day-Ahead Market

### 18.8.1 Eligibility for BPCG for Demand Reduction in the Day-Ahead Market

A Demand Reduction Provider that bids a Demand Side Resource that is committed by the ISO in the Day-Ahead Market to provide Demand Reduction shall be eligible to receive a Bid Production Cost guarantee payment under this Section 18.8. However, incremental Curtailment Bid costs and minimum Curtailment initiation Bids that exceed $1,000/MWh are only eligible for inclusion in a Day-Ahead Bid Production Cost guarantee payment in accordance with Sections 21.4.1 and 23.7 of this ISO Services Tariff.

### 18.8.2 Formula for Determining BPCG for Demand Reduction in the Day-Ahead Market

$\textit{Day-Ahead BPCG for Demand Reduction Provider } d =$

$$Max\left(\sum_{h=1}^{N}\left(MinCurCost_d^h + IncrCurCost_d^h - CurRev_d^h\right) + CurInitCost_d, 0\right)$$

where:

$$CurInitCost_d = \left(\sum_{h=1}^{N}\left(Min\left(ActCur_d^h, SchdCur_d^h\right)\right) \Big/ \left(\sum_{h=1}^{N} SchdCur_d^h\right)\right) * CurCost_d$$

$$MinCurCost_d^h = Min\left(\left(max\left(ActCur_d^h, 0\right), MinCur_d^h\right)\right) * MinCurBid_d^h$$

$$IncrCurCost_d^h = \left(\int_{MinCur_d^h}^{max\left(MinCur_d^h, min\left(SchdCur_d^h, ActCur_d^h\right)\right)} IncrCurBid_d^h\right)$$

$$CurRev_d^h = LBMP_{dh}^{DA} * min\left(max\left(ActCur_d^h, 0\right), SchdCur_d^h\right)$$

$N$ = number of hours in the Day-Ahead Market day.

$CurInitCost_d$ = daily Curtailment Initiation Cost credit for Day-Ahead Demand Reduction Provider *d*;

$MinCurCost_d^h$ = minimum Curtailment cost credit for Day-Ahead Demand Reduction Provider d in hour h;

$IncrCurCost_d^h$ = incremental Curtailment cost credit for Day-Ahead Demand Reduction Provider d for hour h;

$CurCost_d$ = total bid Curtailment Initiation Costs for Day-Ahead Demand Reduction Provider d for the day;

$CurRev_d^h$ = actual revenue for Day-Ahead Demand Reduction Provider d in hour h;

$ActCur_d^h$ = actual Energy curtailed by Day-Ahead Demand Reduction Provider d in hour h expressed in terms of MWh;

$SchdCur_d^h$ = Energy scheduled Day-Ahead to be curtailed by Day-Ahead Demand Reduction Provider d in hour h expressed in terms of MWh;

$MinCurBid_d^h$ = minimum Curtailment initiation Bid submitted by Day-Ahead Demand Reduction Provider d for hour h expressed in terms of $/MWh;

$IncrCurBid_d^h$ = Bid cost submitted by Day-Ahead Demand Reduction Provider d for hour h expressed in terms of $/MWh;

$MinCur_d^h$ = Energy scheduled Day-Ahead to be produced by the minimum Curtailment segment of Day-Ahead Demand Reduction Provider d for hour h expressed in terms of MWh; and

$LBMP_{dh}^{DA}$ = Day-Ahead LBMP for Day-Ahead Demand Reduction Provider d for hour h expressed in $/MWh.

## 18.9 BPCG For Special Case Resources

### 18.9.1 Eligibility for Special Case Resources BPCG

Any Supplier that bids a Special Case Resource that is committed by the ISO for an event in the Real-Time Market shall be eligible to receive a Bid Production Cost guarantee payment under this Section 18.9. Suppliers shall not be eligible for a Special Case Resource Bid Production Cost guarantee payment for the period over which a Special Case Resource is performing a test.

### 18.9.2 Methodology for Determining Special Case Resources BPCG

A Special Case Resource Bid Production Cost guarantee payment shall be made when the Minimum Payment Nomination for any Special Case Resource committed by the ISO over the period of requested performance or four (4) hours, whichever is greater, exceeds the LBMP revenue received for performance by that Special Case Resource; provided, however, that the ISO shall set to zero the Minimum Payment Nomination for Special Case Resource Capacity in each interval in which such capacity was scheduled Day-Ahead to provide Operating Reserves, Regulation Service or Energy.

## 18.10 BPCG For Demand Side Resources Providing Synchronized Operating Reserves and / or Regulation Service In The Day-Ahead Market

### 18.10.1 Eligibility for BPCG for Demand Side Resources Providing Synchronized Operating Reserves and / or Regulation Service in the Day-Ahead Market

Any Supplier that bids a Demand Side Resource that is committed by the ISO to provide synchronized Operating Reserves and/or Regulation Service in the Day-Ahead Market shall be eligible to receive a Bid Production Cost guarantee payment under this Section 18.10.

### 18.10.2 Formula for Determining BPCG for Demand Side Resources Providing Synchronized Operating Reserves and / or Regulation Service in the Day-Ahead Market

A Bid Production Cost guarantee payment to a Demand Side Resource with a synchronized Operating Reserves and/or Regulation Service schedule in the Day-Ahead Market shall be calculated as follows:

BPCG for Demand Side Resource d Providing synchronized Operating Reserves and/or Regulation Service Day-Ahead =

$$max\left(\left(-\sum_{h=1}^{N} NASR_{dh}^{DA}\right), 0\right)$$

where:

| | | |
|---|---|---|
| $N$ | = | number of hours in the Day-Ahead Market day. |
| $NASR_{dh}^{DA}$ | = | Net Ancillary Services revenue, in $, paid to Demand Side Resource d as a result of having been committed to provide Ancillary Services Day-Ahead in hour h which is computed by summing the following: (1) Regulation Service payments made to that Demand Side Resource for all Regulation Service it is scheduled Day-Ahead to provide in that hour, less Demand Side Resource d’s Day-Ahead Regulation Capacity Bid to provide that amount of Regulation Service in that hour; and (2) payments made to Demand Side Resource d for providing Spinning Reserve and synchronized 30-Minute Reserve in that hour if it is committed Day-Ahead to provide such reserves in that hour, less Demand Side Resource d’s Day-Ahead Bid to provide Spinning Reserve and synchronized 30-Minute Reserve in that hour. |

## 18.11 BPCG For Demand Side Resources Providing Synchronized Operating Reserves and / or Regulation Service In The Real-Time Market

### 18.11.1 Eligibility for BPCG for Demand Side Resources Providing Synchronized Operating Reserves and / or Regulation Service in the Real-Time Market

Any Supplier that bids a Demand Side Resource that is committed by the ISO to provide synchronized Operating Reserves and/or Regulation Service in the Real-Time Market shall be eligible to receive a Bid Production Cost guarantee payment under this Section 18.11.

### 18.11.2 Formula for Determining BPCG for Demand Side Resources Providing Synchronized Operating Reserves and / or Regulation Service in the Real-Time Market

A Bid Production Cost guarantee payment to a Demand Side Resource with a synchronized Operating Reserves and/or Regulation Service schedule in the real-time Market shall be calculated as follows:

BPCG for Demand Side Resource d Providing synchronized Operating Reserves and/or Regulation Service in Real-Time =

$$max\left(-\sum_{i \in L}\left(NASR_{di}^{TOT} - NASR_{di}^{DA}\right), 0\right)$$

where:

| | | |
|---|---|---|
| $L$ | = | set of RTD intervals in the Dispatch Day; |
| $NASR_{di}^{TOT}$ | = | Net Ancillary Services revenue, in \$, paid to Demand Side Resource d as a result of either having been scheduled Day-Ahead in the hour that includes RTD interval i or having been scheduled in real-time interval i which is computed by summing the following: (1) Regulation Service payments that would be made to Demand Side Resource d for that hour based on a Performance Index of 1, less the Regulation Capacity and Regulation Movement Bids placed by Demand Side Resource d to provide Regulation Service in that hour at the time it was committed to provide Ancillary Services; and (2) payments made to Demand Side Resource d for providing Spinning Reserve or synchronized 30-Minute Reserve in that hour, less the Bid placed by Demand Side Resource d to provide such reserves in that hour at the time it was scheduled to do so; and |

| | | |
|---|---|---|
| $NASR_{di}^{DA}$ | = | The proportion of the Day-Ahead net Ancillary Services revenue, in \$, that is applicable to interval i calculated by multiplying the $NASR_{dh}^{DA}$ for the hour that includes interval i by the quotient of the number of seconds in RTD interval i divided by 3600. |

## 18.12 Proration Of Start-Up Bid For Generators That Are Committed In The Day-Ahead Market, Or Via Supplemental Resource Evaluation

### 18.12.1 Eligibility to Recover Operating Costs and Resulting Obligations

Generators committed in the Day-Ahead Market or via SRE that are not able to complete their minimum run time within the Dispatch Day in which they are committed are eligible to include in their Start-Up Bid expected net costs of operating on the day following the dispatch day at the minimum operating level specified for the hour in which the Generator is committed, for the hours necessary to complete the Generator's minimum run time.

Generators that receive Day-Ahead or SRE schedules that are not scheduled to operate in real-time, or that do not operate in real-time, at the MW level included in the Minimum Generation Bid for the first hour of the Generator's Day-Ahead or SRE schedule, for the longer of (a) the duration of the Generator's Day-Ahead or SRE schedule, or (b) the minimum run time specified in the Bid that was accepted for the first hour of the Generator's Day-Ahead or SRE schedule, will have the start-up cost component of the Bid Production Cost guarantee calculation prorated in accordance with the formula specified in Section 18.12.2, below. The rules for prorating the start-up cost component of the Bid Production Cost guarantee calculation apply both to operation within the Dispatch Day and to operation on the day following the Dispatch Day to satisfy the minimum run time specified for the hour in which the Generator was scheduled to start-up on the Dispatch Day.

Rules for calculating the reference level that the NYISO uses to test Start-Up Bids for possible mitigation are included in the Market Power Mitigation Measures that are set forth in Attachment H to the ISO Services Tariff. Proration of the start-up cost component of a Generator's Bid Production Cost guarantee based on the Generator's operation in real-time is different/distinct from the mitigation of a Start-Up Bid.

### 18.12.2 Proration of Eligible Start-Up Cost when a Generator Is Not Scheduled, or Does Not Operate to Meet the Schedule Specified in the Accepted Day-Ahead or SRE Start-Up Bid.

The start-up costs included in the Bid Production Cost guarantee calculation may be reduced *pro rata* based on a comparison of the actual MWs delivered in real-time to an hourly minimum MW requirement. The hourly MWh requirement is determined based on the MW component of the Minimum Generation Bid submitted for the Generator's accepted start hour (as mitigated, where appropriate).

#### 18.12.2.1 Total Energy Required to be Provided in Order to Avoid Proration of a Generator's Start-Up Costs

$$TotMWReq_{g,s} = MinOpMW_{g,s} * n_{g,s}$$

Where:

$TotMWReq_{g,s}$ = Total amount of Energy that Generator g, when started in hour s, must provide for its start-up costs not to be prorated

$MinOpMW_{g,s}$ = Minimum operating level (in MW) specified by Generator g in its hour s Bid

$n_{g,s}$ = The last hour that Generator g must operate when started in hour s to complete both its minimum run time and its Day-Ahead schedule. The variable $n_{g,s}$ is calculated as follows:

$$n_{g,s} = max\left(LastHrDASched_{g,s}, LastMinRunHr_{g,s}\right)$$

Where:

$LastHrDASched_{g,s}$ = The last date/hour in a contiguous set of hours in the Dispatch Day, beginning with hour s, in which Generator g is scheduled to operate in the Day-Ahead Market

$LastMinRunHr_{g,s}$ = The last date/hour in a contiguous set of hours in which Generator g would need to operate to complete its minimum run time if it starts in hour s

**18.12.2.2 Calculation of Prorated Start-Up Cost**

$$ProratedSUC_{g,s} = SubmittedSUC_{g,s} * \frac{\sum_{h=s}^{n_{g,s}} MinOpEnergy_{g,h,s}}{TotalMWReq_{g,s}}$$

Where:

$ProratedSUC_{g,s}$ = the prorated start-up cost used to calculate the Bid Production Cost guarantee for Generator g that is scheduled to start in hour s

$SubmittedSUC_{g,s}$= the Start-Up Bid submitted (as mitigated, where appropriate) for Generator g that is scheduled to start in hour s

$MinOpEnergy_{g,h,s}$ = the amount of Energy produced during hour h by Generator g during the time required to complete both its minimum run time and its Day-Ahead schedule, if that generator is started in hour s. $\text{MinOpEnergy}_{g,h,s}$ is calculated as follows:

$$MinOpEnergy_{g,h,s} = min\left(MetActEnergy_{g,h}, MinOpMW_{g,s}\right)$$

Where:

$MetActEnergy_{g,h}$ = the metered amount of Energy produced by Generator g during hour h

**18.12.2.3 Additional Rules/Clarifications that Apply to the Calculation of Prorated Start-Up Cost**

a. For any hour that a Generator is derated below the minimum operating level specified in its accepted Start-Up Bid for reliability, either by the ISO or at the request of a Transmission Owner, the Generator will receive credit for that hour as if the Generator had produced metered actual MWh equal to its $\text{MinOpMW}_{g,s}$.

b. A Generator must be scheduled and operate in real-time to produce Energy consistent with the $\text{MinOpMW}_{g,s}$ specified in the accepted Start-Up Bid for each hour that it is expected to run. *See* Section 18.12.2.1, above. These rules do not specify or require any particular bidding construct that must be used to achieve the desired commitment. However, submitting a self-committed Bid may preclude a Generator from receiving a BPCG. *See, e.g.,* Sections 18.2.1.2.2 and 18.4.1.2.3 of this Attachment C.

## 23.2 Conduct Warranting Mitigation

### 23.2.1 Definitions

The following definitions are applicable to this Attachment H:

For purposes of Section 23.4.5 of this Attachment H, "**Additional CRIS MW**" shall mean the MW of Capacity for which CRIS was requested for an Examined Facility pursuant to the provisions in ISO OATT Sections 25, 30, or 32 (OATT Attachments S, X, or Z), including either: (i) all, or a portion, of the MW of Capacity of that Examined Facility for which CRIS had not been obtained in prior Class Years through a prior Class Year process or through a transfer completed in accordance with OATT Section 25 (OATT Attachment S); and/or (ii) all, or a portion, of an increase in the Capacity of that Examined Facility. Additional CRIS MW does not include any MW quantity of CRIS that is exempt from an Offer Floor pursuant to Section 23.4.5.7.7(a) or (b), Section 23.4.5.7.8, or an increase of 2 MW or less in an Examined Facility's MW quantity of CRIS obtained pursuant to Section 30.3.2.6 of Attachment X to the OATT.

"**Additional SDU Study**" shall mean a deliverability study that a Developer may elect to pursue as that term is defined in OATT Section 25 (OATT Attachment S).

For purposes of Section 23.4.5 of this Attachment H, "**Affiliated Entity**" shall mean, with respect to a person or Entity:

i) all persons or Entities that directly or indirectly control such person or Entity;

ii) all persons or Entities that are directly or indirectly controlled by or under common control with such person or Entity, and (1) are authorized under ISO Procedures to participate in a market for Capacity administered by the ISO, or (2) possess, directly or indirectly, an ownership, voting or equivalent interest of ten percent or more in a Mitigated Capacity Zone Installed Capacity Supplier;

iii) all persons or Entities that provide services to such person or Entity, or for which such person or Entity provides services, if such services relate to the determination or submission of offers for Unforced Capacity in a market administered by the ISO or offers of capacity from a Generator electrically located in a MCZ Import Constrained Locality; or

iv) all persons or Entities, except if for ISP UCAP MW or an RMR Generator, with which such person or Entity has any form of agreement under which such person or Entity has retained or has conferred rights of (i) Control of Unforced Capacity or (ii) the ability to determine the quantity or price of offers to supply capacity from a Generator that has Capacity Resource Interconnection Service, pursuant to the applicable provisions of Attachment X, Attachment S and Attachment Z and is electrically located in an MCZ Import Constrained Locality, even if such capacity does not meet the requirements to be Unforced Capacity.

In the foregoing definition, "**control**" means the possession, directly or indirectly, of the power to direct the management or policies of a person or Entity, and shall be rebuttably presumed from an ownership, voting or equivalent interest of ten percent or more.

**Annual Transmission Baseline Assessment:** means an assessment conducted by the ISO as defined in OATT Section 25 (OATT Attachment S).

**Catastrophic Failure**: shall mean a Forced Outage initially suffered by a Generator which would have reasonably required a repair time of at least 270 days, from the date of the event resulting in the Forced Outage, had it, or a comparable Forced Outage been suffered at a generating facility that is reasonably the same as or similar to the Generator's, the owner of which is intending to return it to service. Repair time includes the reasonable number of days for initial clean up, safety inspections, engineering assessment; damage assessment, cost estimates; site prep and clean up, equipment orders, and actual repair, provided the foregoing are necessitated by the Catastrophic Failure. The determination that a Generator has suffered a Catastrophic Failure shall be based on a technical/engineering evaluation, shall be made by the ISO, and may be made at any time following the event that caused the Forced Outage provided that adequate information is provided to the ISO to support such determination.

"**Class Year Study**" means a Class Year Interconnection Facilities Study as that term is defined in OATT Section 25 (OATT Attachment S).

"**Cleared UCAP**" means the amount of MW (rounded down to the nearest tenth of a MW) that had been subject to an Offer Floor but has cleared in accordance with Section 23.4.5.7.

"**Commenced Construction**" shall mean (a) all of the following site preparation work is completed: ingress and egress routes exist; the site on which the Project will be located is cleared and graded; there is power service to the site; footings are prepared; and foundations have been poured consistent with purchased equipment specifications and project design; or (b) the following financial commitments have been made: (i) (A) an engineering, procurement, and construction contract ("EPC") has been executed by all parties and is effective; or (B) contracts (collectively, "EPC Equivalents") for all of the following have been executed by all parties and is effective: (1) project engineering, (2) procurement of all major equipment, and (3) construction of the Project, and (ii) the cumulative payments made by the Developer under the EPC or EPC Equivalents to the counterparties to those respective agreements is equal to at least thirty (30) percent of the total costs of the EPC or EPC Equivalents.

"**Competitive and Non-Discriminatory Hedging Contract**" shall mean a contract to hedge a risk associated with a product offered in the ISO Administered Markets between a Non-Qualifying Entry Sponsor and the Developer, Owner or Operator of an Examined Facility with a term that shall not exceed three years (inclusive of all options to extend and extensions) and that the ISO determines has been executed pursuant to a procurement process that satisfies the requirements enumerated below. Competitive and Non-Discriminatory Hedging Contracts shall not be deemed to be a non-qualifying contractual relationship that would prevent an Examined Facility from obtaining a Competitive Entry Exemption pursuant to 23.4.5.7.9 of Attachment H of this Services Tariff. The ISO shall determine that a contract is a Competitive and Non-Discriminatory Hedging Contract only if it concludes, and the Non-Qualifying Entry Sponsor executes a certification confirming that, the contract was executed through a procurement process that met all of the following requirements: (A) both new and existing resources satisfy the requirements of the procurement; (B) the requirements of the procurement were fully objective and transparent ; (C) the contract was awarded based on the lowest cost offers of qualified bidders that responded to the solicitation; (D) the procurement terms did not restrict the type of capacity resources that may participate in, and satisfy the requirements of, the procurement; (E) the procurement terms did not include selection criteria that could otherwise give preference to new resources; and (F) the procurement terms did not use indirect means to discriminate against existing resources, including, but not limited to, by imposing geographic constraints, unit fuel requirements, maximum unit heat-rate requirements or requirements for new construction.

"**Constrained Area**" shall mean: (a) the In-City area, including any areas subject to transmission constraints within the In-City area that give rise to significant locational market power; and (b) any other area in the New York Control Area that has been identified by the ISO as subject to transmission constraints that give rise to significant locational market power, and that has been approved by the Commission for designation as a Constrained Area.

For purposes of Section 23.4.5 of this Attachment H, "**Control**" with respect to Unforced Capacity shall mean the ability to determine the quantity or price of offers to supply Unforced Capacity from a Mitigated Capacity Zone Installed Capacity Supplier submitted into an ICAP Spot Market Auction; but excluding ISP UCAP MW or UCAP from an RMR Generator.

For purposes of Section 23.4.5.6 of this Attachment H, **"CRIS Transfer Confirmation Date"** shall mean the date in which the transferor and transferee confirms the proposed CRIS transfer (e.g., through a CRIS transfer notification form submitted prior to August 1st for same location CRIS transfers for active facilities looking to transfer CRIS rights for the next Capability Year) and is considered by ISO, in consultation with the Market Monitoring Unit, to be a date which will become, essentially and practicably, an irreversible action for the transferor with respect to effectuating the CRIS transfer and for purposes with respect to the NYISO's issuance of a final physical withholding determination to the transferor.

For purposes of Section 23.4.5.7 "**CRIS MW**" shall mean the MW of Capacity for which CRIS was assigned to a Generator or UDR project pursuant to ISO OATT Sections 25, 30, or 32 (OATT Attachments S, X, or Z).

"**Developer**" shall have the meaning specified in the ISO's Open Access Transmission Tariff.

"**Electric Facility**" shall mean a Generator, an Aggregation or an electric transmission facility.

For purposes of Section 23.4.5 of this Attachment H, "**Entity**" shall mean a corporation, partnership, limited liability corporation or partnership, firm, joint venture, association, joint-stock company, trust, unincorporated organization or other form of legal or juridical organization or entity.

Beginning with the Class Year immediately following Class Year 2021, subsequent Class Year Studies, Additional SDU Studies, and Expedited Deliverability Studies that are commenced after August 1, 2022, the ISO will establish an "**Estimated Initial Decision Period**" to be twelve months from the Class Year Study Start Date and three months from the Expedited Deliverability Study Start Date for the purpose of establishing the starting Capability Years for the Part A Mitigation Study Period Years 1 through 3 and Part A Mitigation Study Period Years 4 through 6.

"**Examined Facility**" shall mean (I) each proposed new Generator and proposed new UDR project, and each existing Generator that has ERIS only and no CRIS, that is a member of the Class Year Study, Additional SDU Study or Expedited Deliverability Study that requested CRIS , or that requested an evaluation of the transfer of CRIS rights from another location in the Class Year Facilities Study commencing in the calendar year in which the Class Year Facility Study determination is being made (the Capability Periods of expected entry as further described below in this Section, the "Mitigation Study Period"), and (II) each (i) existing Generator that did not have CRIS rights, and (ii) proposed new Generator and proposed new UDR project, provided such Generator under Subsection (i) or (ii) is an expected recipient of transferred CRIS rights at the same location regarding which the ISO has been notified by the transferor or the transferee of a transfer pursuant to OATT Attachment S Section 25.9.4 that will be effective on a date within the Mitigation Study Period ("Expected CRIS Transferee"). The term "Examined Facilities" does not include any facility exempt from an Offer Floor pursuant to the provisions of Section 23.4.5.7.7; or any Generator or UDR project that meets the definition of Excluded Facilities below. The term "Generator" includes each Generator that plans to participate in a DER Aggregation.

**"Exceptional Circumstances**": shall mean one or more unavoidable circumstances, as determined by the ISO, that individually or collectively render as unavailable the data necessary for the ISO to perform an audit and review of a Market Party, pursuant to Section 23.4.5.6.2 of this Services Tariff. Exceptional Circumstances may include, but are not limited to: the inaccessibility of the physical facility; the inaccessibility of necessary documentation or other data; and the unavailability of information regarding the regulatory obligations with which the Market Party will be required to comply in order to return its Generator to service which regulatory obligations are not yet known but which will be made known by the applicable regulatory authority under existing laws and regulations provided that none of the above described circumstances are the result of delay or inaction by the Market Party. The magnitude of the repair cost, alone, shall not be an Exceptional Circumstance.

**Excluded Facilities** shall mean Resources or UDR project(s) that are qualified to satisfy the goals specified in the New York State Climate Leadership and Community Protection Act, Chapter 106 of the Laws of 2019, as may be amended ("CLCPA") and such Resources and UDR Projects will not be subject to review by the NYISO under the BSM rules or otherwise subject to an Offer Floor. Excluded Facilities shall include but are not limited to Resources comprised exclusively of one or more the following technologies: energy storage, demand response, wind generation, solar generation, geothermal generation, hydroelectric generation (which may also include generation created by tidal, wave and other ocean activity), and fuel cells that operate without utilizing fossil fuel. Excluded Facilities will also include Resources using additional technology types not explicitly listed above and UDR projects that satisfy the CLCPA goals, if the Developer, Owner or Operator of the Resource or UDR project certifies in accordance with

Section 23.4.5.7.5 of this Services Tariff and ISO Procedures that the Resource or UDR Project meets one of the following criteria:(i) the Resource technology type is specifically identified by the CLCPA or is publicly identified by New York State as supporting the goals of the CLCPA; (ii) the Resource or UDR project has a contract with the State of New York to achieve the goals of the CLCPA (such as a Tier 1 or Tier 4 contract with NYSERDA); or (iii) the Resource or UDR project is eligible to receive a contract authorized by New York State that is supporting the goals of the CLCPA (such as a Tier 1 or Tier 4 contract with NYSERDA).

"**Expedited Deliverability Study**" shall mean a deliverability study that an eligible Developer may elect to pursue as that term is defined in OATT Section 25 (OATT Attachment S) that may determine the extent to which an existing or proposed facility satisfies the ISO Deliverability Interconnection Standard at its requested CRIS level without the need for System Deliverability Upgrades. The schedule and scope of the study is defined in Sections 25.5.9.2.1 and 25.7.1.2 of this Attachment S.

"**Final Decision Round**" shall have the meaning specified in Section 25 (Attachment S) of the ISO's Open Access Transmission Tariff.

For purposes of Section 23.4.5 of this Attachment H, "**Going-Forward Costs**" shall mean: either (a) the costs, including but not limited to mandatory capital expenditures necessary to comply with federal or state environmental, safety or reliability requirements that must be met in order to supply Installed Capacity, net of anticipated energy and ancillary services revenues, as determined by the ISO as specified in Section 23.4.5.3, for each of the following instances, as applicable, of supplying Installed Capacity that could be avoided if an Installed Capacity Supplier otherwise capable of supplying Installed Capacity were either (1) to cease supplying Installed Capacity and Energy for a period of one year or more while retaining the ability to re-enter such markets, or (2) to retire permanently from supplying Installed Capacity and Energy; or (b) the opportunity costs of foregone sales outside of a Mitigated Capacity Zone, net of costs that would have been incurred as a result of the foregone sale if it had taken place.

For purposes of Section 23.4.5 of this Attachment H, "**Indicative Mitigation Net CONE**" shall mean the capacity price calculated by the ISO for informational purposes only if there is not an effective ICAP Demand Curve and the Commission (i) has accepted an ICAP Demand Curve for the Mitigated Capacity Zone that will become effective when the Mitigated Capacity Zone is first effective, in which case, the Indicative Mitigation Net CONE shall be the capacity price on such ICAP Demand Curve for the Mitigated Capacity Zone corresponding to the average amount of excess capacity above the Indicative NCZ Locational Minimum Installed Capacity Requirement, as applicable, expressed as a percentage of that requirement that formed the basis for the ICAP Demand Curve accepted by the Commission; or, (ii) has not accepted an ICAP Demand Curve for the Mitigated Capacity Zone, but the ISO has filed an ICAP Demand Curve for the Mitigated Capacity Zone pursuant to Services Tariff Section 5.14.1.2.2.4.11, in which case the Indicative Mitigation Net CONE shall be the capacity price on such ICAP Demand Curve corresponding to the average amount of excess capacity above the Indicative NCZ Locational Minimum Installed Capacity Requirement, expressed as a percentage of that requirement, that formed the basis for such ICAP Demand Curve.

"**Initial Decision Period**" shall have the meaning specified in Section 25 (Attachment S) of the ISO's Open Access Transmission Tariff.

"**Interconnection Customer**" shall have the meaning specified in Section 32 (Attachment Z) of the ISO's Open Access Transmission Tariff.

"**Interconnection Facilities Study Agreement**" shall have the meaning specified in Section 30 (Attachment X) of the ISO's Open Access Transmission Tariff.

"**Market Monitoring Unit**" shall have the same meaning in these Mitigation Measures as it has in Attachment O.

"**Market Party**" shall mean any person or entity that is, or for purposes of the determinations to be made pursuant to Section 23.4.5.7 of this Attachment H proposes or plans a Project that would be, a buyer and/or a seller in; or that makes bids or offers to buy or sell in; or that schedules or seeks to schedule Transactions with the ISO in or affecting any of the ISO Administered Markets including through the submission of bids or offers into any External Control Area, or any combination of the foregoing.

For purposes of Section 23.4.5 of this Attachment H, "**Mitigated UCAP**" shall mean one or more megawatts of Unforced Capacity that are subject to Control by a Market Party that has been identified by the ISO as a Pivotal Supplier.

For purposes of Section 23.4.5 of this Attachment H, "**Mitigation Net CONE**" shall mean the capacity price on the currently effective ICAP Demand Curve for the Mitigated Capacity Zone corresponding to the average amount of excess capacity above the Mitigated Capacity Zone Installed Capacity requirement, expressed as a percentage of that requirement, that formed the basis for the ICAP Demand Curve approved by the Commission.

"**Mitigation Study Period**" shall mean the duration of time extending six consecutive Capability Periods and beginning with the Starting Capability Period associated with a Class Year Study, Additional SDU Study, and/or Expedited Deliverability Study.

"**NCZ Examined Project**" shall mean any Generator or UDR project that is not an Excluded Facility and that is not exempt pursuant to 23.4.5.7.8 and either (i) is in a Class Year on the date the Commission accepts the first ICAP Demand Curve to apply to a Mitigated Capacity Zone or (ii) meets the criteria found in (II) of the definition of Examined Facility above. An NCZ Examined Project may be at any phase of development or in operation or an Installed Capacity Supplier.

For purposes of Section 23.4.5 of this Attachment H, "Net Cost of New Entry", or "**Net CONE**" shall mean the localized levelized embedded costs of a peaking unit in a Mitigated Capacity Zone, net of the likely projected annual Energy and Ancillary Services revenues of such unit, as determined in connection with establishing the Demand Curve for a Mitigated Capacity Zone pursuant to Section 5.14.1.2 of the Services Tariff, or as escalated as specified in Section 23.4.5.7 of Attachment H.

“**New Capacity**” shall mean a new Generator, a substantial addition to the capacity of an existing Generator, or the reactivation of all or a portion of a Generator that has been out of service for five years or more that commences commercial service after the effective date of this definition.

For the purposes of Section 23.4.5 of this Attachment H, **“Non-Qualifying Entry Sponsors”** shall mean a Transmission Owner, Public Power Entity, or any other entity with a Transmission District in the NYCA, or an agency or instrumentality of New York State or a political subdivision thereof.

For purposes of Section 23.4.5 of this Attachment H, “**Offer Floor**” for a Mitigated Capacity Zone Installed Capacity Supplier that is not a Special Case Resource shall mean the lesser of (i) a numerical value equal to 75% of the Mitigation Net CONE translated into a seasonally adjusted monthly UCAP value (“Mitigation Net CONE Offer Floor”), or (ii) the numerical value that is the first year value of the Unit Net CONE determined as specified in Section 23.4.5.7, translated into a seasonally adjusted monthly UCAP value using an appropriate class outage rate, (“Unit Net CONE Offer Floor”). The Offer Floor for Additional CRIS MW shall mean a numerical value determined as specified in Section 23.4.5.7.6.

“**Owner**” shall have the meaning specified in Section 31.1.1 of the ISO’s Open Access Transmission Tariff.

**“Part A Exemption”** shall mean an exemption awarded to an Examined Facility (i) pursuant to the Part A Exemption Test conducted by the ISO prior to the Class Year immediately following Class Year 2021 as described in Section 23.4.5.7.2(a) of the Services Tariff or (ii) pursuant to the Part A Exemption Test described in Section 23.4.5.7.3.1 of the Services Tariff which shall be conducted by the ISO beginning with Class Year immediately following Class Year 2021, and in all subsequent Class Year Studies, Additional SDU Studies, and Expedited Deliverability Studies that are commenced after August 1, 2022.

“**Part A Exemption Test**” shall mean (i) for any Class Year Study that was conducted prior to the Class Year immediately following Class Year 2021, the test conducted by the ISO to determine if an Examined Facility would be exempt from an Offer Floor under Section 23.4.5.7.2 (a) of the Services Tariff; or (ii) for the Class Year immediately following Class Year 2021 and any subsequent Class Year Study, Additional SDU Study, and Expedited Deliverability Study that starts after August 1, 2022, the test conducted by the ISO to determine if an Examined Facility shall be exempt from an Offer Floor in accordance with Section 23.4.5.7.3.1 of the Services Tariff.

**“Part A Group 1 Examined Facilities”** for the Class Year immediately following Class Year 2021 and any subsequent Class Year Study, Additional SDU Study, and Expedited Deliverability Study that starts after August 1, 2022 shall mean the set of Examined Facilities being evaluated for the Part A Exemption Test described in Section 23.4.5.7.3.1 using the Part A Mitigation Study Period Years 1 through 3 as determined by the ISO pursuant to the criteria set forth in Section 23.4.5.7.3.1.3 of the Services Tariff.

**"Part A Group 2 Examined Facilities"** for the Class Year immediately following Class Year 2021 and any subsequent Class Year Study, Additional SDU Study, and Expedited Deliverability Study that starts after August 1, 2022 shall mean the set of Examined Facilities being evaluated for the Part A Exemption Test described in Section 23.4.5.7.3.1 using the Part A Mitigation Study Period Years 4 through 6 as determined by the ISO pursuant to the criteria set forth in Section 23.4.5.7.3.1.3 of the Services Tariff.

"**Part A Mitigation Study Period Years 1 through 3**" for the Class Year immediately following Class Year 2021 and any subsequent Class Year Study, Additional SDU Study, and any Expedited Deliverability Study that starts after August 1, 2022 shall mean the evaluation period applied to Part A Group 1 Examined Facilities which shall be considered concurrently to receive a Part A Exemption in accordance with Section 23.4.5.7.3.1 of the Services Tariff. Such evaluation period shall be composed of the three consecutive Capability Years starting with the Capability Year following the Capability Year in which the Estimated Initial Decision Period for the then current Class Year Study or Expedited Deliverability Study falls.

"**Part A Mitigation Study Period Years 4 through 6**" for the Class Year immediately following the Class Year 2021 and any subsequent Class Year Study, Additional SDU Study, and any Expedited Deliverability Study that starts after August 1, 2022 shall mean the evaluation period applied to Part A Group 2 Examined Facilities which shall be considered concurrently to receive a Part A Exemption in accordance with Section 23.4.5.7.3.1 of the Services Tariff. Such evaluation period shall be composed of the three consecutive Capability Years starting with the fourth Capability Year following the Capability Year in which the Estimated Initial Decision Period for the then current Class Year Study or Expedited Deliverability Study falls.

"**Part B Exemption Test**" shall mean the test conducted by the ISO in accordance with 23.4.5.7.2 (b) and ISO Procedures for an Examined Facility in any Class Year Study, Additional SDU Study, or Expedited Deliverability Study.

For purposes of Section 23.4.5 of this Attachment H, "**Pivotal Supplier**" shall mean (i) for the New York City Locality, a Market Party that, together with any of its Affiliated Entities, (a) Controls 500 MW or more of Unforced Capacity, and (b) Controls Unforced Capacity some portion of which is necessary to meet the New York City Locality Locational Minimum Installed Capacity Requirement in an ICAP Spot Market Auction; (ii) for the G-J Locality, a Market Party that, together with any of its Affiliated Entities, (a) Controls 650 MW or more of Unforced Capacity; and (b) Controls Unforced Capacity some portion of which is necessary to meet the G-J Locality Locational Minimum Installed Capacity Requirement in an ICAP Spot Market Auction; and (iii) for each Mitigated Capacity Zone except the New York City Locality and the G-J Locality, if any, a Market Party that Controls at least the quantity of MW of Unforced Capacity specified for the Mitigated Capacity Zone and accepted by the Commission. Unforced Capacity that are MW of an External Sale of Capacity shall not be included in the foregoing calculations

"**Project Cost Allocation**" shall have the meaning specified in Section 25 (Attachment S) of the ISO's Open Access Transmission Tariff.

“**Public Policy Resource**” shall mean for purposes of Section 23.4.5 of this Attachment H, an Examined Facility that is determined by the ISO to be a zero-emitting resource and that does not meet the definition of Excluded Facility under Section 23.2 of this Attachment H and, where applicable, as also determined by the NYISO under Section 23.4.5.7.5.1 of this Attachment H. A resource may request an ex-ante determination from the ISO if it qualifies as a zero-emitting resource prior to their entrance into a Class Year Study or Expedited Deliverability Study. The ISO, in consultation with the MMU, shall issue a determination no later than 20 days after the necessary information has been submitted for consideration. This determination will be binding as long as the resource’s technology and characteristics are not modified before issuance of a final determination to the Examined Facility. The ISO will post such ex-ante determinations to its website concurrent with the response to the resource. Public Policy Resources shall be identified and posted on the ISO website no later than the ISO’s posting of the Part A Group 1 Examined Facilities and the Part A Group 2 Examined Facilities for the Class Year immediately following Class Year 2021, and any subsequent Class Year Study, Additional SDU Study, and Expedited Deliverability Study that start after August 1, 2022, as provided in Section 23.4.5.7.3.1.4 of this Services Tariff.

“**Project**” shall have the meaning specified in Section 30.1 of the ISO’s Open Access Transmission Tariff.

For purposes of Section 23.4.5 of this Attachment H, “**Responsible Market Party**” shall mean the Market Party that is authorized, in accordance with ISO Procedures, to submit offers in an ICAP Spot Market Auction to sell Unforced Capacity from a specified Installed Capacity Supplier.

“**Revised Project Cost Allocation**” shall have the meaning specified in Section 25 (Attachment S) of the ISO’s Open Access Transmission Tariff.

**“Self Supply LSE”** shall mean a Load Serving Entity in one or more Mitigated Capacity Zones that operates under a long-standing business model to meet more than fifty percent of its Load obligations through its own generation and that is (i) a municipally owned electric system that was created by an act of one or more local governments pursuant to the laws of the State of New York to own or control distribution facilities and/or provide electric service, (ii) a cooperatively owned electric system that was created by an act of one or more local governments pursuant to the laws of State of New York or otherwise created pursuant to the Rural Electric Cooperative Law of New York to own or control distribution facilities and/or provide electric service, (iii) a “Single Customer Entity,” or (iv) a “Vertically Integrated Utility.” A Self Supply LSE cannot be an entity that is a public authority or corporate municipal instrumentality created by the State of New York (including a subsidiary of such an authority or instrumentality) that owns or operates generation or transmission and that is authorized to produce, transmit or distribute electricity for the benefit of the public unless it meets the criteria provided in section (i), (ii), or (iii) of this definition. For purposes of this definition only: “Vertically Integrated Utility” means a utility that owns generation, includes such generation in a non-bypassable charge in its regulated rates, earns a regulated return on its investment in such generation, and that as of the date of its request for a Self Supply Exemption, has not divested more than seventy-five percent of its generation assets owned on May 20, 1996; and “Single Customer Entity” means an LSE that serves at retail only customers that are under common control with such LSE, where such control means holding 51% or more of the voting securities or voting interests of the LSE and all its retail customers.

**"Starting Capability Period"** is the Summer Capability Period that will commence three years from the start of the year of the Class Year Study and shall be the start of the Mitigation Study Period for any Examined Facility in a Class Year Study, as well as any Additional SDU Studies and Expedited Deliverability Studies and that are completed while the Class Year Study is ongoing. If no Class Year Study is ongoing when an Expedited Deliverability Study or Additional SDU Study arrives at the Decision Period, the Starting Capability Period used for the purposes of Section 23.4.5 of this Attachment H shall be the Starting Capability Period that applied to the most recently completed Class Year Study.

"**Subsequent Decision Period**" shall have the meaning specified in Section 25 (Attachment S) of the ISO's Open Access Transmission Tariff.

For purposes of Section 23.4.5 of this Attachment H, "**Surplus Capacity**" shall mean the amount of Installed Capacity, in MW, available in a Mitigated Capacity Zone in excess of the Locational Minimum Installed Capacity Requirement for such Mitigated Capacity Zone.

"**Total Evaluated CRIS MW**" shall mean the Additional CRIS MW requested plus either (i) if the Installed Capacity Supplier previously received an exemption under Sections 23.4.5.7.2(b), 23.4.5.7.6(b), 23.4.5.7.7 or 23.4.5.7.8, all prior Additional CRIS MW since the facility was last exempted under Sections 23.4.5.7.2(b), 23.4.5.7.6(b), or 23.4.5.7.8, or (ii) for all other Installed Capacity Suppliers, all MW of Capacity for which an Examined Facility obtained CRIS pursuant to the provisions in ISO OATT Sections 25, 30, or 32 (OATT Attachments S, X, or Z).

For purposes of Section 23.4.5 of this Attachment H, "**UCAP Offer Reference Level**" shall mean a dollar value equal to the projected clearing price for each ICAP Spot Market Auction determined by the ISO on the basis of the applicable ICAP Demand Curve and the total quantity of Unforced Capacity from all Installed Capacity Suppliers in a Mitigated Capacity Zone for the period covered by the applicable ICAP Spot Market Auction.

For purposes of Section 23.4.5 of this Attachment H, "**Unit Net CONE**" shall mean localized levelized embedded costs of a specified Installed Capacity Supplier, including interconnection costs, and for an Installed Capacity Supplier located outside a Mitigated Capacity Zone including embedded costs of transmission service, in either case net of likely projected annual Energy and Ancillary Services revenues, and revenues associated with other energy products (such as energy services and renewable energy credits, as determined by the ISO, translated into a seasonally adjusted monthly UCAP value using an appropriate class outage rate. The Unit Net CONE of an Installed Capacity Supplier that has functions beyond the generation or transmission of power shall include only the embedded costs allocated to the production and transmission of power, and shall not net the revenues from functions other than the generation or transmission of power.

### 23.2.2 Conduct Subject to Mitigation

Mitigation Measures may be applied: (i) to the bidding, scheduling or operation of an "Electric Facility"; or (ii) as specified in Section 23.2.4.2.

### 23.2.3 Conditions for the Imposition of Mitigation Measures

23.2.3.1 To achieve the foregoing purpose and objectives, Mitigation Measures should only be imposed to remedy conduct that would substantially distort or impair the competitiveness of any of the ISO Administered Markets. Accordingly, the ISO shall seek to impose Mitigation Measures only to remedy conduct that:

23.2.3.1.1 is significantly inconsistent with competitive conduct; and

23.2.3.1.2 would result in a material change in one or more prices in an ISO Administered Market or production cost guarantee payments ("guarantee payments") to a Market Party.

23.2.3.2 In general, the ISO shall consider a Market Party's or its Affiliates' conduct to be inconsistent with competitive conduct if the conduct would not be in the economic interest of the Market Party or its Affiliates in the absence of market power. The categories of conduct that are inconsistent with competitive conduct include, but may not be limited to, the three categories of conduct specified in Section 23.2.4 below.

### 23.2.4 Categories of Conduct that May Warrant Mitigation

23.2.4.1 The following categories of conduct, whether by a single firm or by multiple firms acting in concert, may cause a material effect on prices or guarantee payments in an ISO Administered Market if exercised from a position of market power.  Accordingly, the ISO shall monitor the ISO Administered Markets for the following categories of conduct, and shall impose appropriate Mitigation Measures if such conduct is detected and the other applicable conditions for the imposition of Mitigation Measures are met:

23.2.4.1.1 Physical withholding of an Electric Facility, that is, not offering to sell or schedule the output of or services provided by an Electric Facility capable of serving an ISO Administered Market.  Such withholding may include, but not be limited to, (i) falsely declaring that an Electric Facility has been forced out of service or otherwise become unavailable, (ii) refusing to offer Bids or schedules for an Electric Facility when such conduct would not be in the economic interest of the Market Party or its Affiliates in the absence of market power (includes refusing to offer Bids or schedules to withdraw Energy for a Generator that must withdraw Energy in order to be able to later inject Energy); (iii); making an unjustifiable change to one or more operating parameters of an Electric Facility or an Aggregation that reduces a Resource's ability to provide Energy or Ancillary Services or (iv) operating a Generator or an Aggregation in real-time  at a lower output level than the Generator or Aggregation would have been expected to provide had the Generator or Aggregation followed the ISO's dispatch instructions, in a manner that is not attributable to the Generator's or Aggregation's verifiable physical operating capabilities and that would not be in the economic interest of the Market Party or its Affiliates in the absence of market power.

For purposes of this Section and Section 23.4.3.2, the term “unjustifiable change” shall mean a change in an Electric Facility’s operating parameters that is: (a) not attributable to an Electric Facility’s verifiable physical operating capabilities, and (b) is not a rational competitive response to economic factors other than market power.

23.2.4.1.2 Economic withholding of an Electric Facility, that is, submitting Bids for an Electric Facility that are unjustifiably high so that (i) the Electric Facility is not or will not be dispatched or scheduled, or (ii) the Bids will set a market clearing price; or submitting Bids for a Withdrawal-Eligible Generator to withdraw Energy that are unjustifiably high, so that (i) the Electric Facility is or will be dispatched or scheduled to withdraw Energy, or (ii) the Bids will set a market clearing price.

23.2.4.1.3 Uneconomic production from an Electric Facility is increasing the output of an Electric Facility to levels that would not be in the economic interest of the Market Party or its Affiliates in the absence of market power. Uneconomic withdrawal by an Electric Facility is withdrawing Energy that would not be in the economic interest of the Market Party or its Affiliates in the absence of market power.

23.2.4.2 Mitigation Measures may also be imposed, subject to FERC’s approval, to mitigate the market effects of a rule, standard, procedure or design feature of an ISO Administered Market that allows a Market Party or its Affiliate to manipulate market prices or otherwise impair the efficient operation of that market, pending the revision of such rule, standard, procedure or design feature to preclude such manipulation of prices or impairment of efficiency.

23.2.4.3 Taking advantage of opportunities to sell at a higher price or buy at a lower price in a market other than an ISO Administered Market shall not be deemed a form of withholding or otherwise inconsistent with competitive conduct.

23.2.4.4 The ISO and the Market Monitoring Unit shall monitor the ISO Administered Markets for other categories of conduct, whether by a single firm or by multiple firms acting in concert, that have material effects on prices or guarantee payments in an ISO Administered Market. The ISO shall: (i) seek to amend the foregoing list as may be appropriate, in accordance with the procedures and requirements for amending the Plan, to include any such conduct that would substantially distort or impair the competitiveness of any of the ISO Administered Markets; and (ii) seek such other authorization to mitigate the effects of such conduct from the FERC as may be appropriate. The responsibilities of the Market Monitoring Unit that are addressed in this section of the Mitigation Measures are also addressed in Section 30.4.6.2.2 of Attachment O.

## 23.3 Criteria for Imposing Mitigation Measures

### 23.3.1 Identification of Conduct Inconsistent with Competition

Conduct that may potentially warrant the imposition of a mitigation measure includes the categories described in Section 23.2.4 above, which shall be detected through the use of indices and screens developed, adopted and made available as specified in Attachment O. The thresholds listed in Sections 23.3.1.1 to 23.3.1.3 below shall be used to identify substantial departures from competitive conduct indicative of an absence of workable competition.

#### 23.3.1.1 Thresholds for Identifying Physical Withholding

23.3.1.1.1 The following initial thresholds will be employed by the ISO to identify physical withholding of a Generator or generation or an Aggregation or a CSR Scheduling Limit by a Market Party and its Affiliates:

23.3.1.1.1.1 Except for conduct addressed in Section 23.3.1.1.1.2: Withholding that exceeds (i) 10 percent of a Generator's or an Aggregation's capability or 10 percent of a CSR Scheduling Limit, or (ii) 100 MW of a Generator's or an Aggregation's capability or 100 MW of a CSR Scheduling Limit, or (iii) 5 percent of the total capability of a Market Party and its Affiliates, or (iv) 200 MW of the total capability of a Market Party and its Affiliates.

For a Generator or an Aggregation or a Market Party in a Constrained Area for intervals in which an interface or facility into the area in which the Generator or generation or Aggregation is located has a Shadow Price greater than $0.04/MWh, indicating an active constraint, withholding that exceeds (i) 10 percent of a Generator's or an Aggregation's capability or 10 percent of a CSR Scheduling Limit, or (ii) 50 MW of a Generator's or an Aggregation's capability or 50 MW of a CSR Scheduling Limit, or (iii) 5 percent of the total capability of a Market Party and its Affiliates, or (iv) 100 MW of the total capability of a Market Party and its Affiliates.

23.3.1.1.1.2 Operating a Generator or generation or an Aggregation in real-time at a lower output level than would have been expected had the Market Party's and its Affiliate's Generator or generation or Aggregation followed the ISO's dispatch instructions, resulting in a difference in output that exceeds (i) 15 minutes times a Generator's or Aggregation's stated response rate per minute at the output level that would have been expected had the Generator or Aggregation followed the ISO's dispatch instructions, or (ii) 100 MW for a Generator or Aggregation, or (iii) 200 MW of the total capability of a Market Party and its Affiliates. For a Generator or an Aggregation or a Market Party in a Constrained Area for intervals in which an interface or facility into the area in which the generation or Aggregation is located has a Shadow Price greater than $0.04/MWh, indicating an active constraint, operating a Generator or generation or an Aggregation in real-time at a lower output level than would have been expected had the Market Party's and its Affiliate's Generator or generation or Aggregation followed the ISO's dispatch instructions, resulting in a difference in output that exceeds (i) 15 minutes times a Generator's or an Aggregation's stated response rate per minute at the output level that would have been expected had the Generator or Aggregation followed the ISO's dispatch instructions, or (ii) 50 MW of a Generator's or an Aggregation's capability, or (iii) 100 MW of the total capability of a Market Party and its Affiliates.

23.3.1.1.2 The amounts of generating capacity considered withheld for purposes of applying the thresholds in this Section 23.3.1.1 shall include unjustified deratings, and the portions of a Generator's or an Aggregation's output that is not Bid or subject to economic withholding. The amounts deemed withheld shall not include (i) generating output that is subject to a forced outage, subject to verification by the ISO as may be appropriate that an outage was forced, (ii) capacity that is out of service for maintenance in accordance with an ISO maintenance schedule, or (iii) generating capacity that is not Bid in the Real-Time Market, because and to the extent it would have to use unauthorized natural gas to operate, subject to verification by the ISO as may be appropriate that operation would require the use of unauthorized natural gas. See Section 23.3.1.4.6.2.1.1 below.

23.3.1.1.3 A transmission facility shall be deemed physically withheld if it is not operated in accordance with ISO instructions and such failure to conform to ISO instructions causes or contributes to transmission congestion. A transmission facility shall not be deemed withheld if it is subject to a forced outage or is out of service for maintenance in accordance with an ISO maintenance schedule.

**23.3.1.2 Thresholds for Identifying Economic Withholding**

23.3.1.2.1 The following thresholds shall be employed by the ISO to identify economic withholding that may warrant the mitigation of a Generator or an Aggregation in an area that is not a Constrained Area, or in a Constrained Area during periods not subject to transmission constraints affecting the Constrained Area, and shall be determined with respect to a reference level determined as specified in Section 23.3.1.4:

23.3.1.2.1.1 Incremental Energy and Minimum Generation Bids: An increase exceeding 300 percent or $100 per MWh, whichever is lower; provided, however, that Incremental Energy or Minimum Generation Bids below $25 per MWh shall be deemed not to constitute economic withholding when evaluating Bids to provide Energy.

23.3.1.2.1.1.1 Threshold for Bids to withdraw Incremental Energy: an increase exceeding 300 percent or $100 per MWh, whichever is lower. However, the threshold for Bids to withdraw Incremental Energy that have an associated reference level that is between -$25 and $25 per MWh (inclusive) is, instead, $75 per MWh.

23.3.1.2.1.1.2 Additional Thresholds used to assess Bids for Generators and Aggregations that the ISO evaluates as a price spread for purposes of scheduling and dispatch.

The following hourly and daily thresholds will be employed to evaluate the spread between the minimum and maximum dollar values included in an Energy Storage Resource's or an Aggregation that consists solely of Energy Storage Resources' multi-step incremental Energy Bid. The time periods over which the comparisons are performed are specified below.

(a) Hourly Threshold (applies to both the Day-Ahead and Real-Time Markets)—the Incremental Energy Bid spread is compared to the Incremental Energy reference level spread for the same market hour. The Bid spread is determined by subtracting the least Incremental Energy Bid price from the greatest Incremental Energy Bid price. This value is compared to the reference level spread, which is determined by subtracting the Incremental Energy reference level price that corresponds to the least Incremental Energy Bid price from the Incremental Energy reference level price that corresponds to the greatest Incremental Energy Bid price.  A Bid spread that exceeds the reference level spread by more than 300 percent or by more than $100 per MWh, whichever is lower, exceeds the conduct threshold.  However, if the reference level spread is less than $25 per MWh, then the Hourly Threshold shall be $75 per MWh.

(b) Daily Threshold (only applies to the Day-Ahead Market)—the Incremental Energy Bid spread across the Day-Ahead market day is compared to the Incremental Energy reference level spread.  The Bid spread is determined by subtracting the least Incremental Energy Bid price submitted for any hour of the Day-Ahead market day ("Hour X") from the greatest Incremental Energy Bid price submitted for any hour of the same market-day ("Hour Y").  Hour X and Hour Y can be the same market hour.  This value is compared to the reference level spread, which is determined by subtracting the Incremental Energy reference level price Bid that corresponds to the least Incremental Energy Bid price in Hour X from the Incremental Energy reference level price that corresponds to the greatest Incremental Energy Bid price in Hour Y.  A Bid spread that exceeds the reference level spread by more than 300 percent or by more than $100 per MWh, whichever is lower, exceeds the conduct threshold.  However, if the reference level spread is less than $25 per MWh, then the Hourly Threshold shall be $75 per MWh.

23.3.1.2.1.2 Operating Reserves and Regulation Service Bids:

23.3.1.2.1.2.1 Operating Reserves and Regulation Capacity Bids: A 300 percent increase or an increase of $50 per MW, whichever is lower; provided, however, that such Bids below $5 per MW shall be deemed not to constitute economic withholding.

23.3.1.2.1.2.2 Regulation Movement Bids: A 300 percent increase.

23.3.1.2.1.3 Start-Up Bids: A 200 percent increase.

23.3.1.2.1.4 Time-based Bid parameters: An increase of 3 hours, or an increase of 6 hours in total for multiple time-based Bid parameters. Time-based Bid parameters include, but are not limited to, start-up times, minimum run times, minimum down times, and temporal minimum and maximum parameters related to the withdrawal and injection of Energy by Withdrawal-Eligible Generators or Aggregations containing Withdrawal-Eligible Generators.

23.3.1.2.1.5 Bid parameters expressed in units other than time or dollars, including the MW component of a Minimum Generation Bid (also referred to as the "minimum operating level"): A 100 percent increase for parameters that are minimum values, or a 50 percent decrease for parameters that are maximum values (including but not limited to ramp rates, maximum stops, and operating parameters related to the withdrawal and injection of Energy by Withdrawal-Eligible Generators or Aggregations containing Withdrawal-Eligible Generator(s)).

23.3.1.2.2 The following thresholds shall be employed by the ISO to identify economic withholding that may warrant the mitigation of a Generator or an Aggregation in an area that is a Constrained Area, and shall be determined with respect to a reference level determined as specified in Section 23.3.1.4:

23.3.1.2.2.1 For Energy and Minimum Generation Bids for the Real-Time Market: for intervals in which an interface or facility into the area in which a Generator or an Aggregation is located has a Shadow Price greater than $0.04/MWh, indicating an active constraint, the lower of the thresholds specified for areas that are not Constrained Areas or a threshold determined in accordance with the following formula:

$$Threshold = \frac{2\% * Average\ Price * 8760}{Constrained\ Hours}$$

where:

*Average Price* = the average price in the Real-Time Market in the Constrained Area over the past 12 months, adjusted for fuel price changes, and adjusted for Out-of-Merit Generation dispatch as feasible and appropriate; and

*Constrained Hours* = the total number of minutes over the prior 12 months, converted to hours (retaining fractions of hours), in which the real-time Shadow Price has been greater than $0.04/MWh, indicating an active constraint, on any interface or facility leading into the Constrained Area in which the Generator is located. For the In-City area, "Constrained Hours" shall also include the number of minutes that a Storm Watch is in effect. Determination of the number of Constrained Hours shall be subject to adjustment by the ISO to account for significant changes in system conditions.

23.3.1.2.2.2 For so long as the In-City area is a Constrained Area, the thresholds specified in subsection 23.3.1.2.2.1 shall also apply: (a) in intervals in which the transmission capacity serving the In-City area is subject to Storm Watch limitations; (b) to an In-City Generator or Aggregation that is operating as Out-of-Merit Generation; and (c) to a Generator or an Aggregation dispatched as a result of a Supplemental Resource Evaluation.

23.3.1.2.2.3 For Energy and Minimum Generation Bids for the Day-Ahead Market: for all Constrained Hours for the Generator or Aggregation being Bid, a threshold determined in accordance with the formula specified in subsection 23.3.1.2.2.1 above, but where Average Price shall mean the average price in the Day-Ahead Market in the Constrained Area over the past twelve months, adjusted for fuel price changes, and where Constrained Hours shall mean the total number of hours over the prior 12 months in which the Shadow Price in the Day-Ahead Market has been greater than $0.04/MWh, indicating an active constraint, on any interface or facility leading into the Constrained Area in which the Generator or Aggregation is located. Determination of the number of Constrained Hours shall be subject to adjustment by the ISO to account for significant changes in system conditions.

23.3.1.2.2.4 For Start-Up Bids; a 50% increase.

23.3.1.2.2.5 The thresholds listed in Sections 23.3.1.2.1.2 and 23.3.1.2.1.4 through 23.3.1.2.1.5.

23.3.1.2.2.6 For intervals in which an interface or facility into the area in which a Generator is located has a Shadow Price greater than $0.04/MWh, indicating an active constraint in the Day-Ahead Market or in the Real-Time Market, the additional thresholds used to assess Bids for Generators and Aggregations that the ISO evaluates as a price spread for purposes of scheduling and dispatch are set forth below. The evaluation method is described in Section 23.3.1.2.1.1.2 of these Mitigation Measures.

(a) Hourly Threshold (applies to both the Day-Ahead and Real-Time Markets)—the Incremental Energy Bid spread is compared to the Incremental Energy reference level spread for the same market hour. The Bid spread is determined by subtracting the least Incremental Energy Bid price from the greatest Incremental Energy Bid price. This value is compared to the reference level spread, which is determined by subtracting the Incremental Energy reference level price that corresponds to the least Incremental Energy Bid price from the Incremental Energy reference level price that corresponds to the greatest Incremental Energy Bid price. A Bid spread that exceeds the reference level spread by more than the lower of the threshold specified for areas that are not Constrained Areas, or a threshold determined in accordance with the formulae set forth in Section 23.3.1.2.2.1 (real-time) or Section 23.3.1.2.2.3 (Day-Ahead) of these Mitigation Measures, exceeds the conduct threshold.

(b) Daily Threshold (only applies to the Day-Ahead Market)—the Incremental Energy Bid spread across the Day-Ahead market day is compared to the Incremental Energy reference level spread. The Bid spread is determined by subtracting the least Incremental Energy Bid price submitted for any hour of the Day-Ahead market day (“Hour X”) from the greatest Incremental Energy Bid price submitted for any hour of the same market-day (“Hour Y”). Hour X and Hour Y can be the same market hour. This value is compared to the reference level spread, which is determined by subtracting the Incremental Energy reference level price Bid that corresponds to the least Incremental Energy Bid price in Hour X from the Incremental Energy reference level price that corresponds to the greatest Incremental Energy Bid price in Hour Y. A Bid spread that exceeds the reference level spread by more than the lower of the threshold specified for areas that are not Constrained Areas, or a threshold determined in accordance with the formula set forth in Section 23.3.1.2.2.3 (Day-Ahead) of these Mitigation Measures, exceeds the conduct threshold.

23.3.1.2.3 The following thresholds shall be employed by the ISO to identify economic withholding that requires the mitigation of a Generator or Aggregation that is committed outside the ISO's economic evaluation process to protect NYCA or local area reliability in an area that is not a designated Constrained Area. Whether the thresholds specified in Sections 23.3.1.2.3.3(i) through 23.3.1.2.3.3(vi) below have been exceeded shall be determined with respect to a reference level determined as specified in Section 23.3.1.4 of these Mitigation Measures.

If provisions 23.3.1.2.3.1 and 23.3.1.2.3.2 below are met for a Generator or Aggregation in the New York Control Area that is not located in a designated Constrained Area, the ISO shall substitute a reference level for each Bid, or component of a Bid, for which the applicable threshold specified in provisions 23.3.1.2.3.3(i) through 23.3.1.2.3.3(vi) below is exceeded. Where mitigation is determined to be appropriate, the mitigated results will be used in all aspects of the NYISO's settlement process.

23.3.1.2.3.1 The Generator or Aggregation was committed outside the ISO's economic merit order selection process to protect or maintain New York Control Area or local system reliability as a Day-Ahead Reliability Unit ("DARU") or via a Supplemental Resource Evaluation ("SRE"), or was committed as a DARU or via SRE and was also dispatched Out-of-Merit above its minimum generation level to protect or maintain New York Control Area or local system reliability; and

23.3.1.2.3.2 One of the following three (i) – (iii) conditions in this Section 23.3.1.2.3.2 must be satisfied in order for mitigation to be applied:

i the Market Party (including its Affiliates) that owns or offers the Generator or Aggregation is the only Market Party that could effectively solve the reliability need for which the Generator or Aggregation was committed or dispatched, or

ii when evaluating an SRE that was issued to address a reliability need that multiple Market Parties' Generators or Aggregations are capable of solving, the NYISO only received Bids from one Market Party (including its Affiliates), or

iii when evaluating a DARU, if the Market Party was notified of the need for the reliability commitment of its Generator or Aggregation prior to the close of the Day-Ahead Market.

23.3.1.2.3.3 The Bids or Bid components submitted for the Generator or Aggregation that were accepted outside the economic evaluation process to protect or maintain New York Control Area or local system reliability:

i exceeded the Generator's Minimum Generation Bid reference level by the greater of 10% or $10/MWh, or

ii. exceeded the Generator's or Aggregation's Incremental Energy Bid reference level by the greater of 10% or $10/MWh, or

iii. exceeded the Generator's Start-Up Bid reference level by 10%, or

iv. exceeded the Generator's minimum run time, start-up time, and minimum down time reference levels by more than one hour in aggregate, or

v. exceeded the Generator's minimum generation MW reference level by more than 10%, or

vi. decreased the Generator’s maximum number of stops per day below the Generator’s reference level by more than one stop per day, or to one stop per day.

23.3.1.2.4 For In-City Generators or Aggregations committed in the Day-Ahead Market for local reliability, additional Mitigation Measures are specified in Section 23.5.2.1.

**23.3.1.3 Thresholds for Identifying Uneconomic Production and Uneconomic Withdrawal of Energy**

23.3.1.3.1 The following thresholds will be employed by the ISO to identify uneconomic production that may warrant the imposition of a mitigation measure:

23.3.1.3.1.1 Energy scheduled at an LBMP that is less than the applicable reference level minus the greater of $25 per MWh or 80% of the applicable reference level (*i.e.,* LBMP < (Applicable Reference Level – max($25, 80%×Applicable Reference Level)); provided, however, the ISO shall not evaluate Generators to identify uneconomic production when the applicable LBMP is greater than $25 per MWh; or

23.3.1.3.1.2 Real-time output from a Generator or generation or an Aggregation resulting in real-time operation at a higher output level than would have been expected had the Market Party’s and the Affiliate’s Generator or generation or Aggregation followed the ISO’s dispatch instructions, if such failure to follow ISO dispatch instructions in real-time causes or contributes to transmission congestion, and it results in an output difference that exceeds (i) 15 minutes times a Generator’s or an Aggregation’s stated response rate per minute at the output level that would have been expected had the Generator or Aggregation followed the ISO’s dispatch instructions, or (ii) 100 MW for a Generator or an

Aggregation, or (iii) 200 MW of the total capability of a Market Party and its Affiliates.

23.3.1.3.2 The following thresholds will be employed by the ISO to identify uneconomic withdrawals of Energy by Withdrawal-Eligible Generators or Aggregations containing Withdrawal-Eligible Generator(s) that may warrant the imposition of a mitigation measure:

23.3.1.3.2.1 Energy withdrawn at an LBMP that is at least 300 percent or $75/MWh, whichever is greater, more than the applicable reference level of a Withdrawal-Eligible Generator or of an Aggregation that contains Withdrawal-Eligible Generator(s), provided, however, that schedules to withdraw Energy that are determined by the ISO based on the economics of an offer to withdraw Energy, including the Incremental Energy Bid spread of a Withdrawal-Eligible Generator or of an Aggregation that contains Withdrawal-Eligible Generator(s), shall not be considered uneconomic withdrawals under this Section 23.3.1.3.2.1; or

23.3.1.3.2.2 Real-time withdrawals by a Withdrawal-Eligible Generator or an Aggregation containing Withdrawal-Eligible Generator(s) resulting in different real-time operation than would have been expected had the Market Party's and the Affiliate's Generator or generation or Aggregation followed the ISO's dispatch instructions, if such failure to follow ISO dispatch instructions in real-time causes or contributes to transmission congestion, and it results in an output difference that exceeds (i) 15 minutes times a Generator's or an Aggregation's stated response rate per minute at the output level that would have been expected had the Generator followed the ISO's dispatch instructions, or (ii) 100 MW for a

Generator or an Aggregation, or (iii) 200 MW of the total capability of a Market Party and its Affiliates.

**23.3.1.4 Reference Levels**

23.3.1.4.1 Except as provided in Sections 23.3.1.4.3 – 23.3.1.4.6 below, a reference level for each component of a Generator's or an Aggregation's Bid to provide Energy shall be calculated on the basis of the following methods, listed in the order of preference subject to the existence of sufficient data.

A reference level for an Energy Storage Resource's or an Aggregation that contains one or more Energy Storage Resources' Incremental Energy Bid to provide or withdraw Energy shall be calculated consistent with Sections 23.3.1.4.1.3 or 23.3.1.4.2 below, subject to the existence of sufficient data.

23.3.1.4.1.1 The lower of the mean or the median of a Generator's or an Aggregation's accepted Bids or Bid components, in hour beginning 6 to hour beginning 21 but excluding weekend and designated holiday hours, in competitive periods over the most recent 90 day period for which the necessary input data are available to the ISO's reference level calculation systems, adjusted for changes in fuel prices consistent with Section 23.3.1.4.6, below. To maintain appropriate reference levels (i) the ISO shall exclude all Incremental Energy and Minimum Generation Bids below $15/MWh from its development of Bid-based reference levels, (ii) the ISO shall exclude Minimum Generation Bids submitted for a Generator or an Aggregation that was committed on the day prior to the Dispatch Day for the hours during the Dispatch Day that the Generator or Aggregation needs to operate in order to complete the minimum run time specified in the Bid it submitted for the hour in which it was committed, and (iii) the ISO may exclude other Bids that would cause a reference level to deviate substantially from a Generator's or an Aggregation's marginal cost when developing Bid-based reference levels;

23.3.1.4.1.2 Calculate incremental energy and minimum generation reference levels for a Generator or an Aggregation using the mean of the LBMP at the Generator's or Aggregation's location during the lowest-priced 50 percent of the hours that the Generator or Aggregation was dispatched over the most recent 90 day period for which the necessary LBMP data are available to the ISO's reference level calculation systems, adjusted for changes in fuel prices consistent with Section 23.3.1.4.6, below. To maintain appropriate reference levels (i) the ISO shall exclude all LBMPs below $15/MWh from its development of LBMP-based reference levels, (ii) the ISO shall exclude LBMPs during hours when a Generator or an Aggregation was scheduled as a Day-Ahead Reliability Unit or via a Supplemental Resource Evaluation or was Out-of-Merit Generation, from its development of that Generator's or Aggregation's LBMP-based reference levels, (iii) for a Generator or an Aggregation that was committed on the day prior to the Dispatch Day, the ISO shall exclude LBMPs for the hours during the Dispatch Day that the Generator or Aggregation needs to operate in order to complete the minimum run time specified in the Bid it submitted for the hour in which the Generator or Aggregation was committed from the ISO's development of that Generator's or Aggregation's LBMP-based reference levels, and (iv) the ISO may exclude LBMPs that would cause a reference level to deviate substantially below a Generator's or an Aggregation's marginal cost when developing LBMP-based reference levels; or

23.3.1.4.1.3 A level determined in consultation with the Market Party submitting the Bid or Bids at issue, provided such consultation has occurred prior to the occurrence of the conduct being examined by the ISO, and provided the Market Party has provided data on a Generator's or an Aggregation's operating costs in accordance with specifications provided by the ISO.

The reference level for a Generator's or an Aggregation's Energy and Ancillary Service Bids are intended to reflect the Generator's or Aggregation's marginal costs. The ISO's determination of a Generator's or an Aggregation's Energy marginal costs shall include an assessment of the Generator's or Aggregation's incremental operating costs in accordance with the following formula:

$$(heat\ rate * fuel\ costs) + (emissions\ rate * emissions\ allowance\ price) + (other\ variable\ operating\ and\ maintenance\ costs) + opportunity\ costs$$

Opportunity cost is the cost, in dollars, representing (a) the total net revenue in the future time periods that is expected to be forgone by being dispatched by the ISO in the current time period, or (b) the total net cost in future time periods that is expected to be avoided by being dispatched by the ISO in the current time period. Opportunity costs are limited to costs that the ISO reasonably determines to be appropriate based on such data as may be furnished by the Market Party or otherwise available to the ISO. Reference levels shall also include such other factors or adjustments as the ISO shall reasonably determine to be appropriate based on such data as may be furnished by the Market Party or otherwise available to the ISO.

23.3.1.4.2 If sufficient data do not exist to calculate a reference level on the basis of either of the first two methods, or if the ISO determines that none of the three methods are applicable to a particular type of Bid component, or an attempt to determine a reference level in consultation with a Market Party has not been successful, or if the reference level produced does not reasonably approximate a Generator's or Aggregation's marginal cost, the ISO shall determine a reference level on the basis of:

23.3.1.4.2.1 the ISO's estimate of the costs or physical parameters of an Electric Facility, taking into account available operating costs data, appropriate input from the Market Party, and the best information available to the ISO; or

23.3.1.4.2.2 an appropriate average of competitive bids of one or more similar Electric Facilities.

23.3.1.4.3 Notwithstanding the foregoing provisions, the reference level for Incremental Energy Bids for New Capacity, excluding Energy Storage Resources, for the three year and six month period following the New Capacity's first production of Energy while synchronously interconnected to the New York State Transmission System shall be the higher of (i) the amount determined in accordance with the provision of Section 23.3.1.4.1 or 23.3.1.4.2, or (ii) the average of the fuel price-adjusted peak LBMPs over the twelve months prior to the New Capacity's first production of Energy while synchronously interconnected to the New York State Transmission System of the New Capacity in the Load Zone in which the New Capacity is located during hours when Generators or Aggregations with operating characteristics similar to the New Capacity would be expected to run. For entities owning or otherwise controlling the output of capacity in the New York Control Area other than New Capacity, the provisions of this Section 23.3.1.4.3 shall apply only to net additions of capacity during the applicable three year and six month period.

23.3.1.4.4 Notwithstanding the foregoing provisions, a reference level for a Generator's start-up costs Bid shall be calculated on the basis of the following methods, listed in the order of preference subject to the existence of sufficient data:

23.3.1.4.4.1 If sufficient bidding histories under the applicable bidding rules for a given Generator's start-up costs Bids have been accumulated, the lower of the mean or the median of the Generator's accepted start-up costs Bids in competitive periods over the previous 90 days for similar down times, adjusted for changes in fuel prices consistent with Section 23.3.1.4.6 below. However, accepted Start-Up Bids that incorporate anticipated costs of operating on the day after the Dispatch Day in which the Generator is committed in order to permit the Generator to satisfy its minimum run time shall not be used to develop Bid-based start-up reference levels;

23.3.1.4.4.2 A level determined in consultation with the Market Party submitting the Bid or Bids at issue and intended to reflect the costs incurred for a Generator to achieve its specified minimum operating level from an offline state, provided such consultation has occurred prior to the occurrence of the conduct being examined by the ISO, and provided the Market Party has provided data on the Generator's operating costs in accordance with specifications provided by the ISO; or

23.3.1.4.4.3 Generators committed in the Day-Ahead Market or via Supplemental Resource Evaluation that are not able to complete their minimum run time within the Dispatch Day in which they are committed are eligible to include in their Start-Up Bid expected net costs of operating on the day following the dispatch day at the minimum operating level (in MW) specified in the Generator's Bid for the commitment hour, for the hours necessary to complete the Generator's minimum run time. The NYISO will calculate a start-up reference level that incorporates the net costs the Generator is expected to incur on the day following the Dispatch Day as follows:

23.3.1.4.4.3.1 Calculation of a start-up reference level that includes expected net costs of operating on the day following the Dispatch Day

The NYISO will use the following calculation to develop a reference level that incorporates the costs that a Generator is expected to incur on the day following the Dispatch Day.

$$LateDayAdjusted_{g,i} = StrtUpRef_g + \max\left(0, MinGenRef_{g,i} * BidMinGen_{g,i} * \sum_{h=0}^{Z_{g,i}-1} SR_{g,h,i}\right)$$

Where:

$LateDayAdjusted_{g,i}$ = calculated start-up reference level for Generator g for hour i in $ (reflects the applicable start-up reference level ($StrtUpRef_g$), plus the expected net cost of operating on the day following the Dispatch Day)

$StrtUpRef_g$ = the start-up reference level for Generator g in $ that is in effect at the time the calculation is performed (does not include the expected net cost of operating on the day following the Dispatch Day)

$MinGenRef_{g,i}$ = the minimum generation cost reference level for Generator g for hour i in $/MW that is in effect at the time the calculation is performed

$BidMinGen_{g,i}$ = Generator g's Day-Ahead minimum operating level for hour i, in MW

$Z_{g,i}$ = the number of hours the Generator must operate during the day following the Dispatch Day in order to complete its minimum run time if it starts in hour i

$SR_{g,h,i}$ = shortfall ratio for Generator g that is bidding to start in hour i which must run during hour h in order to complete its minimum run time, calculated in accordance with Section 23.3.3.4.4.3.2, below

23.3.1.4.4.3.2 Calculation of the shortfall ratio for use in Section 23.3.1.4.4.3.1, above

$SR_{g,h,i}$ = the shortfall ratio calculated for Generator g that is bidding to start in hour i, and that must run during hour h to complete its minimum run time.

In all cases in which Generator g's Day-Ahead minimum operating level deviates from the average of the previous seven days' Day-Ahead minimum operating levels for the same hour by less than 5 MW (*i.e.*, if $\left|AvgBidMinGen_{g,h,i} - BidMinGen_{g,i}\right| < 5MW$ ) or by less than 10% (*i.e.*, if both $BidMinGen_{g,i} < 1.1 * AvgBidMinGen_{g,h,i}$ $and$ $BidMinGen_{g,i} > 0.9 * AvgBidMinGen_{g,h,i}$),

Where:

$AvgBidMinGen_{g,h,i}$ = The average minimum operating level submitted in the Day-Ahead Market for hour h on the seven days preceding the day containing hour i, in MW, excluding any days for which a minimum operating level was not submitted in the Day-Ahead Market for Generator g, for hour h; and

$BidMinGen_{g,i}$ = The minimum operating level submitted in the Day-Ahead Market for Generator g for hour i, in MW

and in all cases in which $AvgBidMinGen_{g,h,i}$ cannot be calculated because minimum operating levels were not submitted for Generator g in the Day-Ahead Market for hour h on any of the seven days preceding the day containing hour i, the $SR_{g,h,i}$ value will be calculated using the primary method. Otherwise, the $SR_{g,h,i}$ value will be calculated using the alternative method.

***Primary Method of Calculating the Shortfall Ratio***

$$SR_{g,h,i} = 1 - \frac{1}{7} * \sum_{d=1}^{7} \frac{LBMP_{g,h,i,d}}{MinGenRef_{g,h,i,d}}$$

Where:

$LBMP_{g,h,i,d}$ = Day ahead LBMP at the location of Generator g in hour h of the Day-Ahead Market for the Dispatch Day that precedes the day containing hour i by d days, and

$MinGenRef_{g,h,i,d}$ = minimum generation cost reference level for Generator g in hour h of the Day-Ahead Market for the Dispatch Day that precedes the day containing hour i by d days

***Alternative Method of Calculating the Shortfall Ratio***

$$SR_{g,h,i} = 1 - \frac{AvgLBMP_{g,h,i}}{\left(AvgRefRate_{g,h,i} * \frac{RefRate2_{g,i}}{RefRate1_{g,h,i}}\right)}$$

Where:

$AvgLBMP_{g,h,i}$ = The average of the Day-Ahead LBMPs at the location of Generator *g* for hour *h* on the seven days preceding the day containing hour *i*, in $/MWh, excluding any days for which a minimum operating level was not submitted in the Day-Ahead Market for Generator *g* for hour *h*

$AvgRefRate_{g,h,i}$ = The average of the minimum generation reference levels for Generator *g* in hour *h* on the seven days preceding the day containing hour *i*, in $/MWh, excluding any days for which a minimum operating level was not submitted in the Day-Ahead Market for Generator *g* for hour *h*

$RefRate1_{g,h,i}$ = The minimum generation cost reference level in $/MWh for Generator *g* for hour *i*, calculated using the most current reference data, and assuming that the minimum operating level submitted in the Day-Ahead Market for Generator *g* in hour *i* corresponds to the MWs reflected in the $AvgBidMinGen_{g,h,i}$

$RefRate2_{g,i}$ = The minimum generation cost reference level in $/MWh for Generator *g* for hour *i*, calculated using the most current reference data, and incorporating the minimum operating level submitted in the Day-Ahead Market for Generator *g* in hour *i* that corresponds to the MWs reflected in the $BidMinGen_{g,i}$

Notwithstanding the above, in all cases where the denominator of the equation for calculating $SR_{g,h,i}$ is not greater than zero, $SR_{g,h,i}$ shall be set to zero, under both the primary and alternative methods.

23.3.1.4.4.4 The methods specified in Section 23.3.1.4.2.

23.3.1.4.5 The ISO is not required to calculate real-time reference levels for the three Operating Reserve products (Spinning Reserve, 10-Minute Non-Synchronized Reserves and 30-Minute Reserves) because Generators or Aggregations that are capable of providing these products and that are submitting Bids into the Real-Time Market are automatically assigned a real-time Operating Reserves Availability Bid of zero for the amount of Operating Reserves they are capable of providing.

The ISO shall calculate real-time reference levels for Regulation Capacity in accordance with Sections 23.3.1.4.1.1, 23.3.1.4.1.3 or 23.3.1.4.2 of these Mitigation Measures. The ISO shall calculate real-time reference levels for Regulation Movement in accordance with Sections 23.3.1.4.1.3 or 23.3.1.4.2.1 of these Mitigation Measures and shall not calculate real-time Reference levels for Regulation Movement in accordance with Section 23.3.1.4.1.1.

The ISO shall calculate Day-Ahead reference levels for the three Operating Reserves products in accordance with Sections 23.3.1.4.1.1, 23.3.1.4.1.3 or 23.3.1.4.2 of these Mitigation Measures. The ISO shall calculate Day-Ahead reference levels for Regulation Capacity in accordance with Sections 23.3.1.4.1.1, 23.3.1.4.1.3 or 23.3.1.4.2 of these Mitigation Measures. The ISO shall calculate Day-Ahead reference levels for Regulation Movement in accordance with Sections 23.3.1.4.1.3 or 23.3.1.4.2.1 of these Mitigation Measures and shall not calculate Day-Ahead Reference levels for Regulation Movement in accordance with Section 23.3.1.4.1.1.

23.3.1.4.6 Reflecting Fuel Costs in Reference Levels. The ISO shall use the best fuel cost information available to it to adjust reference levels to reflect appropriate fuel costs.

23.3.1.4.6.1 ISO Reporting Obligation. If the ISO did not utilize the best fuel cost information available to it when it adjusted reference levels to reflect appropriate fuel costs, and the ISO's failure to utilize the best fuel cost information available to it affected market clearing prices or had an impact on guarantee payments that cannot be corrected, then the ISO shall report any market clearing price and uncorrected guarantee payment impacts to FERC staff and to its Market Participants. The ISO is not required to report, or to otherwise act, if no market impact is identified.

23.3.1.4.6.2 Market Parties shall monitor Generator or Aggregations reference levels and shall endeavor to timely (as that term is defined in Section 23.3.1.4.6.8 below) contact the ISO to request an adjustment to a Generator's or an Aggregation's reference level(s) when the Generator's or Aggregation's fuel type or fuel price change.

23.3.1.4.6.2.1 Subject to the exceptions set forth in Section 23.3.1.4.6.2.1.2 below, the ISO shall not permit charges for unauthorized natural gas use to be included as a component in the development of a Generator's or an Aggregation's reference levels and Market Parties shall not be eligible to recover costs associated with unauthorized natural gas use.

23.3.1.4.6.2.1.1 What constitutes "unauthorized" natural gas use is specified in each natural gas pipeline's or local distribution company's ("LDC's") applicable tariff, rate schedule or customer contract.  Unauthorized natural gas use may result from, but is not limited to, the following circumstances: (i) consumption of natural gas in violation of the terms of an Operational Flow Order ("OFO") issued by the relevant natural gas LDC or pipeline; (ii) violation of instructions issued by the relevant natural gas LDC or pipeline restricting consumption of natural gas or use of natural gas imbalance service, when such instructions are issued consistent with the LDC's or pipeline's authority under a tariff, rate schedule or contract; (iii) consumption of natural gas during a period of authorized interruption of service by the relevant natural gas LDC or pipeline, determined in accordance with the terms of the applicable tariff, rate schedule or contract; or (iv) use of natural gas balancing services that are explicitly identified in the relevant natural gas LDC's or pipeline's applicable tariff, rate schedule or contract as unauthorized use or penalty gas.

23.3.1.4.6.2.1.2 If and to the extent a Market Party has obtained specific authorization from the relevant natural gas LDC or pipeline to use gas that would otherwise be unauthorized, such use shall not be considered unauthorized use by the ISO.  Market Parties shall make every effort to clearly document authorization they obtain from the LDC or pipeline.  Documentation obtained after the fact will be considered.

23.3.1.4.6.3 Screening of fuel type and fuel price information.  The ISO may use automated processes and/or require manual review of fuel type and fuel price information submitted by Market Parties to test the accuracy of the information submitted in order to prevent market clearing prices and guarantee payments from being incorrectly calculated.

23.3.1.4.6.4 Consistent with the rules specified in this Section 23.3.1.4.6 of the Mitigation Measures and the procedures that the ISO develops to implement these rules, Market Parties shall notify the ISO of changes in fuel type or fuel price by (i) submitting revised fuel type or fuel price information to the ISO's Market Information System along with the Generator's or Aggregation's Bid(s), or (ii) by directly contacting the ISO to request a reference level update consistent with ISO procedures, or (iii) by utilizing both of the available notification methods. Revised fuel type or fuel price information that exceeds, or is rejected based upon, the thresholds that the ISO uses to automatically screen fuel type or fuel price information that is submitted to the ISO's Market Information System along with a Generator's or an Aggregation's Bid(s) shall be submitted by directly contacting the ISO to request a reference level update, consistent with ISO procedures.

23.3.1.4.6.4.1 Exception—changes in fuel price or fuel type that are offered to support Incremental Energy or Minimum Generation Bids that exceed $1,000/MWh must be submitted in accordance with Section 23.7.3 (for a Generator) or Section 23.7.4 (for a Demand Side Resource) of these Mitigation Measures.

23.3.1.4.6.5 Following the completion of the ISO's automated and/or manual screening processes, the ISO shall use fuel type and fuel price information that Market Parties or their representatives submit to develop Generator or Aggregation reference levels unless (i) the information submitted is inaccurate, or (ii) the information was not timely submitted, and the Market Party's failure to timely submit the information is not excused by the ISO in accordance with Section 23.3.1.4.6.8 below, or (iii) consistent with Section 23.3.1.4.6.9 below.

23.3.1.4.6.6 The ISO may not always have sufficient time to complete its screening of proposed fuel type or fuel price changes prior to the relevant Day-Ahead Market day or Real-Time Market hour. *If* fuel type or fuel price information (i) is timely submitted or, where untimely, the submission of fuel type or fuel price information is excused in accordance with Section 23.3.1.4.6.8 below, and (ii) the fuel type or fuel price information that the Market Party submitted is proven to have been accurate or to have understated the actual cost incurred for that component, and (iii) the Bid(s) were tested using reference levels that reflected outdated fuel type and/or fuel price information and the Bid(s) were mitigated or a sanction was imposed pursuant to Section 23.4.3 of these Mitigation Measures, *then* the ISO shall (a) re-perform any test(s) that resulted in a sanction being imposed pursuant to Section 23.4.3 of these Mitigation Measures, using the accurate fuel type and/or fuel price information and use the revised results to calculate the appropriate sanction (if any), and (b) determine if the Bids for the Generator or Aggregation would have failed the relevant conduct test(s) if accurate fuel type and/or fuel price information had been used to develop reference levels. The ISO shall then restore any original (as-submitted) Bid(s) that would not have failed the relevant conduct test(s) if accurate fuel type and/or fuel price information had been used to develop the Generator's or Aggregation's reference levels, and use the restored Bid(s) to determine a settlement. Otherwise the ISO shall use the Generator's or Aggregation's correct or corrected reference level(s) to determine a settlement.

23.3.1.4.6.7 The ISO shall publicly post the thresholds it employs to automatically screen fuel type and fuel price information that is submitted to the ISO's Market Information System for potentially inaccurate fuel type and fuel price data inputs.

23.3.1.4.6.8 For purposes of this Section 23.3.1.4.6, "timely" notice or submission to the Real-Time Market shall mean the submission of fuel type and/or fuel price information using the methods specified in Section 23.3.1.4.6.4 of these Mitigation Measures prior to market close for the relevant Real-Time Market hour. For purposes of this Section 23.3.1.4.6, "timely" notice or submission to the Day-Ahead Market shall mean the submission of fuel type and/or fuel price information using the methods specified in Section 23.3.1.4.6.4 of these Mitigation Measures at least 15 minutes prior to the close of the Day-Ahead Market (*i.e.*, by 4:45 a.m.). Market Parties are not expected to submit invoices or other supporting data with their Day-Ahead Market or Real-Time Market fuel type and fuel price information, but are expected to retain invoices and other supporting data consistent with the data retention requirements set forth in the Plan, and to be able to produce such information within a reasonable timeframe when asked to do so by the ISO or by its Market Monitoring Unit.

It may not always be possible for a Market Party to timely update a Generator's or Aggregation's fuel type or fuel price to reflect unexpected real-time changes or events in advance of the first affected market-hour. Upon a showing of extraordinary circumstances, the ISO may retroactively reflect in Real-Time

Market reference levels fuel type or fuel price information that was not timely submitted by a Market Party. While it should ordinarily be possible for a Market Party to timely submit updated fuel type and fuel price information for use in developing a Generator's or an Aggregation's Day-Ahead Market reference levels, the ISO may retroactively accept and utilize late-submitted Day-Ahead Market fuel type or fuel price information upon a showing of extraordinary circumstances.

23.3.1.4.6.8.1 Exception—changes in fuel price or fuel type that are offered to support Incremental Energy or Minimum Generation Bids that exceed $1,000/MWh must be submitted in accordance with the submission deadlines specified in Section 23.7.3 (for a Generator) or Section 23.7.4 (for a Demand Side Resource) of these Mitigation Measures.

23.3.1.4.6.9 If (i) the ISO determines, following consultation with the Market Party and review by the Market Monitoring Unit, that the Market Party or its representative has submitted inaccurate fuel type or fuel price information that was biased in the Market Party's favor, or (ii) if a Market Party is subject to a penalty or sanction under Section 23.4.3.3.3 of these Mitigation Measures for submitting inaccurate fuel price or fuel type information, *then* the ISO shall cease using the fuel type and fuel price information submitted to the ISO's Market Information System along with the Generator's or Aggregation's Bid(s) to develop reference levels for the affected Generator(s) or Aggregation(s) in the relevant (Day-Ahead or real-time) market for the duration(s) set forth below, unless the Market Party demonstrates to the ISO that the questioned conduct is consistent with competitive behavior.

23.3.1.4.6.9.1 The first time the ISO ceases using the fuel type and fuel price information submitted to the ISO's Market Information System along with the Bid(s) for a Generator or an Aggregation to develop Day-Ahead or real-time reference levels for that Generator or Aggregation, it shall do so for 30 days. The 30-day period shall start two business days after the date that the ISO provides written notice of its determination that the application of mitigation is required.

23.3.1.4.6.9.2 Subject to Section 23.3.1.4.6.9.3 below, the second time the ISO ceases using the fuel type and fuel price information submitted to the ISO's Market Information System along with the Bid(s) for a Generator or an Aggregation to develop Day-Ahead or real-time reference levels for that Generator or an Aggregation, it shall do so for 60 days. The 60-day period shall start two business days after the date that the ISO provides written notice of its determination that the application of mitigation is required. Subject to Section 23.3.1.4.6.9.3 below, any subsequent time the ISO ceases using the fuel type and fuel price information submitted to the ISO's Market Information System along with the Bid(s) for a Generator or an Aggregation to develop Day-Ahead or real-time reference levels for that Generator or Aggregation, it shall do so for 120 days. The 120-day period shall start two business days after the date that the ISO provides written notice of its determination that the application of mitigation is required.

23.3.1.4.6.9.3 If the bidders of a Generator or an Aggregation that has previously been mitigated under this Section 23.3.1.4.6.9 becomes and remains continuously eligible to submit fuel type and fuel price information in the Day-Ahead or Real-Time Market (as appropriate) for a period of one year or more, then the ISO shall apply the mitigation measure set forth in Section 23.3.1.4.6.9 of the Mitigation Measures as if the Generator or Aggregation had not previously been subject to the mitigation measure.

23.3.1.4.6.9.4 Market Parties that transfer, sell, assign, or grant to another Market Party the right or ability to Bid a Generator or an Aggregation that is subject to the mitigation measure described in this Section 23.3.1.4.6.9 are required to inform the new Market Party that the Generator or Aggregation has been mitigated under this measure, and to inform the new Market Party of the expected duration of such mitigation.

23.3.1.4.6.9.5 For purposes of this Section 23.3.1.4.6.9, submitted fuel type information shall be considered biased in a Market Party's favor if (a) the Market Party submitted revised fuel type information for a Generator or an Aggregation for at least 100 hours during the previous 90 days, and (b) for at least one hour the fuel type that a Market Party submits for the Generator or Aggregation is not the most economic fuel type available to the Generator or the relevant component(s) of the Aggregation, taking into consideration fuel availability, operating conditions, and relevant regulatory or reliability requirements, and (c) as a result of the change(s) in fuel type, the fuel prices that the ISO uses to develop reference levels for a Generator or an Aggregation exceeded the fuel price that the ISO would have used to develop reference levels for that Generator or Aggregation by greater than the higher of 10% or $0.50/MMBtu, on average, over the previous 90 days. For purposes of calculating the average, only hours in which the Market Party changed the Generator's or Aggregation's fuel type to a more expensive fuel type will be considered. The Day-Ahead and Real-Time Markets shall be considered separately for purposes of this analysis.

23.3.1.4.6.9.6 For purposes of this Section 23.3.1.4.6.9, submitted fuel price information shall be considered biased in a Market Party's favor if (a) the Market Party submitted revised fuel price information for a Generator or an Aggregation for at least 100 hours during the previous 90 days, and (b) the fuel price that the Market Party submitted to the ISO's Market Information System for use in developing reference levels for a Generator or an Aggregation exceeded the greater of the actual fuel price (as substantiated by supplier quotes or invoices) or the ISO's indexed fuel price, by greater than the higher of 10% or $0.50/MMBtu, on average, over the previous 90 days. For purposes of calculating the average, only hours in which the fuel price submitted exceeds the ISO's indexed fuel price will be considered. The Day-Ahead and Real-Time Markets shall be considered separately for purposes of this analysis.

23.3.1.4.6.9.7 The responsibilities of the Market Monitoring Unit that are addressed in Section 23.3.1.4.6.9 of the Mitigation Measures are also addressed in Section 30.4.6.2.3 of the Plan.

23.3.1.4.6.10 In order to adjust (i) Bid-based incremental energy, minimum generation and start-up reference levels, and (ii) LBMP-based incremental energy and minimum generation reference levels to more accurately reflect fuel costs, the ISO may calculate distinct Bid- and LBMP-based reference levels for each fuel type or blend of fuel types that a Generator or an Aggregation is capable of burning, and shall fuel index each of the distinct Bid- or LBMP-based reference levels that it calculates for fuel types that are amenable to fuel indexing. Where a Generator or an Aggregation can draw on multiple natural gas sources that each have distinct, posted, market clearing prices, the ISO may calculate distinct Bid-Based or LBMP-based reference levels for each such available supply source.

23.3.1.4.7 Except as otherwise authorized in accordance with Section 23.3.1.4.6.8 above, Market Parties shall timely report significant changes to the cost components used to develop their Generator's or Aggregation's reference levels to the ISO in order to permit the revised costs to be timely reflected in the Generator or Aggregation reference levels. However, if the ISO uses published index prices to fuel index a Generator's reference level when that Generator or Aggregation is burning a fuel type that is amenable to fuel indexing (which may include a blend of two indexed fuel types), the Market Party is not required to report fuel prices that are less than the published index price that the ISO relies on.

23.3.1.4.8 Reflecting opportunity costs in Reference Levels. The ISO shall use the information available to it to adjust reference levels to reflect appropriate opportunity costs.

23.3.1.4.8.1 Prohibition of duplicative and evasive cost submissions and Bids. Costs that are submitted or Bid as fuel costs shall not also be submitted or Bid as opportunity costs. A cost shall not be submitted or Bid in two parts, as both a fuel costs and an opportunity cost, in order to evade applicable screening thresholds.

Fossil generators shall not submit or Bid fuel costs, including but not limited to balancing costs, as opportunity costs. Withdrawal-Eligible Generators and Aggregations containing Withdrawal Eligible Generators shall not submit or Bid the cost they expect to incur to withdraw Energy as a fuel cost.

If the ISO identifies a potentially duplicative or evasive Bid or cost submission that appears to violate this prohibition, it shall inform the Market Monitoring Unit of the potential Market Violation.

23.3.1.4.8.2 ISO Reporting Obligation. If the ISO did not adjust reference levels to reflect timely (as that term is defined in Section 23.3.1.4.8.9 below) submitted, appropriate opportunity costs, and the ISO's failure to adjust reference levels to reflect such opportunity costs affected market clearing prices or had an impact on guarantee payments that cannot be corrected, then the ISO shall report any market clearing price and uncorrected guarantee payment impacts to FERC staff and to its Market Participants. The ISO is not required to report, or to otherwise act, if no market impact is identified.

23.3.1.4.8.3 Market Parties shall monitor Generator or Aggregation reference levels and shall endeavor to timely (as that term is defined in Section 23.3.1.4.8.9 below) contact the ISO to request an adjustment to a Generator's or an Aggregation's reference level(s) when changes in opportunity costs are expected to impact the Generator's or Aggregation's reference levels.

23.3.1.4.8.4 Screening of opportunity cost submissions. The ISO may use automated processes and/or require manual review of opportunity cost submissions by

Market Parties in order to prevent market clearing prices and guarantee payments from being incorrectly calculated.

23.3.1.4.8.5 Consistent with the rules specified in this Section 23.3.1.4.8 of the Mitigation Measures and the procedures that the ISO develops to implement these rules, Market Parties shall notify the ISO of changes in opportunity costs by (i) submitting revised opportunity cost information to the ISO's Market Information System along with the Generator's or Aggregation's Bid(s), or (ii) by directly contacting the ISO to request a reference level update consistent with ISO procedures, or (iii) by utilizing both of the available notification methods. Revised opportunity cost information that exceeds, or is rejected based upon, the thresholds that the ISO uses to automatically screen opportunity cost information that is submitted to the ISO's Market Information System along with a Generator's or an Aggregation's Bid(s) shall be submitted by directly contacting the ISO to request a reference level update, consistent with ISO procedures.

23.3.1.4.8.6 Following the completion of the ISO's automated and/or manual screening processes, the ISO shall use opportunity cost information that Market Parties or their representatives submit to develop Generator or Aggregation reference levels unless (i) the information submitted is inaccurate, or (ii) the information was not timely submitted, and the Market Party's failure to timely submit the information is not excused by the ISO in accordance with Section 23.3.1.4.8.9 below.

23.3.1.4.8.7 The ISO may not always have sufficient time to complete its screening of proposed opportunity cost changes prior to the relevant Day-Ahead Market day or Real-Time Market hour. *If* opportunity cost information (i) is timely submitted or, where untimely, the submission is excused in accordance with Section 23.3.1.4.8.9 below, and (ii) the opportunity cost information that the Market Party submitted is proven to have been accurate or to have understated the actual cost incurred for that component, and (iii) the Bid(s) were tested using reference levels that reflected outdated opportunity cost information and the Bid(s) were mitigated or a sanction was imposed pursuant to Section 23.4.3 of these Mitigation Measures, *then* the ISO shall (a) re-perform any test(s) that resulted in a sanction being imposed pursuant to Section 23.4.3 of these Mitigation Measures, using the accurate opportunity cost information and use the revised results to calculate the appropriate sanction (if any), and (b) determine if the Bids for the Generator or Aggregation would have failed the relevant conduct test(s) if accurate opportunity cost information had been used to develop reference levels. The ISO shall then restore any original (as-submitted) Bid(s) that would not have failed the relevant conduct test(s) if accurate opportunity cost information had been used to develop the Generator's or Aggregation's reference levels, and use the restored Bid(s) to determine a settlement. Otherwise the ISO shall use the Generator's or Aggregation's correct or corrected reference level(s) to determine a settlement.

23.3.1.4.8.8 The ISO shall publicly post the thresholds it employs to automatically screen opportunity cost information that is submitted to the ISO's Market Information System for inputs that require manual review before they can be permitted to take effect.

23.3.1.4.8.9 For purposes of this Section 23.3.1.4.8, "timely" notice or submission to the Real-Time Market shall mean the submission of opportunity cost information using the methods specified in Section 23.3.1.4.8.5 of these Mitigation Measures prior to market close for the relevant Real-Time Market hour.  For purposes of this Section 23.3.1.4.8, "timely" notice or submission to the Day-Ahead Market shall mean the submission of opportunity cost information using the methods specified in Section 23.3.1.4.8.5 of these Mitigation Measures prior to the close of the Day-Ahead Market.  Market Parties are not expected to submit supporting data with their Bids that include revised opportunity cost information, but are expected to retain a record of how the submitted opportunity cost was determined and other supporting data consistent with the data retention requirements set forth in the Plan, and to be able to produce such information within a reasonable timeframe when asked to do so by the ISO or by its Market Monitoring Unit.

It may not always be possible for a Market Party to timely update a Generator's or an Aggregation's opportunity cost to reflect unexpected real-time changes or events in advance of the first affected market-hour.  Upon a showing of extraordinary circumstances, the ISO may retroactively reflect in Real-Time Market reference levels opportunity cost information that was not timely submitted by a Market Party.  While it should ordinarily be possible for a Market Party to timely submit updated opportunity cost information for use in developing a Generator's or an Aggregation's Day-Ahead Market reference levels, the ISO may retroactively accept and utilize late-submitted Day-Ahead Market opportunity cost information upon a showing of extraordinary circumstances.

## 23.3.2 Material Price Effects or Changes in Guarantee Payments

### 23.3.2.1 Market Impact Thresholds

In order to avoid unnecessary intervention in the ISO Administered Markets, Mitigation Measures shall not be imposed unless conduct identified as specified above (i) causes or contributes to a material change in one or more prices in an ISO Administered Market, or (ii) substantially increases guarantee payments to participants in the New York Electric Market. Initially, the thresholds to be used by the ISO to determine a material price effect or change in guarantee payments shall be:

23.3.2.1.1 an increase of 200 percent or $100 per MWh, whichever is lower, in the hourly Day-Ahead or Real-Time Energy LBMP at any location, or of any other price in an ISO Administered Market; or

23.3.2.1.1.1 for uneconomic production or uneconomic withdrawal, a change (*i.e.*, the absolute value of the difference) of 200 percent or $100 per MWh, whichever is lower, in the hourly Day-Ahead Energy LBMP, Real-Time Energy LBMP, or the Congestion Component of the Day-Ahead LBMP or the Real-Time LBMP at any location. Provided, however, the ISO shall not consider a price change of less than $25 per MWh a material price effect for uneconomic production or uneconomic withdrawal; or

23.3.2.1.2 an increase of 200 percent, or 50 percent for Generators or Aggregations in a Constrained Area in Bid Production Cost guarantee payments to a Market Party for a Generator or an Aggregation for a day; or

23.3.2.1.2.1 for uneconomic production or uneconomic withdrawal, an increase of 200 percent, or 50 percent for Generators in a Constrained Area, in Bid Production

Cost guarantee payments or Day-Ahead Margin Assurance Payments to a Market Party or to an Affiliate for a Generator for a day; or

23.3.2.1.3 for a Constrained Area Generator or Aggregation subject to either a Real-Time Market or Day-Ahead Market conduct threshold, as specified above in Sections 23.3.1.1.1, 23.3.1.2.2.1, or 23.3.1.2.2.3: for all Constrained Hours (as defined in Section 23.3.1.2.2.1 for the Real-Time Market and in Section 23.3.1.2.2.3 for the Day-Ahead Market) for the unit being Bid, a threshold determined in accordance with the formula specified in Section 23.3.1.2.2.1 for the Real-Time Market or Section 23.3.1.2.2.3 for the Day-Ahead Market.

**23.3.2.2 Price Impact Analysis**

23.3.2.2.1 When it has the capability to do so, the ISO shall determine the effect on prices or guarantee payments of questioned conduct through the use of sensitivity analyses performed using the ISO's SCUC, RTC and RTD computer models, and such other computer modeling or analytic methods as the ISO shall deem appropriate following consultation with its Market Monitoring Unit. The responsibilities of the Market Monitoring Unit that are addressed in this section of the Mitigation Measures are also addressed in Section 30.4.6.2.4 of Attachment O.

23.3.2.2.2 Pending development of the capability to use automated market models, the ISO, following consultation with its Market Monitoring Unit, shall determine the effect on prices or guarantee payments of questioned conduct using the best available data and such models and methods as they shall deem appropriate. The responsibilities of the Market Monitoring Unit that are addressed in this section of the Mitigation Measures are also addressed in Section 30.4.6.2.5 of Attachment O.

23.3.2.2.3 The ISO shall implement automated procedures within the SCUC for Constrained Areas, and within RTC for Constrained Areas. Such automated procedures will: (i) determine whether any Day-Ahead or Real-Time Energy Bids, including start-up costs Bids and Minimum Generation Bids but excluding Ancillary Services Bids and Bids that only violate the conduct thresholds specified in Sections 23.3.1.2.1.1.2(b) or 23.3.1.2.2.6(b) of these Mitigation Measures, that have not been adequately justified to the ISO exceed the thresholds for economic withholding specified in Section 23.3.1.2 above; and, if so, (ii) determine whether such Bids would cause material price effects or changes in guarantee payments as specified in Section 23.3.2.1.

23.3.2.2.4 The ISO shall forgo performance of the additional SCUC and RTC passes necessary for automated mitigation of Bids in a given Day-Ahead Market or Real-Time Market if evaluation of unmitigated Bids results in prices at levels at which it is unlikely that the thresholds for Bid mitigation will be triggered.

**23.3.2.3 Section 205 Filings**

The ISO shall make a filing under § 205 with the Commission seeking authorization to apply an appropriate mitigation measure to conduct that departs significantly from the conduct that would be expected under competitive market conditions but does not rise to the thresholds specified in Sections 23.3.1.1 through 23.3.1.3 above if that conduct has a significant effect on market prices or guarantee payments as specified below, unless the ISO determines, from information provided by the Market Party or Parties (which may include a Demand Side

Resource participating in the Operating Reserves or Regulation Service Markets) that would be subject to mitigation, or from other information available to the ISO that the conduct and associated price or guarantee payment effect(s) are attributable to legitimate competitive market forces or incentives.  For purposes of this section, conduct shall be deemed to have an effect on market prices or guarantee payments that is significant if it exceeds one of the following thresholds:

23.3.2.3.1 an increase of 100 percent in the hourly day-ahead or real-time energy LBMP at any location, or of any other price in an ISO Administered Market; or

23.3.2.3.2 an increase of 100 percent in Bid Production Cost guarantee payments to a Market Party for a Generator or an Aggregation for a day, or an increase of 100 percent in any other guarantee payment over the time period used by the ISO to calculate the guarantee payment.

### 23.3.3 Consultation with a Market Party

#### 23.3.3.1 Consultation Process

23.3.3.1.1 *Consultation initiated by the ISO to determine if mitigation is appropriate:* Applies to Market-Party-specific, Aggregation-specific and/or Generator-specific mitigation, but not to mitigation that is applied pursuant to Sections 23.3.1.2.3, 23.3.2.2.3, or 23.5.2 of these mitigation measures.  If through the application of an appropriate index or screen or other monitoring of market conditions, conduct is identified that (i) exceeds an applicable threshold, and (ii) has a material effect, as specified above, on one or more prices or guarantee payments in an ISO Administered Market, the ISO shall, as and to the extent specified in Attachment O or in Section 23.3.3.2 of these Mitigation Measures, contact the Market Party engaging in the identified conduct to request an explanation of the conduct.

23.3.3.1.2 *Consultation initiated by a Market Party when it anticipates that its Generator's or Aggregation's marginal costs or other Bid parameters may exceed the applicable reference level(s) by more than the relevant threshold(s).* If a Market Party anticipates submitting Bids in a market administered by the ISO that will exceed the thresholds specified in Section 23.3.1 above for identifying conduct inconsistent with competition, the Market Party may contact the ISO to provide an explanation of any legitimate basis for any such changes in the Market Party's Bids.

23.3.3.1.3 *Results of consultation process addressing Bids.* If a Market Party's explanation of the reasons for its bidding indicates to the satisfaction of the ISO that the questioned conduct is consistent with competitive behavior, no further action will be taken. A preliminary determination by the ISO shall be provided to the Market Monitoring Unit for its review and comment.

23.3.3.1.4 *Consultation initiated by a Market Party regarding reference levels.* Upon request, the ISO shall consult with a Market Party or its representative with respect to the information and analysis used to determine reference levels under Section 23.3.1.4 for that Market Party's Generator(s) or Aggregation(s). If cost data or other information submitted by a Market Party's Generator(s) or Aggregation(s) indicates to the satisfaction of the ISO that the reference levels for that Market Party should be changed, revised reference levels shall be proposed by the ISO, communicated to the Market Monitoring Unit for its review and comment and, following the ISO's consideration of any recommendations that the Market Monitoring Unit is able to timely provide, communicated to the Market Party, and implemented by the ISO as soon as practicable. Changes to the reference levels addressed pursuant to the terms of this Section 23.3.3.1.4 shall be implemented on a going-forward basis commencing no earlier than the date that the Market Party's consultation request is received. The responsibilities of the Market Monitoring Unit that are addressed in this section of the Mitigation Measures are also addressed in Section 30.4.6.2.6 of Attachment O.

23.3.3.1.5 *Information required to support consultation regarding Bids and reference levels.* Market Parties shall ensure that the information they submit to the ISO, including but not limited to fuel price and fuel type information, is accurate. Except as set forth in Section 23.3.1.4.6.8, the ISO may not retroactively revise a reference level to reflect additional fuel costs if a Market Party or its representative did not timely submit accurate fuel cost information. Unsupported speculation by a Market Party does not present a valid basis for the ISO to determine that Bids that a Market Party submitted are consistent with competitive behavior, or to determine that submitted costs are appropriate for inclusion in the ISO's development of reference levels. Consistent with Sections 30.6.2.2 and 30.6.3.2 of the Plan, the Market Party shall retain the documents and information supporting its Bids and the costs it proposes to include in reference levels.

**23.3.3.2 Consultation Requirements**

23.3.3.2.1 The ISO shall make a reasonable attempt to contact and consult with the relevant Market Party about the Market Party's reference level(s) before imposing conduct and impact mitigation, other than conduct and impact mitigation imposed through the automated procedures described in Section 23.3.2.2.3 of these Mitigation Measures. The ISO shall keep records documenting its efforts to contact and consult with the Market Party.

23.3.3.2.2 Consultation regarding both real-time guarantee payment mitigation and mitigation of Generators and Aggregations committed outside the economic evaluation process in the Day-Ahead or Real-Time Markets to protect or preserve system reliability in accordance with Section 23.3.1.2.3 of these Mitigation Measures is addressed in Section 23.3.3.3, below. Consultation regarding Day-Ahead guarantee payment mitigation of Generators and Aggregations, other than mitigation imposed through the automated procedures described in Section 23.3.2.2.3 of these Mitigation Measures, shall be conducted in accordance with Sections 23.3.3.1 and 23.3.3.2 of these Mitigation Measures.

**23.3.3.3 Consultation Rules for Real-Time Guarantee Payment Mitigation**

**23.3.3.3.1 Real-Time Guarantee Payment Consultation Process**

23.3.3.3.1.1 For real-time guarantee payment mitigation determined pursuant to Sections 23.3.1.2.1 or 23.3.1.2.2, and 23.3.2.1.2 of these Mitigation Measures, the ISO shall electronically post settlement results informing Market Parties of Bid(s) that failed the real-time guarantee payment impact test. The settlement results posting shall include the adjustment to the guarantee payment and the mitigated Bid(s). The initial posting of settlement results ordinarily occurs two days after the relevant real-time market day.

23.3.3.3.1.2 For real-time guarantee payment mitigation determined pursuant to Sections 23.3.1.2.1 or 23.3.1.2.2, and 23.3.2.1.2 of these Mitigation Measures, no more than two business days after new or revised real-time guarantee payment impact test settlement results are posted, the ISO will send an e-mail or other notification to all potentially impacted Market Parties that comply with Section 23.3.3.3.1.2.2 of these Mitigation Measures.

23.3.3.3.1.2.1 Although the ISO is authorized to take up to two business days to provide notification to all potentially impacted Market Parties that comply with Section 23.3.3.3.1.2.2 of these Mitigation Measures, the ISO shall undertake reasonable efforts to provide notification to such Market Parties within one business day after new or revised real-time guarantee payment impact test settlement results are posted.

23.3.3.3.1.2.2 A Market Party that desires to receive notification from the ISO must provide one e-mail address to the ISO for real-time guarantee payment mitigation notices. Each Market Party is responsible for maintaining and monitoring the e-mail address it provides, and informing the ISO of any change(s) to that e-mail address in order to continue to receive e-mail notification. E-mail will be the ISOs primary method of providing notice to Market Parties.

23.3.3.3.1.2.3 Regardless of whether a Market Party chooses to receive notification from the ISO, each Market Party is responsible for reviewing its posted real-time guarantee payment impact test settlement results and for contacting the ISO to request a consultation if and when appropriate.

23.3.3.3.1.3 The following notice rules apply to guarantee payment mitigation determined pursuant to Section 23.3.1.2.3 of these Mitigation Measures.

23.3.3.3.1.3.1 For mitigation of a Generator’s or an Aggregation’s Minimum Generation Bid, Start-Up Bid or Incremental Energy Bid resulting from its DARU or SRE commitment, the ISO shall send an e-mail or other notification to potentially impacted Market Parties that comply with Section 23.3.3.3.1.2.2 of these Mitigation Measures within ten business days after the relevant market day, and shall undertake reasonable efforts to provide notification to such Market Parties within two business days after the relevant market day. The e-mail shall identify the date of the proposed mitigation and the Bid(s) or Bid components that the NYISO proposes to mitigate for all or part of the relevant market day.

As soon as it is able to do so, the NYISO will commence electronically posting settlement results informing Market Parties of Bid(s) that failed the Section 23.3.1.2.3 test and sending an e-mail or other notification to potentially impacted Market Parties that comply with Section 23.3.3.3.1.2.2 of these Mitigation Measures. The settlement results posting shall include the mitigated bid(s). The posting of settlement results ordinarily occurs two days after the relevant real-time market day.

23.3.3.3.1.3.2 For mitigation of a Generator's or an Aggregation's Minimum Generation Bid, Start-Up Bid or Incremental Energy Bid resulting from an Out-of-Merit dispatch above the Generator's DARU or SRE commitment, the ISO shall send an e-mail or other notification to potentially impacted Market Parties that comply with Section 23.3.3.3.1.2.2 of these Mitigation Measures within 10 business days after the relevant market day. The e-mail shall identify the date of the proposed mitigation and the bid(s) or bid components that the NYISO proposes to mitigate for all or part of the relevant market day.

23.3.3.3.1.3.3 For mitigation based on a Generator's minimum run time, start-up time, minimum down time, minimum generation MWs, or maximum number of stops per day, or for mitigation based on temporal or operating parameters related to the withdrawal and injection of Energy by Withdrawal-Eligible Generators or

Aggregations containing Withdrawal-Eligible Generator(s), the ISO shall send an e-mail or other notification to potentially impacted Market Parties that comply with Section 23.3.3.3.1.2.2 of these Mitigation Measures within 10 business days after the relevant market day. The e-mail shall identify the date of the proposed mitigation and the conduct failing Bid(s) or Bid components.

23.3.3.3.1.4 Market Parties that want to consult with the ISO regarding real-time guarantee payment impact test results, or regarding mitigation applied in accordance with Section 23.3.1.2.3 of these Mitigation Measures, for a particular market day must submit a written request to initiate the consultation process that specifies the market day and Bid(s) for which consultation is being requested (for purposes of this Section 23.3.3.3.1, a "Consultation Request").

23.3.3.3.1.4.1 Consultation Requests must be received by the ISO's customer relations department within 15 business days after the ISO (i) posts new or revised real-time guarantee payment impact test settlement results, or (ii) either posts new or revised real-time guarantee payment impact test settlement results or sends an e-mail informing a Market Party of the results of a test performed pursuant to Section 23.3.1.2.3 of these Mitigation Measures for the relevant market day. Consultation Requests received outside the 15 business day period shall be rejected by the ISO.

23.3.3.3.1.4.2 The ISO may send more than one notice informing a Market Party of the same instance of mitigation. Notices that identify real-time guarantee payment impact test or Section 23.3.1.2.3 mitigation settlement results that are not new (for which the Market Party has already received a notice from the ISO) and that do not reflect revised mitigation (for which the dollar impact of the real-time guarantee payment mitigation has not changed) shall not present an additional opportunity, or temporally extend the opportunity, for the Market Party to initiate consultation.

23.3.3.3.1.4.3 If consultation was timely requested and completed addressing a particular set of real-time guarantee payment impact test results, or addressing a particular instance of mitigation applied in accordance with Section 23.3.1.2.3 of these Mitigation Measures, a Market Party may not again request consultation regarding the same real-time guarantee payment impact test results, or the same application of Section 23.3.1.2.3 mitigation, unless revised settlement results, that are not due to the previously completed consultation and that change the dollar impact of the relevant instance of mitigation, are posted.

23.3.3.3.1.5 The Consultation Request may include: (i) an explanation of the reason(s) why the Market Party believes some or all of the reference levels used by the ISO for the market day(s) in question are inappropriate, or why some or all of the Market Party's Bids on the market day(s) in question were otherwise consistent with competitive behavior; and (ii) supporting documents, data and other relevant information (collectively, for purposes of this Section 23.3.3.3.1, "Data"), including proof of any cost(s) claimed.

23.3.3.3.1.5.1 Market Parties shall ensure that the information they submit to the ISO, including but not limited to fuel price and fuel type information, is accurate. Except as set forth in Section 23.3.1.4.6.8, the ISO may not retroactively revise a reference level to reflect additional fuel costs if a Market Party or its representative did not timely submit accurate fuel cost information.  Except as set forth in Section 23.3.1.4.8.9, the ISO may not retroactively revise a reference level to reflect additional opportunity costs if a Market Party or its representative did not timely submit accurate opportunity cost information.

23.3.3.3.1.6 If the Market Party is not able to provide (i) an explanation of the reason(s) why the Market Party believes some or all of the reference levels used by the ISO for the market day(s) in question are inappropriate, or why some or all of the Market Party's Bids on the market day(s) in question were otherwise consistent with competitive behavior, or (ii) all supporting Data, at the time a Consultation Request is submitted, the Market Party should specifically identify any additional explanation or Data it intends to submit in support of its Consultation Request and provide an estimate of the date by which it will provide the additional explanation or Data to the ISO.

23.3.3.3.1.7 Following the submission of a Consultation Request that satisfies the timing and Bid identification requirements of Section 23.3.3.3.1.4, above, consultation shall be performed in accordance with Section 23.3.3.1 of these Mitigation Measures, as supplemented by the following rules:

23.3.3.3.1.7.1 The ISO shall consult with the Market Party to determine whether the information available to the ISO presents an appropriate basis for (i) modifying the reference levels used to perform real-time guarantee payment mitigation for the market day in question, or (ii) determining that the Market Party's Bid(s) on the market day in question were consistent with competitive behavior.  The ISO shall only modify the reference levels used to perform mitigation, or determine that the Market Party's Bid(s) on the market day that is the subject of the Consultation Request were consistent with competitive behavior, if the ISO has in its possession Data that is sufficient to support such a decision.

23.3.3.3.1.7.2 A preliminary determination by the ISO shall be provided to the Market Monitoring Unit for its review and comment, and the ISO shall consider the Market Monitoring Unit's recommendations in reaching its decision. The ISO shall inform the Market Party of its decision, in writing, as soon as reasonably practicable, but in no event later than (i) 50 business days after the new or revised real-time guarantee payment impact test settlement results for the relevant market day were posted, or (ii) 50 business days after the earlier of the posting of new or revised Section 23.3.1.2.3 mitigation settlement results for the relevant market day, or the issuance of an e-mail in accordance with Section 23.3.3.3.1.3, above. If the ISO does not affirmatively determine that it is appropriate to modify the Bid(s) that are the subject of the Consultation Request within 50 business days, the Bid(s) shall remain mitigated. The responsibilities of the Market Monitoring Unit that are addressed in this section of the Mitigation Measures are also addressed in Section 30.4.6.2.7 of Attachment O.

23.3.3.3.1.7.3 The ISO may, as soon as practicable, but at any time within the consultation period, request Data from the Market Party. The Market Party is expected to undertake all reasonable efforts to provide the requested Data as promptly as possible, to inform the ISO of the date by which it expects to provide requested Data, and to promptly inform the ISO if the Market Party does not intend to, or cannot, provide Data that has been requested by the ISO.

23.3.3.3.1.8 This Section 23.3.3.3.1 addresses Consultation Requests. It is not intended to limit, alter or modify a Market Party's ability to submit or proceed with a billing dispute pursuant to Section 7.4 of the ISO Services Tariff or Section 2.7.4.1 of the ISO OATT.

**23.3.3.3.2 Revising Reference Levels of Certain Generators and Aggregations Committed Out-of-Merit or via Supplemental Resource Evaluation for Conducting Real-Time Guarantee Payment Conduct and Impact Tests and Applying Mitigation in Accordance with Section 23.3.1.2.3 of these Mitigation Measures**

23.3.3.3.2.1 Consistent with and subject to all of the requirements of Section 23.3.3.3.1 of these Mitigation Measures, Generators and Aggregations that (i) are committed Out-of-Merit or via a Supplemental Resource Evaluation after the DAM has posted, and (ii) for which the NYISO has posted real-time guarantee payment impact test settlement results, or identified possible mitigation under Section 23.3.1.2.3 of these Mitigation Measures may contact the ISO within 15 business days after new or revised impact test settlement results are posted, or possible mitigation under Section 23.3.1.2.3 of these Mitigation Measures is identified, to request that the reference levels used to perform the testing and mitigation be adjusted to include any of the following verifiable costs:

23.3.3.3.2.1.1 procuring fuel at prices that exceed the index prices used to calculate the Generator's or Aggregation's reference level;

23.3.3.3.2.1.2 burning a type of fuel or blend of fuels that is not reflected in the Generator's or Aggregation's reference level;

23.3.3.3.2.1.3 permitted gas balancing charges;

23.3.3.3.2.1.4 compliance with operational flow orders;

23.3.3.3.2.1.5 purchasing additional emissions allowances that are necessary to satisfy the Generator's or Aggregation's Supplemental Resource Evaluation or Out-of-Merit schedule; and

23.3.3.3.2.1.6 demonstrated opportunity costs that differ from the opportunity cost used in calculating the Generator's or Aggregation's reference level.

23.3.3.3.2.2 The six categories of verifiable costs specified above shall be used to modify the requesting Generator's or Aggregation's reference level(s) subject to the following prerequisites:

23.3.3.3.2.2.1 the Generator or Aggregation must specifically and accurately identify and document the extraordinary costs it has incurred to operate during the hours of its Supplemental Resource Evaluation or Out-of-Merit commitment; and

23.3.3.3.2.2.2 the costs must not already be reflected in the Generator's or Aggregation's reference levels or be recovered from the ISO through other means.

As soon as practicable after the Market Party demonstrates to the ISO's reasonable satisfaction that one or more of the five categories of extraordinary costs have been incurred, but in no event later than the deadline set forth in Section 23.3.3.3.1.7.2 of these Mitigation Measures, the ISO shall adjust the affected Generator's or Aggregation's reference levels and re-perform the real-time guarantee payment conduct and impact tests, or the Section 23.3.1.2.3 test, as appropriate, for the affected day. Only the reference levels used to perform real-time guarantee payment mitigation and/or mitigation pursuant to Section 23.3.1.2.3 of these Mitigation Measures, will be adjusted.

23.3.3.3.2.3 If, at some point prior to the issuance of a Close-Out Settlement for the relevant service month, the ISO or the Commission determine that some or all of the costs claimed by the Market Party during the consultation process described above were not, in fact, incurred over the course of the Out-of-Merit or Supplemental Resource Evaluation commitment, or were recovered from the ISO through other means, the ISO shall re-perform the appropriate test(s) using reference levels that reflect the verifiable costs that the Generator or Aggregation incurred and shall apply mitigation if the Generator's or Aggregation's Bids fail conduct and impact, or the Section 23.3.1.2.3 test, at the corrected reference levels.

23.3.3.3.2.4 Generators and Aggregations may contact the ISO to request the inclusion of costs other than the six types identified above in their reference levels. The ISO shall consider such requests in accordance with Sections 23.3.1.4, or 23.3.3.3.1 of these Mitigation Measures, as appropriate.

23.4.5.3 An Installed Capacity Supplier's (except for a Distributed Energy Resource and DER Aggregations) Going-Forward Costs for an ICAP Spot Market Auction shall be determined upon the request of the Responsible Market Party for that Installed Capacity Supplier. The Going-Forward Costs shall be determined by the ISO after consultation with the Responsible Market Party, provided such consultation is requested by the Responsible Market Party not later than 50 business days prior to the deadline for offers to sell Unforced Capacity in such auction, and provided such request is supported by a submission showing the Installed Capacity Supplier's relevant costs in accordance with specifications provided by the ISO. Such submission shall show (1) the nature, amount and determination of any claimed Going-Forward Cost, and (2) that the cost would be avoided if the Installed Capacity Supplier is taken out of service or retired, as applicable. If the foregoing requirements are met, the ISO shall determine the level of the Installed Capacity Supplier's Going-Forward Costs and shall seasonally adjust such costs not later than 7 days prior to the deadline for submitting offers to sell Unforced Capacity in such auction. A Responsible Market Party shall request an updated determination of an Installed Capacity Supplier's Going-Forward Costs not less often than annually, in the absence of which request the Installed Capacity Supplier's offer cap shall revert to the UCAP Offer Reference Level. An updated determination of Going-Forward Costs may be undertaken by the ISO at any time on its own initiative after consulting with the Responsible Market Party. Any redetermination of an Installed Capacity Supplier's Going-Forward Costs shall conform to the consultation and determination schedule specified in this paragraph.  The costs that an Installed Capacity Supplier would avoid as a result of retiring should only be included in its Going-Forward Costs if the owner or operator of that Installed Capacity Supplier actually plans to mothball or retire it if the Installed Capacity revenues it receives are not sufficient to cover those costs.

**23.4.5.6 Audit, Review, and Penalties for Physical Withholding to Increase Market-Clearing Prices; Alignment with both Short-Term Reliability and Transfer of Deliverability Rights Processes**

**23.4.5.6.1 Audit and Review of Proposals or Decisions to Remove or Derate Installed Capacity from a Mitigated Capacity Zone**

Any proposal or decision by a Market Participant to retire or otherwise remove an Installed Capacity Supplier (except as specified in 23.4.5.6.1.1) from a Mitigated Capacity Zone Unforced Capacity market, or to de-rate the amount of Installed Capacity available from such supplier, may be subject to audit and review by the ISO if the ISO determines that such action could reasonably be expected to affect Market-Clearing Prices in one or more ICAP Spot Market Auctions for a Mitigated Capacity Zone in which the Resource(s) that is the subject of the proposal or decision is located, subsequent to such action; provided, however, no audit and review shall be necessary if the Installed Capacity Supplier is a Generator that is being retired or removed from a Mitigated Capacity Zone as the result of a Forced Outage that began on or after May 1, 2015 that was determined by the ISO to be a Catastrophic Failure.

The ISO's audit or review of any proposal or decision by a Market Participant to retire or otherwise remove an Installed Capacity Supplier from a Mitigated Capacity Zone Unforced Capacity market, or to de-rate the amount of Installed Capacity available from such supplier, (including a review the ISO conducts at the request of a Market Participant before it submits a proposal or makes a decision or a review the NYISO conducts in conjunction with the Short-Term Reliability Process) will consider the rationale offered by the Market Participant to support its proposal or decision. Such an audit or review shall assess whether the Market Participant's proposal or decision has a legitimate economic justification, which may include the economics of complying with regulatory requirements, or is based on an effort to withhold Installed Capacity physically in order to affect prices. The ISO's audit or review is conducted based on the expectation that a Market Participant's decision to retire or otherwise remove an Installed Capacity Supplier from a Mitigated Capacity Zone, or to de-rate the amount of Installed Capacity available from such supplier, accounts for the information available to that Market Participant at (or before) the time its decision is made on the "decision date" (see, e.g., Sections 23.4.5.6.4.2.1 and 23.4.5.6.4.2.2.1 below) specified by the Market Participant or the CRIS Transfer Confirmation Date for CRIS Transfers described below in Section 23.4.5.6.5. A Market Participant may offer publicly available information and other information available to the Market Participant to support its proposal or decision.

The ISO shall provide the preliminary results of its audit or review to the Market Monitoring Unit for its review and comment. The responsibilities of the Market Monitoring Unit that are addressed in this section of the Mitigation Measures are also addressed in Section 30.4.6.2.10 of Attachment O to this Services Tariff.

23.4.5.6.1.1 A proposal or decision to retire or otherwise remove a (a) Demand Side Resource except one that is (i) a Generator that is electrically located in the NYCA or (ii) a facility, electrically located in the NYCA, comprising two or more resource types one of which is a Generator, behind a single point of interconnection with an Injection Limit of less than 20 MW, and in the case of (i) and (ii) that at any time participated directly in any ISO Administered Market or (b) a DER Aggregation from the Installed Capacity market will not be subject to audit and review. Notwithstanding the foregoing, members of a DER Aggregation otherwise subject to audit or review are not excluded by the preceding sentence.

**23.4.5.6.2 Audit and Review of the Reclassification of a Generator in a Mitigated Capacity Zone From a Forced Outage to an ICAP Ineligible Forced Outage**

This Section 23.4.5.6.2 shall apply to a Market Participant whose Installed Capacity Supplier is a Generator that began a Forced Outage on or after May 1, 2015.

23.4.5.6.2.1 Any reclassification of an Installed Capacity Supplier that is a Generator in a Mitigated Capacity Zone from a Forced Outage to an ICAP Ineligible Forced Outage by a Market Participant or otherwise, pursuant to the terms of Section 5.18.2.1 of this Services Tariff, may be subject to audit and review by the ISO if the ISO determines that such reclassification could reasonably be expected to affect the Market-Clearing Price in one or more ICAP Spot Market Auctions for a Mitigated Capacity Zone in which the Generator(s) that is the subject of the reclassification is located, subsequent to such action; provided, however, if the Market Participant's Generator experienced the Forced Outage as a result of a Catastrophic Failure, the reclassification of a Generator in a Mitigated Capacity Zone from a Forced Outage to an ICAP Ineligible Forced Outage shall not be subject to audit and review pursuant to this Section 23.4.5.6.2.

The audit and review pursuant to the above paragraph shall assess whether the reclassification of the Generator in a Mitigated Capacity Zone from a Forced Outage to an ICAP Ineligible Forced Outage had a legitimate economic justification or is based on an effort to withhold Installed Capacity physically in order to affect prices. A Market Participant may offer publicly available information and other information available to the Market Participant to justify the reclassification.

The ISO shall provide the preliminary results of its audit or review to the Market Monitoring Unit for its review and comment. The responsibilities of the

Market Monitoring Unit that are addressed in this section of the Mitigation Measures are also addressed in Section 30.4.6.2.10 of Attachment O to this Services Tariff.

23.4.5.6.2.2 The audit and review pursuant to Section 23.4.5.6.2.1 shall be deferred by the ISO beyond the time period established in ISO Procedures for the audit and review of a reclassification of a Generator from a Forced Outage to an ICAP Ineligible Forced Outage if the Generator was in a Forced Outage for at least 180 days before the reclassification and one or more Exceptional Circumstances delayed the acquisition of data necessary for the ISO's audit and review.

The ISO shall conduct the audit and review after its receipt of data that it determines is necessary for the audit and review; provided, however, if, at the time the ISO acquires the necessary data, the Market Participant has Commenced Repair of the Generator, or the Generator is determined by the ISO to have had a Catastrophic Failure, the Market Participant shall not be subject to an audit and review pursuant to Section 23.4.5.6.2.1 of this Services Tariff. A Generator that Commenced Repair while in an ICAP Ineligible Forced Outage but that ceased or unreasonably delayed that repair shall be subject to audit and review by the ISO pursuant to Section 23.4.5.6.2.1 of this Services Tariff.

The ISO shall provide the preliminary results of its audit or review to the Market Monitoring Unit for its review and comment. The responsibilities of the Market Monitoring Unit that are addressed in this section of the Mitigation Measures are also addressed in Section 30.4.6.2.10 of Attachment O to this Service Tariff.

23.4.5.6.2.3 The audit and review of the removal of a Generator from a Forced Outage to an ICAP Ineligible Forced Outage, and the determinations of Catastrophic Failure and Exceptional Circumstances, will be pursuant to specific timelines established in ISO Procedures.

23.4.5.6.2.4 The audit and review pursuant to Sections 23.4.5.6.2.1, and 23.4.5.6.2.2 shall be conducted to determine whether the decision not to repair a Generator had a legitimate economic justification, consistent with competitive behavior; that is, whether the cost of repair, including the risk-adjusted cost of capital, could not reasonably be expected to be recouped over the reasonably anticipated remaining life of the Generator. The elements of such audit and review may include, as appropriate, the historical revenue and maintenance cost data for the purpose of the baseline, the duration of the repair, the costs including, but not limited to, capital expenditures necessary to comply with federal or state environmental, safety or reliability requirements that must be met in order to operate the Generator, the anticipated capacity, energy and ancillary services revenues following the repair, the projected costs of operating the Generator following the repair, any benefits that would be foregone from using the site for a purpose other than as the existing Generator (e.g., repowering), and other relevant data.

The criteria for the audit and review provided in this Services Tariff Section 23.4.5.6.2.4 may be incorporated, as appropriate, in an audit and review required to be conducted pursuant to other provisions in this Services Tariff Section 23.4.

23.4.5.6.2.5 For a requesting Market Participant, a determination that the Market Participant has experienced Exceptional Circumstances shall be made by the ISO by the 160th day of the Generator's Forced Outage. The ISO shall use reasonable efforts to issue a determination that a Market Participant has experienced Exceptional Circumstances after it has Commenced Repair and requests reclassification to an ICAP Ineligible Force Outage by the 40th day after the ISO's receipt of data necessary to conduct the analysis.

For a requesting Market Participant, a determination that a Generator has experienced a Catastrophic Failure shall be made by the ISO by the 160th day of the Forced Outage. If the ISO has determined that Exceptional Circumstances will delay the submission of data necessary for the ISO to perform an audit and review pursuant to Section 23.4.5.6.2.1 or 23.4.5.6.2, the ISO shall use reasonable efforts to issue a determination that the Generator has experienced a Catastrophic Failure by the 40th day after receipt of data necessary to conduct the analysis.

**23.4.5.6.3 Penalties for Withholding Installed Capacity Physically In Order To Affect Prices**

If the ISO determines that either: i) pursuant to Section 23.4.5.6.1, the proposal or decision by a Market Participant to retire or otherwise remove an Installed Capacity Supplier from a Mitigated Capacity Zone, or to de-rate the amount of Installed Capacity available from such supplier, or ii) pursuant to Section 23.4.5.6.2, the ISO determines that the reclassification of an Installed Capacity Supplier that is a Generator from a Forced Outage to an ICAP Ineligible Forced Outage constitutes physical withholding, and would increase the Market-Clearing Price in one or more ICAP Spot Market Auctions for a Mitigated Capacity Zone by five percent or more, provided such increase is at least $.50/kilowatt-month, for each such violation of the above requirements the Market Participant shall be assessed an amount equal to the product of (A) 1.5 times the difference between the Market Clearing Price for the Mitigated Capacity Zone in the ICAP Spot Market Auctions with and without the inclusion of the withheld UCAP in those auctions, and (B) the total of (1) the number of megawatts withheld in the month and (2) all other megawatts of Installed Capacity in the Mitigated Capacity Zone under common Control with such withheld megawatts in the month. The requirement to pay such amounts shall continue until the Market Participant demonstrates that the removal from service, retirement, or de-rate, as described in Section 23.4.5.6.1, or reclassification as described in Section 23.4.5.6.2 is justified by economic considerations other than the effect of such action on Market-Clearing Prices in the ICAP Spot Market Auctions for the Mitigated Capacity Zone. The ISO will distribute any amount recovered in accordance with the foregoing provisions among the LSEs serving Loads in the Mitigated Capacity Zone(s) wherein the Market-Clearing Price was affected for the month corresponding to the penalty accordance with ISO Procedures.

**23.4.5.6.4 Aligning Physical Withholding Audits and Reviews with the Short-Term Reliability Process**

The rules in this Section 23.4.5.6.4 apply to Market Participants that initiate the Short-Term Reliability Process that is set forth in Attachment FF to the ISO OATT by submitting a Generator Deactivation Notice for a Generator. They provide an opportunity for such a Market Participant to receive a final physical withholding determination from the ISO before the Market Participant deactivates the Generator. Nothing in Attachment FF to the OATT or in this Section 23.4.5.6.4 of the ISO Services Tariff should be read as limiting the ISO’s authority to impose a physical withholding penalty on a Generator that deactivates. Capitalized terms that appear in this Section 23.4.5.6.4 that are not defined in Article 2 to the ISO Services Tariff are defined in Section 38.1 of Attachment FF to the ISO OATT.

23.4.5.6.4.1 If the ISO has issued notice to the Market Participant or Generator Owner (as that term is defined in Section 38.1 of the ISO OATT) in accordance with Section 38.7.4 of Attachment FF to the ISO OATT that it has received all of the data and information it requires to perform its duties under both the Short-Term Reliability Process that is set forth in Attachment FF to the ISO OATT and Section 23 of the ISO Services Tariff, then the ISO shall complete a physical withholding review of the proposed deactivation, if needed, in accordance with Section 23.4.5.6 of the ISO Services Tariff and issue a final physical withholding determination to the Market Participant in accordance with the process set forth in Sections 23.4.5.6.4.2.1 or 23.4.5.6.4.2.2 of the ISO Services Tariff.

If the ISO has not issued a notice to the Market Participant or Generator Owner in accordance with Section 38.7.4 of Attachment FF to the ISO OATT that it has received all of the data and information it requires to perform its duties under both Attachment FF to the ISO OATT and Section 23 of the ISO Services Tariff, then the ISO is not required to issue a final physical withholding determination to the Market Participant for the Generator prior to the Generator's deactivation.

**23.4.5.6.4.2 Aligning Issuance of Final Physical Withholding Determination with the Short-Term Reliability Process**

23.4.5.6.4.2.1 **Based on deactivation date.** At least ninety days before the date the Generator determines it will timely (consistent with Section 38.14.1 of Attachment FF to the ISO OATT) deactivate, the Market Participant (which is also a Market Party) may notify the ISO in writing of the updated deactivation date and request that the ISO issue a final physical withholding determination to the Market Participant, which shall be conducted by the ISO in accordance with Section 23.4.5.6.1 above. The ISO shall issue its final determination at least 60 days before the updated deactivation date specified in the Market Participant's written notice. For purposes of the ISO's audit or review to issue a final physical withholding determination, conducted in accordance with Section 23.4.5.6.1 above, the date on which the Generator is deactivated is the "decision date," so long as it falls within the 16 day window specified below.

Exception: The earliest date the ISO shall be required to issue a final physical withholding determination is 90 days after the Short-Term Assessment of Reliability Start Date.

The ISO's final physical withholding determination shall only be valid if the Generator becomes Retired or enters into a Mothball Outage within a window that starts five days before the date specified in the Market Participant's notice to the ISO and concludes ten days after the date specified in the Market Participant's notice to the ISO, unless the conditions of described below in Section 23.4.5.6.4.2.2 are met.

23.4.5.6.4.2.2 **Based on date of irrevocable action or inaction.** If the Market Participant identifies and the ISO, in consultation with the Market Monitoring Unit, agrees that there is a point in the process of deactivating a Generator after which the deactivation process will become, essentially and practicably, irreversible, then the ISO shall inform the Market Participant in writing of the first such act, decision not to act, or event that the ISO agrees will have irreversible consequences.

The responsibilities of the Market Monitoring Unit that are addressed in this section of the Mitigation Measures are also addressed in Section 30.4.6.2.12 of Attachment O to this Services Tariff.

23.4.5.6.4.2.2.1 At least ninety days before the date the irreversible action, inaction or event specified by the ISO in its notice to the Market Participant will be taken, occur or come to pass (the "trigger date"), the Market Participant may notify the ISO in writing of the trigger date and request that the ISO issue a final physical withholding determination to the Market Participant. The Market Participant's notice must explain why the date it selected is the appropriate trigger date. If the ISO determines that the trigger date specified by the Market Participant is reasonable, then the ISO shall issue its final physical withholding determination at least 60 days before the trigger date specified in the Market Participant's notice. For purposes of the ISO's audit or review under this subsection conducted in accordance with Section 23.4.5.6.1 above, the trigger date is the "decision date."

Exception: The earliest date the ISO shall be required to issue a final physical withholding determination is 90 days after the Short-Term Assessment of Reliability Start Date.

23.4.5.6.4.2.2.2 If the ISO determines that the trigger date the Market Participant specified is not reasonable, then the ISO shall promptly notify the Market Participant of its determination and the reasons therefor in writing. The ISO is not required to issue a final physical withholding determination unless the Market Party provides additional information within two business days of the issuance of the ISO's written determination that causes the ISO to change its decision.

23.4.5.6.4.2.2.3 The ISO's final physical withholding determination shall only be valid if (a) the specified irreversible action, inaction or event is taken or occurs within a window that starts five days before the trigger date specified in the Market Participant's notice to the ISO and concludes ten days after the trigger date specified in the Market Participant's notice to the ISO, and (b) the Generator timely (consistent with Section 38.14.1 of Attachment FF to the ISO OATT) enters into a Mothball Outage or becomes Retired. Except where the ISO possesses contrary information, the ISO shall accept the Market Participant's reasonable assessment of the date by which an irrevocable failure to act occurs.

23.4.5.6.4.3 The Market Participant shall promptly send a written notice to the ISO rescinding a written notice that it previously submitted under Sections 23.4.5.6.4.2.1 or 23.4.5.6.4.2.2.1 of the ISO Services Tariff if it determines that the deactivation date or trigger date it specified in its written notice to the ISO is no longer accurate.

### 23.4.5.6.5 Aligning Physical Withholding Audits and Reviews with the Transfer of Deliverability Rights Process for Same Location CRIS Transfers

The rules in this Section 23.4.5.6.5 apply to a Market Participant or Generator Owner that initiate a transfer of deliverability rights request as set forth in Attachment S to the ISO OATT by submitting a CRIS transfer request notice for a same location transfer where the Market Participant/Generator Owner does not intend to initiate the Short Term Reliability Process that is set forth in Attachment FF to the ISO OATT. They provide an opportunity for such a Market Participant to receive a final physical withholding determination from the ISO before the transfer of deliverability rights is confirmed under the rules set forth in Sections 25.9.4 and 25.9.5 of Attachment S to the ISO OATT. Nothing in Attachment S to the OATT or in this Section

23.4.5.6.5 of the ISO Services Tariff should be read as limiting the ISO's authority to impose a physical withholding penalty on a Generator that transfers its CRIS to a new facility at the same location.

23.4.5.6.5.1 If the ISO has issued notice to the Market Participant or Generator Owner in accordance with Section 23.4.5.6.5.3 of this Attachment H that it has received all of the data and information it requires to perform its duties under Section 23 of the ISO Services Tariff, then the ISO shall complete a physical withholding review of the proposed transfer of deliverability rights, if needed, in accordance with Section 23.4.5.6 of this Attachment H and issue a final physical withholding determination to the Market Participant in accordance with the process set forth in Section 23.4.5.6.5.5 of this Attachment H.

23.4.5.6.5.2 If the ISO has not issued a notice to the Market Participant or Generator Owner in accordance with Section 23.4.5.6.5.3 of this Attachment H to the ISO OATT that it has received all of the data and information it requires to perform its duties under Section 23 of the ISO Services Tariff, then the ISO is not required to issue a final physical withholding determination to the Market Participant prior to the CRIS Transfer Confirmation Date, as defined in Section 23.2.1 of this Attachment H, and as set forth in Section 25.9.4 and 25.9.5 of Attachment S to the ISO OATT.

23.4.5.6.5.3 **ISO Notification to Market Participants or Generator Owners.** The ISO shall notify the Market Participant or the Generator Owner, in writing, when the ISO has received all of the data and information it requires as set forth in

Section 23.4.5.6.5.4 of this Attachment H to perform its duties under Sections 23.4.5.6.5 of this Attachment H.

The notice that the ISO provides to Market Participant (which is also a Market Party) or to the Generator Owner that it has received all of the data and information it requires to perform its obligations under this Attachment H does not absolve the Market Party or the Generator Owner of its affirmative and continuing obligation under Section 23.4.5.6.5.5 of this Attachment H to supplement and update information and data it has submitted to the ISO when a material change in facts or circumstances occurs that makes the previously submitted information insufficient or inaccurate.

The notice that the ISO provides to Market Participant or Generator Owner that it has received all of the data and information it requires to perform its obligations under Sections 23.4.5.6.5 of this Attachment H does not bar the ISO from asking additional questions of the Market Participant or the Generator Owner, nor does it excuse the Market Participant or the Generator Owner from its continuing obligation to promptly respond to ISO requests for information or data pursuant to ISO Tariffs.

23.4.5.6.5.4 **Information Requirements**

23.4.5.6.5.4.1 The Market Participant or the Generator Owner (also known as the "transferor facility" as defined in Attachment S to the ISO OATT) shall be responsible for providing the ISO with any information that the ISO determines it requires, in accordance with ISO Procedures, in order to assess market impacts under Section 23.4.5.6.1 of this Attachment H.

23.4.5.6.5.4.2 The Second Party (also known as the "transferee facility" as defined in Attachment S to the ISO OATT) shall be responsible for providing the ISO with any information that the ISO determines it requires, in accordance with ISO Procedures, in order to assess market impacts under Section 23.4.5.6.1 of this Attachment H.

23.4.5.6.5.4.3 The ISO shall review, verify and/or validate to the extent necessary the information provided in accordance with Sections 23.4.5.6.5.4.1 and 23.4.5.6.5.4.2 of this Attachment H. The ISO may reject, and may require to any of the involved Parties to re-submit, or substantiate information (including estimates) that the ISO determines is not adequately supported or otherwise verifiable. The Party shall promptly provide any additional information that the ISO may request, and update and revise information previously provided, and provide new information as set forth in Section 23.4.5.6.5.5 of this Attachment H.

Upon the ISO's request, the Parties involved shall make qualified representatives available to answer the ISO's question(s) and otherwise facilitate the ISO's review of the information. NYISO may terminate its consideration for a physical withholding review if one of the Parties involved fails to provide requested information.

Note: If the Second Party (also known as the "transferee facility" as defined in Attachment S to the ISO OATT) is subject to a Buyer Side Mitigation Examination (as set forth in Sections 25.9.4 and 25.9.5 of Attachment S to the ISO OATT) it must provide the ISO with any information that the ISO determines it requires regarding its Buyer Side Mitigation determination (as defined in Section 23.4.5.7 of this Attachment H), as part of the physical withholding determination request set forth in Section 23.4.5.6.5 of this Attachment H.

23.4.5.6.5.4.4 **Obligation to Submit Further Information.** (a) Market Participant or Generator Owner that requested a physical withholding determination in accordance with Section 23.4.5.6.1 of this Attachment H and (b) any other Second Party involved in the physical withholding determination request set forth in Section 23.4.5.6.5 of this Attachment H. shall provide any new information, and shall update and revise information previously submitted to the ISO in accordance with Section 23.4.5.6.5.4 of Attachment H, no more than ten days after any event occurring that makes any element of the information submitted materially inaccurate or insufficient.

**23.4.5.6.5.5 Aligning Issuance of Final Physical Withholding Determination with the Transfer of Deliverability Rights Process for Same Location CRIS Transfers**

23.4.5.6.5.5.1 At least ninety days prior to the CRIS Transfer Confirmation Date as set forth in Section 25.9.4 and 25.9.5 of Attachment S to the ISO OATT, the Market Participant (which is also a Market Party) may notify the ISO in writing of the same location transfer of deliverability rights proposed confirmation and effective date and request that the ISO issue a final physical withholding determination to the Market Participant, which shall be conducted by the ISO in accordance with Section 23.4.5.6.1 above. If the ISO, in consultation with the Market Monitoring Unit, determine that the CRIS Transfer Confirmation Date is, essentially and practicably, an irreversible point in the transfer process, then the ISO shall inform the Market Participant in writing and issue its final determination at least sixty days before the proposed CRIS Transfer Confirmation Date (as specified in the Market Participant's written notice).

The ISO's final physical withholding determination shall only be valid if the CRIS Transfer Confirmation Date becomes effective within a window that starts five days before the proposed effective date specified in the Market Participant's notice to the ISO and concludes ten days after the proposed effective date specified in the Market Participant's notice to the ISO.

23.4.5.6.5.5.2 A final physical withholding determination as specified in Section 23.4.5.6.6.1 of this Attachment H may only be requested by an active holder of CRIS rights as defined in Attachment S to the ISO OATT.

23.4.5.7.1 Unforced Capacity from (a) an Installed Capacity Supplier that is subject to an Offer Floor or (b) MW subject to an Offer Floor that are within a DER Aggregation may not be used to satisfy any LSE Unforced Capacity Obligation for Mitigated Capacity Zone Load unless such Unforced Capacity is obtained through participation in an ICAP Spot Market Auction.

23.4.5.7.3 The ISO shall make such exemption and Unit Net CONE determination for each Examined Facility that comprises a Project. When used in Section 23.4.5.7, the term “Generator” includes each Generator that plans to participate in a DER Aggregation.

23.4.5.7.3.1 For Examined Facilities participating in the Class Year immediately following Class Year 2021, and any subsequent Class Year Study, Additional SDU Study, and Expedited Deliverability Study that are commenced after August 1, 2022, the ISO shall conduct the Part A Exemption Test for all Examined Facilities in the manner described below prior to making any other exemption determinations under Sections 23.4.5.7.2(b), (c), and (d). If an Examined Facility passes the Part A Exemption Test described below and also passes the Part B Exemption Test described above in 23.4.5.7.2(b), it will be awarded a Part B Exemption; however, for the sole purposes of evaluating other Examined Facilities under the Part A Exemption Test and Part B Exemption Test, the capacity associated with the Examined Facility will continue to be treated as having received a Part A Exemption in order to ensure that another Examined Facility will not receive a Part A Exemption for the capacity of the Examined Facility that was awarded the Part B Exemption after having passed both the Part A and Part B Exemption Tests.

23.4.5.7.3.1.1 The ISO shall begin the Part A Exemption Test by dividing the Examined Facilities into Part A Group 1 Examined Facilities and Part A Group 2 Examined Facilities based upon the factors listed below in Section 23.4.5.7.3.1.3 of this

Services Tariff and on the ISO's projection of the time frame when each Examined Facility will come into service. The ISO will post a list of each group of Examined Facilities on its website in accordance with Section 23.4.5.7.3.1.4 of this Services Tariff. The ISO will rank all Examined Facilities in the Part A Group 1 Examined Facilities based upon the ISO's determination of each Examined Facility's specific Net Cost of New Entry except that all Public Policy Resources included in the Part A Group 1 Examined Facilities will be evaluated before other Part A Group 1 Examined Facilities. The ISO will rank all Examined Facilities in the Part A Group 2 Examined Facilities based upon the ISO's determination of each Examined Facility's specific Net Cost of New Entry except that all Public Policy Resources included in the Part A Group 2 Examined Facilities will be evaluated before other Part A Group 2 Examined Facilities. Each of the Examined Facilities in the Part A Group 1 Examined Facilities will be evaluated for the Part A Exemption Test using the Part A Mitigation Study Period Years 1 through 3. Upon completion of that evaluation, each of the Examined Facilities in the Part A Group 2 Examined Facilities will then be evaluated for the Part A Exemption Test using the Part A Mitigation Study Period Years 4 through 6.

23.4.5.7.3.1.2 For each Capability Year in a Part A Mitigation Study Period Years 1 through 3, the ISO will determine whether, in accordance with Section 23.4.5.7.15, the average ICAP Spot Market Auction price for each Capability Year in the Part A Mitigation Study Period Years 1 through 3 is higher than 75 percent of the Mitigation Net CONE that would be applicable to the Examined

Facility during that same Capability Year. For any Capability Year in which this threshold is met, the Examined Facility will qualify for a Part A Exemption for that Capability Year and any subsequent Capability Years. The Examined Facility, however, will be subject to an Offer Floor for any prior Capability Years in which the threshold was not met unless it otherwise qualifies for an exemption provided in 23.4.5.7.2 (b), (c), (d), or as Cleared UCAP. The Part A Exemption Test will be performed for each Examined Facility sequentially by rank. In its evaluation of each Examined Facility located in the New York City Locality for each Capability Year, the ISO will conduct the Part A Exemption Test for the New York City Locality prior to its evaluation for the G-J Locality. Following completion of review of all three Capability Years in the Part A Mitigation Study Period Years 1 through 3, this process is then conducted for the Part A Group 2 Examined Facilities for each Capability Year in the Part A Mitigation Study Period Years 4 through 6. The ISO will determine if, in accordance with Section 23.4.5.7.15, the average ICAP Spot Market Auction price for each Capability Year in the Part A Mitigation Study Period Years 4 through 6 is higher than 75 percent of the Mitigation Net CONE that would be applicable to the Examined Facility during that same Capability Year. If this threshold is met, the Examined Facility will qualify for a Part A Exemption for that Capability Year and any subsequent Capability Years. The Examined Facility, however, will be subject to an Offer Floor for any prior Capability Years in which the threshold was not met unless it otherwise qualifies for an exemption provided in 23.4.5.7.2 (b), (c), (d), or as Cleared UCAP. The Part A Exemption Test will be performed for each

Examined Facility sequentially by rank. In its evaluation of each Examined Facility located in the New York City Locality for each Capability Year, the ISO will conduct the Part A Exemption Test for the New York City Locality prior to its evaluation for the G-J Locality.

23.4.5.7.3.1.3 An Examined Facility will be in Part A Group 2 Examined Facilities unless: (i) it is already in-service; or (ii) the ISO has determined it (a) falls within a category of resources with a construction timeline of less than three years, including but not limited to small generators sized at or below 20 MW or uprates to existing generators and (b) is reasonable to project the facility could be in-service prior to the start of the second Winter Capability Period that falls within the Part A Mitigation Study Period Years 1 through 3. Those Examined Facilities that meet either (i) or (ii) above will be in Part A Group 1 Examined Facilities.

23.4.5.7.3.1.4 The ISO will post which Examined Facilities comprise the Part A Group 1 Examined Facilities and Part A Group 2 Examined Facilities 120 days after the Annual Transmission Baseline Assessment lock down of any Class Year Study; and 30 days after the start of any applicable Expedited Deliverability Studies.

23.4.5.7.3.2 The ISO shall compute the reasonably anticipated ICAP Spot Market Auction forecast price for any Mitigated Capacity Zone in accordance with Section 23.4.5.7.15.

When the ISO is evaluating more than one Examined Facility concurrently in either a Class Year Study, Additional SDU Study or Expedited Deliverability Study, the ISO shall recognize in its computation of the anticipated ICAP Spot Market Auction forecast price that Generators or UDR projects will clear from lowest to highest, using for each Examined Facility the lower of (i) the first year value of its Unit Net CONE, or (ii) the numerical value equal to 75 percent of the Mitigation Net Cone, then inflated in accordance with 23.4.5.7 for each of the year two and year three of the Mitigation Study Period. However, if an Examined Facility has accepted its determination from a Class Year Study, Additional SDU Study, or Expedited Deliverability Study, then the Examined Facility shall also be included in the BSM Forecast for any subsequently completed Class Year Study, Additional SDU Study or Expedited Deliverability Study that utilized the same Mitigation Study Period that was used to evaluate the Examined Facility. If an Examined Facility completes its Additional SDU Study after the completion of the Class Year Study that it originally entered but before the time the ISO completes a subsequent Class Year's Annual Transmission Baseline Assessment study cases then that Examined Facility shall have a separate decisional process utilizing the Mitigation Study Period from the most recently completed Class Year Study.

**23.4.5.7.3.3 [Intentionally Left Blank]**

All Developers, Interconnection Customers, and Installed Capacity Suppliers for any Examined Facility that do not request CRIS shall provide data and information requested by the ISO by the date specified by the ISO, in accordance with the ISO Procedures. For any such Examined Facility that is in a Class Year Study, Additional SDU Study or Expedited Deliverability Study on the date the ISO issues a notice to stakeholders that the decisional period of which the Examined Facility is a member has been completed but that only has ERIS rights, the ISO shall utilize the data first provided in its analysis of the Unit Net CONE in its review of the project in any future Class Year Study, Additional SDU Study, or Expedited Deliverability Study in which the Generator or UDR project requests CRIS. The ISO shall determine the reasonably anticipated Unit Net CONE with the costs to be determined in the Project Cost Allocation, as applicable, prior to or contemporaneous with the commencement of the Initial Decision Period, and shall provide to the Examined Facility the ISO's initial determination of an exemption or the Offer Floor.

The ISO shall provide to each Examined Facility its price forecast and an initial determination (incorporating its revised Project Cost Allocation) prior to or contemporaneous with the commencement of the Initial Decision Period for the Class Year Study, Additional SDU Study, and the Expedited Deliverability Study and for each Subsequent Decision Period for the Class Year Study and Additional SDU Study no later than the ISO's issuance of a Revised Project Cost Allocation for the Class Year Study and Additional SDU Study.

If an Examined Facility remains a member of the completed Class Year Study, Additional SDU Study, or Expedited Deliverability Study, the ISO shall inform the Examined Facility of the final Offer Floor determination(s) or the Offer Floor exemption(s) that will apply to the Examined Facility as soon as practicable after the date the ISO issues a notice to stakeholders that the decisional period has been completed, in accordance with methods and procedures specified in ISO Procedures.

When evaluating Examined Facilities pursuant to this Section 23.4.5.7, the ISO shall seek comment from the Market Monitoring Unit on matters relating to the determination of price projections and cost calculations.  The responsibilities of the Market Monitoring Unit that are addressed in this section of the Mitigation Measures are also addressed in Section 30.4.6.2.13 of Attachment O to this Services Tariff.

23.4.5.7.3.4 If a Generator or UDR Project that would be an Examined Facility under the criteria provided in (II) of the Examined Facility definition in Section 23.2.1 has not provided written notice to the ISO on or before the Class Year Start Date for the Class Year Study or the Expedited Deliverability Study Start Date for the expedited Delivery Study with which it was eligible to examined, or any Examined Facility required to be reviewed does not provide all of the requested data by the date specified by the ISO, the proposed Capacity shall be subject to the Mitigation Net CONE Offer Floor for the period determined by the ISO in accordance with Section 23.4.5.7.

23.4.5.7.3.5 Except as specified in Section 23.4.5.7.6 with respect to Additional CRIS MW, an Examined Facility for which an exemption or Offer Floor determination has been rendered may only be reevaluated for an exemption or Offer Floor determination if it meets the criteria provided in (I) of the Examined Facility definition in Section 23.2.1 and was not previously in a Class Year Study, Additional SDU Study, or Expedited Deliverability Study at the time of their completion and the Examined Facility either (a) enters a new Class Year and requests CRIS or (b) intends to receive transferred CRIS rights at the same location. An Expected CRIS Transferee that received CRIS will be bound by the determination rendered and will not be reevaluated. An Examined Facility under the criteria that had been set forth in Section 23.4.5.7.3 (III) prior to May 19, 2016, will not be reevaluated.

23.4.5.7.3.6 In order to become an Examined Facility in an Expedited Deliverability Study an eligible Project must (1) provide a written request to the ISO's Market

Mitigation and Analysis Department; and (2) satisfy all of the applicable data requirements in accordance with ISO Procedures prior to the start of the Expedited Deliverability Study. Once the data submission is deemed complete by the ISO the eligible Project will be notified by the ISO that it has satisfied the data requirements to enter an Expedited Deliverability Study.

23.4.5.7.3.7 If the Installed Capacity Supplier first offers UCAP prior to the first Capability Year of the Mitigation Study Period for which it was evaluated, its Offer Floor shall be reduced using the same numerical value for the inflation index that was used in the final determination issued under Section 23.4.5.7.4 (*i.e.*, when the Examined Facility remains a member of the completed Class Year as identified in Section 23.4.5.7.4. If the Installed Capacity Supplier first offers UCAP after the first Capability Year of the Mitigation Study Period for which it was evaluated, its Offer Floor shall be increased using the inflation rate identified in 23.4.5.7.

**23.4.5.7.3.8 Net Energy and Ancillary Services Revenue Projections for UDR Projects**

For the purposes of making an exemption determination or Unit Net CONE determination pursuant to Section 23.4.5.7 for an Examined Facility that is a UDR project, the ISO will determine the likely projected net Energy and Ancillary Services revenues utilizing a methodology that reflects, as applicable, but is not limited to, the guiding principles set forth in Section 23.4.5.7.3.8.1. The ISO will implement this Section 23.4.5.7.3.8 in accordance with Section 23.4.5.7.3.8.2.

23.4.5.7.3.8.1 The methodology used for a specific UDR project shall reflect the following guiding principles, where applicable:

(a) The design and characteristics of the UDR project as proposed in the Class Year, including whether it is proposed to be uni-directional or bi-directional.

(b) The market structure, scheduling rules, price formation rules, and other relevant characteristics and rules of the Control Area at each terminus of the UDR project.

(c) The reasonably projected effects of transactions utilizing the UDR project on NYCA and External Control Areas prices, including proxy bus prices.

(d) The reasonably projected cost to purchase energy, capacity, and ancillary services that would be transmitted into, and if the UDR project is proposed in the Class Year to be bi-directional also from, the Mitigated Capacity Zone, utilizing the UDR project at the rate determined by: (i) market-based clearing price mechanisms to the extent that the External Control Area uses them, or ISO market prices if an internal UDR project; (ii) a reasonable substitute, in the ISO's judgment, to the extent that the External Control Area does not use market-based clearing price mechanisms to determine prices. The costs to purchase energy and capacity, and any other products associated therewith, shall not be based on advantages or sources of revenue that would not reflect arm's-length transactions, or that are not in ordinary course of business for a competitive energy market participant.

(e) The reasonably anticipated fees for transmitting the ISO-projected energy, capacity, and ancillary services transactions utilizing the UDR project. These fees shall include any export fees, transmission services charges, ancillary services fees, scheduling fees, and other fees and costs.

(f) The reasonably projected opportunity costs (including fees) of selling energy, capacity, and any other products associated with the sale of energy, into an External Control Area in lieu of a sale transaction into the Mitigated Capacity Zone.

(g) The reasonably projected revenues from the sale of energy and ancillary services that would be transmitted into, and if the UDR project is proposed in the Class Year Study or Additional SDU Study to be bi-directional also from, the Mitigated Capacity Zone, utilizing the UDR project at the rate determined by: (i) market-based clearing price mechanisms to the extent that the External Control Areas uses them, or ISO market prices if an internal UDR project; (ii) a reasonable substitute, in the ISO's judgment, to the extent that the External Control Area does not use market-based clearing price mechanisms to determine prices. The revenues from the sale of energy, capacity, and any other products associated with the sale thereof, into an External Control Area shall not be based on advantages or sources of revenue that do not reflect arm's-length transactions, or that are not in ordinary course of business for a competitive energy market participant.

(h) The effect of scheduling uncertainty and imperfect arbitrage on the projected costs and revenues from the purchase and sale of energy and ancillary services that are reasonably projected to be transmitted into, and if the UDR project is proposed in the Class Year Study or Additional SDU Study to be bi-directional also from, the Mitigated Capacity Zone, utilizing the UDR project.

**23.4.5.7.3.8.2 Implementation**

(a) The ISO shall seek comment from the Market Monitoring Unit on the methodology the ISO will use to project net Energy and Ancillary Services for each UDR project, and the inputs used to perform the calculation. The responsibilities of the Market Monitoring Unit that are addressed in this section are also addressed in Section 30.4.6.2.13 of Attachment O.

(b) The ISO shall post on its website a description of the methodology used for each UDR project, subject to any restrictions on the disclosure of Confidential Information or Critical Energy Infrastructure Information.

(c) If a Project withdraws from a Class Year Study or Additional SDU Study and then enters another Class Year (regardless of whether it has the same or a different interconnection queue position,) the ISO may utilize a different methodology than it previously used, provided it reflects, where applicable, the guiding principles set forth in Section 23.4.5.7.3.8.1 and implemented in accordance with Section 23.4.5.7.3.8.2(a) and (b).

23.4.5.7.11 Mitigated UCAP that is subject to an Offer Floor shall remain subject to the requirements of Section 23.4.5.4. Except as set forth in 23.4.5.7.12, and if the Offer Floor is higher than the applicable Mitigated UCAP offer cap, the (a) Installed Capacity Supplier shall submit offers equal to the applicable Offer Floor, and (b) if the Mitigated UCAP is associated with a DER Aggregation that includes MW subject to an Offer Floor, the Installed Capacity Supplier shall submit offers for the MW subject to the Offer Floor equal to the applicable Offer Floor.

**23.4.5.7.15 Forecasts Under the Buyer Side Market Power Mitigation Measures**

The rules set forth in this Section 23.4.5.7.15 apply to (i) the ISO's determinations pursuant to Section 23.4.5.7, *et seq*. of ICAP Spot Market Auction forecast prices ("BSM ICAP Forecast") and (ii) Energy and Ancillary Services revenues when determining Unit Net CONE under Sections 23.4.5.7, *et seq*. (collectively for purposes of this Section, a "BSM Forecast"). The rule for Excluded Capacity set forth in Section 23.4.5.7.15.7.3 shall apply to Self Supply Capacity and Additional Self Supply Capacity under Section 23.4.5.7.14.3. The ISO shall post on its website the BSM Forecast inputs determined in accordance with this Section 23.4.5.7.15, subject to any restrictions on the disclosure of Confidential Information or Critical Energy Infrastructure Information, on or before the commencement of the Initial Decision Periods for the Class Year Study, Additional SDU Study and the Expedited Deliverability Study. This posting will include sources of or references for publicly available information "demonstrating with reasonable certainty," as defined in Section 23.4.5.7.15.2, used to develop the BSM Forecast.

23.4.5.7.15.1 For the purposes of Section 23.4.5.7.15, a "positive indicator" that a Generator or UDR project will repair and return to service includes indications that a return to service is, in the ISO's judgment, likely and imminent, such as visible site activity, executed labor or fuel supply arrangements, or unit testing.

23.4.5.7.15.2 For the purposes of Section 23.4.5.7.15, publicly available information "demonstrating with reasonable certainty" shall be limited to information that has been released, authorized, capitulated, or endorsed by an individual or entity having the authority or right to take specific, definitive, actions; and – if such information is contested, to take unilateral actions regarding the operational status of the facility.

23.4.5.7.15.3 When establishing a BSM Forecast, the ISO shall incorporate the parameters and inputs identified in the following subsections. The ISO shall make assumptions necessary to account for any other value or input not expressly addressed in the following subsections in accordance with ISO Procedures.

23.4.5.7.15.3.1 When establishing a BSM Forecast, the ISO shall include Existing Units and Additional Units, as defined in Sections 23.4.5.7.15.4 and .5, less Omitted Units, as defined in Section 23.4.5.7.15.6.

23.4.5.7.15.3.2 When establishing a BSM Forecast, the ISO shall utilize the Load forecast as set forth in the most recently published Load and Capacity Data (Gold Book), or as most recently posted to the ISO's public website and in accordance with ISO Procedures.

23.4.5.7.15.3.3 When determining a BSM ICAP Forecast, the ISO shall reflect Special Case Resource enrollment at a level consistent with average enrollment over the 3 prior Capability Years and Distributed Energy Resource participation in the Installed Capacity market at a level projected in accordance with ISO Procedures.

23.4.5.7.15.3.4 When determining a BSM ICAP Forecast, the ISO shall identify the projected ICAP Demand Curve by applying the "inflation index" as defined in Section 23.4.5.7.4. When determining a BSM ICAP Forecast for an Indicative Buyer-Side Mitigation Exemption Determination under Sections 23.4.5.7.2.2 and 23.4.5.7.2.4 when the Commission has not yet accepted the first ICAP Demand

Curve to apply specifically to the Mitigated Capacity Zone in which the NCZ Examined Project is located, such inflation rate shall be applied to the ICAP Demand Curve the ISO filed pursuant to Services Tariff Section 5.14.1.2.2.4.11.

**23.4.5.7.15.4 Existing Units**

Except for the Generators and UDR projects that are excluded without limitation under an exception set forth in Section 23.4.5.7.15.7, the ISO shall identify "Existing Units" as the set of Generators and UDR projects identified in the ISO's most-recently published Gold Book that have CRIS, and are operating at the time that the ISO determines the forecast; including but not limited to Generators in Forced Outage or Inactive Reserve status.

**23.4.5.7.15.5 Additional Units**

Subject to the exceptions set forth in Section 23.4.5.7.15.7, the ISO shall identify "Additional Units" as each Generator and UDR project that has been found to be exempt from an Offer Floor as described in Section 23.4.5.7.15.5.2 or (i) has previously offered to supply UCAP, (ii) has CRIS, (iii) is not in Existing Units, and (iv) if a Generator, is in an ICAP Ineligible Forced Outage, Mothball Outage, or Retired; if either: (a) the ISO concludes in its sole judgment that there are sufficient positive indicators that the Generator or UDR project will repair and return to service, or (b) the ISO determines that a return to service of the Generator or UDR project would have a positive Net Present Value as set forth in Section 23.4.5.7.15.8.

23.4.5.7.15.5.1 When establishing a BSM Forecast, the inclusion of Generators and UDR projects identified pursuant to Section 23.4.5.7.15.5 (b) as Additional Units shall reflect the persistence of their operation as being contingent on the projected recovery of their forecasted Going Forward Costs.

23.4.5.7.15.5.2 When the ISO establishes a BSM Forecast to complete the BSM determinations for a Class Year Study, Additional SDU Study or Expedited Deliverability Study, the ISO shall not double-count exemptions. The ISO, in consultation with the Market Monitoring Unit, shall include for each set of decision round determinations: (i) all Examined Facilities that the ISO has previously exempted from an Offer Floor as a Public Policy Resource under Section 23.4.5.7.3.1 in a Class Year Study, or Additional SDU Study or Expedited Deliverability Study in the first Capability Year in which the Examined Facility was granted such exemption, provided, however, for any exemption granted to an Examined Facility as a Public Policy Resource under Section 23.4.5.7.3.1 prior to the most recently completed Class Year Study, the ISO shall exclude the Examined Facility if it has determined it is reasonable to project the Examined Facility will not enter the market, and (ii) all Examined Facilities that the ISO determines will receive a Part A Exemption in the currently ongoing Class Year Study, Additional SDU Study or Expedited Deliverability Study until and unless an Examined Facility rejects its cost allocation or otherwise drops out of such Class Year Study, Additional SDU Study or Expedited Deliverability Study. Any Examined Facility that was granted an exemption by the ISO in a previously completed Class Year Study, Additional SDU Study, or Expedited Deliverability Study pursuant to Section 23.4.5.7.2(a) if issued prior to the start of Class Year 2019, Section 23.4.5.7.2(b), Section 23.4.5.7.2(c) or Section 23.4.5.7.2(d) shall also be included in the BSM Forecast for each set of decision round determinations for such Class Year Study, Additional SDU Study or Expedited

Deliverability Study if the ISO has determined that 5% or more of its respective total project's costs have been spent.

**23.4.5.7.15.6 Omitted Units**

Subject to the exceptions set forth in Section 23.4.5.7.15.7, the ISO shall identify "Omitted Units" as the set of Generators and UDR projects that meet the criteria in the following subsections.

23.4.5.7.15.6.1 Generators and UDR projects (i) that have transferred CRIS; (ii) for which the CRIS has expired; (iii) that have CRIS for which a request has been received by the ISO for an evaluation of a CRIS transfer from another location in the Class Year Facilities Study commencing in a calendar year in or preceding the Mitigation Study Period; or (iv) that are an expected transferor of transferred CRIS at the same location. For any CRIS transfer described in (iii) or (iv) of this Section, the transferor or the transferee must have notified the ISO of the transfer pursuant to OATT Attachment S Section 25.9.4 and the transfer must be reasonably expected to be effective on a date within the Mitigation Study Period.

23.4.5.7.15.6.2 Generators in ICAP Ineligible Forced Outages (even if resulting from Catastrophic Failures), Mothball Outages, or that are Retired; provided they are not identified under Section 23.4.5.7.15.5 as an Additional Unit or an exception under Section 23.4.5.7.15.7.

23.4.5.7.15.6.3 Generators that have submitted a Generation Deactivation Notice, beginning with the proposed deactivation date identified in such notice, provided that: (i) the ISO does not identify sufficient positive indicators that the Generator will repair and return to service and (ii) the ISO determines that a return to service or continued operation of the Generator does not have a positive Net Present Value as set forth in Section 23.4.5.7.15.8.

**23.4.5.7.15.7 Exceptions**

The rules set forth in the following subsections take precedence over the rules described elsewhere in Section 23.4.5.7.15 under the facts and circumstances defined therein.

23.4.5.7.15.7.1 Generators that have submitted a Generation Deactivation Notice, for which the ISO has not yet completed its Short-Term Assessment of Reliability or Generation Deactivation Assessment, shall not be identified by the ISO as Omitted Units, unless there is publicly available information demonstrating with reasonable certainty that the Generator or UDR project will indefinitely cease operation.

23.4.5.7.15.7.2 Initiating Generators with an associated Generator Deactivation Reliability Need for which a Short-Term Reliability Process Solution has not yet been identified, RMR Generators, and Interim Service Providers that are required to keep their generating unit(s) in-service, shall be included in Existing Units for the expected duration of such Generator Deactivation Reliability Need with which they are associated. Such Generators shall also be included in Existing Units beyond the expected duration of the Generator Deactivation Reliability Need if either: (a) the ISO determines, in its sole judgment, that a return to service or continued operation of the Generator has a positive Net Present Value as set forth in Section 23.4.5.7.15.8, or (b) there is publicly available information demonstrating with reasonable certainty that the Generator will continue operation.

23.4.5.7.15.7.3 Except for those included in Existing Units pursuant to Section 23.4.5.7.15.7.2, Generators and UDR projects for which there is publicly available information demonstrating with reasonable certainty that they will indefinitely cease operation, shall be identified as Excluded Capacity beginning with the date determined by the ISO to be consistent with the expected cessation of operations.

23.4.5.7.15.7.4 Generators and UDR projects for which there is publicly available information demonstrating with reasonable certainty that (a) they will return to service shall be included in Additional Units beginning with the date determined by the ISO to be consistent with its expected return to service, or (b) they will continue operations shall be included in Additional Units until the date determined by the ISO to be consistent with its expected continuation of operations.

23.4.5.7.15.7.5 Where determined by the ISO in its sole judgment to be reasonable, the additional capability associated with the repair of a Generator or UDR project that has been operating under a long term partial derate (such as due to the delay or deferral of repairs) may be treated as if it were in and of itself a separate Generator or UDR project in an ICAP Ineligible Forced Outage for the purposes of Section 23.4.5.7.15. In such instances, the net present value of the investment required to for the Generator or UDR facility to return to its original capability or capability prior to the long term partial derate shall be evaluated in place of the cost of returning to service.

23.4.5.7.15.7.6 The ISO shall not be required pursuant to Section 23.4.5.7.15 to determine whether a return to service or continued operation would have a positive Net Present Value as set forth in Section 23.4.5.7.15.8 for: (i) Generators in ICAP Ineligible Forced Outages that the ISO determined to have resulted from a Catastrophic Failure; and (ii) Generators that are Retired, provided that in the case of (ii), in the ISO's sole judgment, (a) the Generator was subject to actions that rendered it permanently inoperable, (b) the reversal of such actions would be a nontrivial undertaking, and (c) the ISO has received confirmation from it that it has permanently ceased operations.

23.4.5.7.15.7.7 The production and sale of energy from Generators and UDR projects that only have ERIS and no CRIS, or that will have ERIS only after a transfer of CRIS, for which the ISO has received notice or made a determination in the Class Year as described in the next sentence, shall be modeled in the BSM Forecasts, but such units shall be excluded from the BSM ICAP Forecast. In accordance with Attachment S of the OATT, the ISO must have received notice that the transaction is final if a transfer of CRIS at the same location, or have determined the facility receiving the transfer is deliverable and such transferee is either in the Class Year being examined, or remained in a prior Class Year at the time of its completion, if a transfer of CRIS from a different location.

**23.4.5.7.15.8 Net Present Value Analysis**

Where required by Section 23.4.5.7.15, the ISO shall determine if a Generator or UDR project that potentially could return to service or continue in operation would have a positive net present value under ISO-predicted market conditions and recognizing the entry of projects in the current Class Year and those that remained in prior Class Years at the time of their completion, in accordance with ISO Procedures. If the ISO-estimated net present value is greater than zero, then the criterion of this Section will be considered to have been met.

23.4.5.7.15.8.1 The ISO's net present value analysis shall consider, at a minimum: (a) the ISO-estimated costs and opportunity costs associated with returning a Generator or UDR project to service if the unit is not currently operating, and of continued operation through the end of the Mitigation Study Period, or the end of the investment horizon as reasonably determined by the ISO, whichever is of greater length (including, if applicable, the expected lost revenues of the rest of the portfolio of the Installed Capacity Supplier attributable to reductions in ICAP Spot Market Auction prices caused by the Generator or UDR project's return to service); (b) the ISO-estimated revenues, over the same time period, from the production and sale of Energy, Ancillary Services, and capacity, and (c) the effect that additional risk associated with the age, condition, and location of the Generator or UDR project may have on the required return on investment.

23.4.5.7.15.8.2 The ISO's net present value analysis shall be for a period beginning after the reasonably anticipated commencement of the Initial Decision Period but before the starting Capability Period of the Mitigation Study Period, through the end of Mitigation Study Period, or until the investment horizon as reasonably assumed by the ISO, whichever is of greater length.

23.4.5.7.15.8.3 The ISO shall consider data received from the Generator and UDR project for which it is performing a net present value analysis pursuant to this Section 23.4.5.7.15.8, and information received pursuant to Section 30.25 of the

OATT, along with any new, updated, or relevant information that the ISO, in its sole judgment and in accordance with ISO Procedures, has verified is reasonable and accurate.  If the ISO has not timely received sufficient information from the owner or representative of a Generator or UDR project, or if the ISO has received information but determined it is not suitable or reliable to be used for the purposes of a net present value analysis pursuant to Section 23.4.5.7.8, the ISO can substitute suitable estimated data, or identify the Generator or UDR project as Omitted Units.

**23.4.5.7 Buyer-Side Market Power Mitigation Measures for Installed Capacity**

Offers to supply Unforced Capacity from a Mitigated Capacity Zone Installed Capacity Supplier, unless from Excluded Facilities as defined in Section 23.2 or from facilities found to be exempt as specified below: (i) shall equal or exceed the applicable Offer Floor; and (ii) can only be offered in the ICAP Spot Market Auctions. A DER Aggregation that includes one or more Generators with MW subject to an Offer Floor can only offer the MW subject to an Offer Floor (x) at a price equal to or exceeding the Offer Floor of those MW and (y) in the ICAP Spot Market Auctions. Except for Offer Floors applied pursuant to Section 23.4.5.7.9.5.2 (i.e., after the revocation of a Competitive Entry Exemption,) or Section 23.4.5.7.14.5 (*i.e.*, after the revocation of Self Supply Exemption), the ISP UCAP MW, or when the Installed Capacity Supplier is an RMR Generator, the Offer Floor shall apply to offers for Unforced Capacity from the Installed Capacity Supplier starting with the Capability Period for which the Installed Capacity Supplier first offers to supply UCAP. Offer Floors applied pursuant to Section 23.4.5.7.9.5.2 shall apply to offers for Unforced Capacity from an Installed Capacity Supplier starting with all ICAP auction activity subsequent to the date of the revocation. The same exemption determination or Offer Floor shall apply to the 2 MW or less that an existing Generator or UDR project with CRIS requests and receives under Section 30.3.2.6 (Attachment X) or Section 32.4.11.1 (Attachment Z) of the ISO OATT. Offer Floors shall cease to apply:

(A) to that portion of an Examined Facility’s UCAP (rounded down to the nearest tenth of a MW) that has cleared for any twelve, not-necessarily-consecutive, months (such cleared amount, “Cleared UCAP”) in which the resource’s MW were not ISP UCAP MW or MW of an RMR Generator: and

(B) for the period an Installed Capacity Supplier is an Interim Service Provider if its generating unit(s) are required to remain in-service but only in the amount of its ISP UCAP MW, or an RMR Generator in which case the Installed Capacity Supplier's offers of UCAP shall be as set forth in Section 23.4.5.7.12. Offer Floors shall be adjusted annually using the most recent inflation rate that is the twelve month percentage change in the index for the general component of the escalation factor ("Inflation Rate") that is the most recent of (a) the Inflation Rate identified in the index accepted by the Commission after a periodic review in an ICAP Demand Curve Reset Filing Year, as of October 1 of the ICAP Demand Curve Reset Filing Year, and (b) the Inflation Rate in the Annual Update of the relevant effective ICAP Demand Curves published under Section 5.14.1.2.2.

(C) if the unit meets the criteria to be considered an Excluded Facility as defined in Section 23.2.

## 23.4.6 Virtual Bidding Measures

### 23.4.6.1 Purpose

The provisions of this Section 23.4.6 specify the market monitoring and mitigation measures applicable to "Virtual Bids." "Virtual Bids" are bids to purchase or supply energy that are not backed by physical load or generation that are submitted in the ISO Day-Ahead Market in accordance with the procedures and requirements specified in the ISO Services Tariff.

To implement the mitigation measures set forth in this Section 23.4.6, the ISO shall monitor and assess the impact of Virtual Bidding on the ISO Administered Markets.

### 23.4.6.2 Implementation

23.4.6.2.1 Day-Ahead LBMPs and Real-Time LBMPs in each load zone shall be monitored to determine whether there is a persistent hourly deviation between them in any zone that would not be expected in a workably competitive market. Monitoring of Day-Ahead and real-time LBMPs shall include examination of the following two metrics (along with any additional monitoring tools and procedures that the ISO determines to be appropriate to achieve the purpose of this Section 23.4.6):

(1) The ISO shall compute a rolling average of the hourly deviation of real-time zonal LBMPs from Day-Ahead zonal LBMPs. The hourly deviation shall be measured as: (zonal $\text{LBMP}_{\text{real time}}$ - zonal $\text{LBMP}_{\text{day ahead}}$). Each observation of the rolling-average time series shall be a simple average of all the hourly deviations over the previous four weeks, or such other averaging period determined by the ISO to be appropriate to achieve the purpose of this Section 23.4.6.

(2) The ISO shall also compute the rolling average *percentage* deviation of real-time zonal LBMPs from Day-Ahead zonal LBMPs.  This percentage deviation shall be calculated by dividing the rolling-average hourly deviation (defined in Section 23.4.6.2.1 (1) above) by the rolling-average level of Day-Ahead zonal LBMP over the same time period, using the averaging period(s) described in Section 23.4.6.2.1 (1), above.

23.4.6.2.2 If the ISO determines that (i) the relationship between zonal LBMPs in a zone in the Day-Ahead Market and the Real-Time Market is not what would be expected under conditions of workable competition, and that (ii) the Virtual Bidding practices of one or more Market Participants has contributed to an unwarranted divergence of LBMPs between the two markets, then the following mitigation measure may be imposed.  Any such measure shall be rescinded upon a determination by the ISO that the foregoing conditions are not met.

**23.4.6.3 Description of the Measure**

23.4.6.3.1 If the ISO determines that the conditions specified in Section 23.4.6.2 exist, the ISO may limit the hourly quantities of Virtual Bids for supply or load that may be offered in a zone by a Market Participant whose Virtual Bidding practices have been determined to contribute to an unwarranted divergence of LBMPs between the Day-Ahead and Real-Time Markets.  Any such limitation shall be set at such level that, and shall remain in place for such period as, in the best judgment of the ISO, would be sufficient to prevent any unwarranted divergence between Day-Ahead and Real-Time LBMPs.

23.4.6.3.2 As part of the foregoing determination, the ISO shall request explanations of the relevant Virtual Bidding practices from any Market Participant submitting such Bids. Prior to imposing a Virtual Bidding quantity limitation as specified above, the ISO shall notify the affected Market Participant of the limitation.

#### 23.4.6.4 Limitation of Virtual Bidding

If the ISO determines that such action is necessary to avoid substantial deviations of LBMPs between the Day-Ahead and Real-Time Markets, the ISO may impose limits on the quantities of Virtual Bids that may be offered by all Market Participants. Any such restriction shall limit the quantity of Virtual Bids for supply or load that may be offered by each Market Participant by hour and by zone. Any such limit shall remain in place for the minimum period necessary to avoid substantial deviations of LBMPs between the Day-Ahead and Real-Time Markets, or to maintain the reliability of the New York Control Area.

### 23.4.7 Increasing Bids in Real-Time for Incremental Energy Scheduled Day-Ahead or Decreasing Bids in Real-Time for Day-Ahead Scheduled Incremental Energy Withdrawals

#### 23.4.7.1 Purpose

This Section 23.4.7 specifies the monitoring applicable and the mitigation measures that may be applicable to a Market Party with submitted Incremental Energy Bids in the real-time market that exceed the Incremental Energy Bids made in the Day-Ahead Market (or mitigated Day-Ahead Incremental Energy Bids where appropriate), for a portion of the Capacity of one or more of its Generators or Aggregations that has been scheduled in the Day-Ahead Market.

This Section 23.4.7 also specifies the monitoring applicable and the mitigation measures that may be applicable to a Market Party with submitted Bids in the real-time market that are less than the Incremental Energy Bids made in the Day-Ahead Market (or mitigated Day-Ahead

Incremental Energy Bids where appropriate), for one or more of its Generators or Aggregations that has been scheduled in the Day-Ahead Market to withdraw Energy.

The purpose of the Services Tariff rules authorizing the submission of Incremental Energy Bids in the real-time market that exceed the Incremental Energy Bids made in the Day-Ahead Market (or mitigated Day-Ahead Incremental Energy Bids where appropriate), of the portion of the Capacity of a Market Party's Generator that was scheduled in the Day-Ahead Market is to permit the inclusion of additional costs of providing incremental Energy in real-time Incremental Energy Bids for Generators scheduled in the Day-Ahead Market, where the additional costs of providing incremental Energy were not known prior to the close of the Day-Ahead Market.

The purpose of the Services Tariff rules authorizing the submission of Incremental Energy Bids in the real-time market less than the Incremental Energy Bids made in the Day-Ahead Market (or mitigated Day-Ahead Incremental Energy Bids where appropriate), of the portion of the Capacity of a Market Party's Generator or Aggregation that was scheduled to withdraw energy in the Day-Ahead Market is to permit changes in opportunity costs to be reflected in real-time Incremental Energy Bids for Generators or Aggregations scheduled to withdraw energy in the Day-Ahead Market, where the opportunity costs of withdrawing incremental Energy has changed relative to the opportunity costs expected prior to the close of the Day-Ahead Market.

**23.4.7.2 Monitoring and Implementation**

23.4.7.2.1 The ISO will monitor Market Parties for unjustified interactions between a Market Party's virtual bidding and the submission of real-time Incremental Energy Bids that exceed the Incremental Energy Bids submitted in the Day-Ahead Market (or mitigated Day-

Ahead Incremental Energy Bids where appropriate), for the portion of a Generator's or an Aggregation's Capacity that was scheduled in the Day-Ahead Market.

If the Market Party has a scheduled Virtual Load Bid for the same hour of the Dispatch Day as the hour for which submitted real-time Incremental Energy Bids exceeded the Incremental Energy Bids submitted in the Day-Ahead Market (or mitigated Day-Ahead Incremental Energy Bids where appropriate), for a portion of its Generator's or Aggregation's Capacity that was scheduled in the Day-Ahead Market, and any such real-time Incremental Energy Bids exceed the reference level for those Bids that can be justified after-the-fact by more than:

(i) the lower of $100/MWh or 300%; or

(ii) if the Market Party's Generator or Aggregation is located in a Constrained Area for intervals in which an interface or facility into the area in which the Generator or Aggregation is located has a Shadow Price greater than zero, then a threshold calculated in accordance with Sections 23.3.1.2.2.1 and 23.3.1.2.2.2 of these Mitigation Measures;

and a calculation of a virtual market penalty pursuant to the formula set forth in Section 23.4.3.3.4 of these Mitigation Measures for the Market Party would produce a penalty in excess of $1000, then the mitigation measure specified below in Section 23.4.7.3.1 shall be imposed for the Market Party's Generator or Aggregation, along with a penalty calculated in accordance with Section 23.4.3.3.4 of these Mitigation Measures. The application of a penalty under Section 23.4.3.3.4 of these Mitigation Measures shall not preclude the simultaneous application of a penalty pursuant to Section 23.4.3.3.3 of these Mitigation Measures.

23.4.7.2.2 The ISO will monitor Market Parties for unjustified interactions between a Market Party's virtual bidding and the submission of real-time Incremental Energy Bids that are less than the Incremental Energy Bids made in the Day-Ahead Market (or mitigated Day-Ahead Incremental Energy Bids where appropriate), for one or more of its Generators or Aggregations that has been scheduled in the Day-Ahead Market to withdraw Energy.

If the Market Party has a scheduled Virtual Supply Bid for the same hour of the Dispatch Day as the hour for which submitted real-time Incremental Energy Bids at a price that is lower than the Incremental Energy Bids submitted in the Day-Ahead Market (or mitigated Day-Ahead Incremental Energy Bids where appropriate), for one or more of its Generators or Aggregations that has been scheduled in the Day-Ahead Market to withdraw Energy, and any such real-time Incremental Energy Bids is less than the reference level for those Bids that can be justified after-the-fact by more than:

(i) the lower of $100/MWh or 300%; provided however, that Bids to withdraw Incremental Energy that have an associated reference level that is between -$25 and $25 per MWh (inclusive) shall instead be subject to a threshold of $75/MWh; or

(ii) if the Market Party's Generator or Aggregation is located in a Constrained Area for intervals in which an interface or facility into the area in which the Generator, Aggregation or generation is located has a Shadow Price greater than zero, then a threshold calculated in accordance with Sections 23.3.1.2.2.1 and 23.3.1.2.2.2 of these Mitigation Measures;

and a calculation of a virtual market penalty pursuant to the formula set forth in Section 23.4.3.3.4 of these Mitigation Measures for the Market Party would produce a penalty in excess of $1000, then the mitigation measure specified below in Section 23.4.7.3.1 shall be imposed for the Market Party's Generator or Aggregation, along with a penalty calculated in accordance with Section 23.4.3.3.4 of these Mitigation Measures. The application of a penalty under Section 23.4.3.3.4 of these Mitigation Measures shall not preclude the simultaneous application of a penalty pursuant to Section 23.4.3.3.3 of these Mitigation Measures.

**23.4.7.3 Mitigation Measure**

23.4.7.3.1 If the ISO determines that the conditions specified in Section 23.4.7.2.1 exist the ISO shall revoke the opportunity for any bidder of that Generator or Aggregation to submit Incremental Energy Bids in the real-time market that exceed the Incremental Energy Bids submitted in the Day-Ahead Market (or mitigated Day-Ahead Incremental Energy Bids where appropriate), for portions of that Generator's or Aggregation's Capacity that were scheduled Day-Ahead.

If the ISO determines that the conditions specified in Section 23.4.7.2.2 exist the ISO shall revoke the opportunity for the Market Party and its Affiliates to submit Virtual Bids in the Load Zone(s) where the Withdrawal-Eligible Generator(s) or Aggregations that include Withdrawal-Eligible Generator(s) that has been scheduled in the Day-Ahead Market to withdraw Energy, and for which the Market Party submitted real-time Incremental Energy Bids that were less than the Incremental Energy Bids made in the Day-Ahead Market, are located.

23.4.7.3.1.1 The first time the ISO revokes the opportunity for bidders of a Generator or Aggregation to submit Incremental Energy Bids in the Real-Time Market that exceed the Incremental Energy Bids submitted in the Day-Ahead Market (or mitigated Day-Ahead Incremental Energy Bids where appropriate), for portions of that Generator's or Aggregation's Capacity that were scheduled Day-Ahead, mitigation shall be imposed for 90 days. The 90 day period shall start two business days after the date that the ISO provides written notice of its determination that the application of mitigation is required.

The first time the ISO revokes the opportunity for the Market Party and its Affiliates to submit Virtual Bids in the Load Zone(s) where the Generator(s) or Aggregation(s) that has been scheduled in the Day-Ahead Market to withdraw Energy, and for which the Market Party submitted real-time Incremental Energy Bids that were less than the Incremental Energy Bids made in the Day-Ahead Market, are located, mitigation shall be imposed for 90 days. The 90 day period shall start two business days after the date that the ISO provides written notice of its determination that the application of mitigation is required.

23.4.7.3.1.2 Any subsequent time the ISO revoked the opportunity for bidders of a Generator or an Aggregation to submit Incremental Energy Bids in the Real-Time Market that exceed the Incremental Energy Bids submitted in the Day-Ahead Market or mitigated Day-Ahead Incremental Energy Bids where appropriate, for portions of that Generator's or Aggregation's Capacity that were scheduled Day-Ahead, mitigation shall be imposed for 180 days. The 180 day period shall start two business days after the date that the ISO provides written notice of its determination that the application of mitigation is required.

Any subsequent time the ISO revokes the opportunity for the Market Party and its Affiliates to submit Virtual Bids in the Load Zone(s) where the Generator(s) or Aggregation(s) that has been scheduled in the Day-Ahead Market to withdraw Energy, and for which the Market Party submitted real-time Incremental Energy Bids that were less than the Incremental Energy Bids made in the Day-Ahead Market, are located, mitigation shall be imposed for 180 days. The 180 day period shall start two business days after the date that the ISO provides written notice of its determination that the application of mitigation is required.

23.4.7.3.1.3 If bidders of a Generator or an Aggregation that has previously been mitigated under this Section 23.4.7.3 become and remain continuously eligible to submit Incremental Energy Bids in the Real-Time Market that exceed the Incremental Energy Bids submitted in the Day-Ahead Market or mitigated Day-Ahead Incremental Energy Bids where appropriate, for portions of that Generator's or Aggregation's Capacity that were scheduled Day-Ahead, for a period of one year or more, then the ISO shall apply the mitigation measure set forth in Section 23.4.7.3 of the Mitigation Measures as if the Generator or Aggregation had not previously been subject to this mitigation measure.

23.4.7.3.1.4 Market Parties that transfer, sell, assign, or grant to another Market Party the right or ability to Bid a Generator or an Aggregation that is subject to the mitigation measure in this Section 23.4.7.3 are required to inform the new Market Party that the Generator or Aggregation is subject to mitigation under this measure, and to inform the new Market Party of the expected duration of such mitigation.

### 23.4.8 Duration of Mitigation Measures

Except as specified in Section 23.4.5 of this Attachment H, any mitigation measure imposed as specified above shall expire not later than six months after the occurrence of the conduct giving rise to the measure, or at such earlier time as may be specified by the ISO.

## 23.4 Mitigation Measures

### 23.4.1 Purpose and Terms

If conduct is detected that meets the criteria specified in Section 23.3, the appropriate mitigation measure described in this Section shall be applied by the ISO. The conduct specified in Sections 23.3.1.1 to 23.3.1.3 shall be remedied by (1) the prospective application of a default bid measure, or (2) the application of a default bid to correct guarantee payments, as further described in Section 23.4.2.2.4, below, or (3) the application of the sanction described in Section 23.4.3 of these Mitigation Measures if (x) an Energy Storage Resource, or an Aggregation made up solely of Energy Storage Resources located outside the Constrained Area engages in conduct that violates Section 23.3.1.2.1.1.2(a) of these Mitigation Measures that has an LBMP impact that exceeds the applicable threshold, or (y) an Energy Storage Resource, or an Aggregation made up solely of Energy Storage Resources engages in conduct that violates Sections 23.3.1.2.1.1.2(b) or 23.3.1.2.2.6(b) of these Mitigation Measures that has an LBMP impact that exceeds the applicable threshold in the Day-Ahead Market. If a Market Party or its Affiliates (i) engage in physical withholding by providing the ISO false information regarding the derating or outage of an Electric Facility, or (ii) engage in uneconomic production or uneconomic withdrawal or do not operate a Generator or an Aggregation in conformance with ISO dispatch instructions such that the prospective application of a default bid is not feasible, or (iii) if otherwise appropriate to deter physical or economic withholding or uneconomic production or uneconomic withdrawal, the ISO shall apply the sanction described in Section 23.4.3.

Terms with initial capitalization not defined in Section 23.4 shall have the meaning set forth in the Open Access Transmission Tariff.

## 23.4.2 Default Bid

### 23.4.2.1 Purpose

A default bid shall be designed to cause a Market Party to Bid as if it faced workable competition during a period when (i) the Market Party does not face workable competition, and (b) has responded to such condition by engaging in the physical or economic withholding of an Electric Facility. In designing and implementing default bids, the ISO shall seek to avoid causing an Electric Facility to Bid below its marginal cost.

### 23.4.2.2 Implementation

23.4.2.2.1 If the criteria contained in Section 23.3 are met, the ISO may substitute a default bid or bid parameter for a Bid or bid parameter submitted for an Electric Facility, or require the Market Party to use the default bid or bid parameter in the Bids it submits for an Electric Facility. The default bid or bid parameter shall establish a maximum or minimum value for one or more components of the submitted Bid or Bid parameters, equal to a reference level for that component determined as specified in Section 23.3.1.4.

23.4.2.2.1.1 If the substitution of a default bid or bid parameter(s) for any portion of the Incremental Energy Bid curve submitted for an Energy Storage Resource would result in a mitigated energy curve that is not consistent with the Energy Storage Resource's Roundtrip Efficiency, then the default bid or bid parameter(s) to inject Energy will be adjusted to the minimum extent necessary to ensure the difference between bids to withdraw Energy and bids to inject Energy incorporate the Energy Storage Resource's Roundtrip Efficiency.

23.4.2.2.2 An Electric Facility subject to a default bid shall be paid the LBMP or other market clearing price applicable to the output from the facility. Accordingly, a default bid shall not limit the price that a facility may receive unless the default bid determines the LBMP or other market clearing price applicable to that facility.

23.4.2.2.3 If an Electric Facility is mitigated using the automated mitigation procedures described in Section 23.3.2.2.3 of these mitigation measures to a default bid for an Incremental Energy Bid other than a default bid determined as specified in Section 23.3.1.4, the Electric Facility shall receive an additional payment for each interval in which such mitigation occurs equal to the product of: (i) the amount of Energy in that interval scheduled or dispatched to which the incorrect default bid was applied; (ii) the difference between (a) the lesser of the applicable unmitigated bid and a default bid determined in accordance with Section 23.3.1.4, and (b) the applicable LBMP or other relevant market price in each such interval, if (a) greater than (b), or zero otherwise; and (iii) the length of that interval.

If an Electric Facility is mitigated to a default bid for a Start-Up Bid or a Minimum Generation Bid other than a default bid determined as specified in Section 23.3.1.4 of these Mitigation Measures, or if an Electric Facility is mitigated to a default bid for an Incremental Energy Bid other than a default bid determined as specified in Section 23.3.1.4 of these Mitigation Measures based on mitigation procedures other than the automated mitigation procedures described in Section 23.3.2.2.3 of these Mitigation Measures, then the ISO shall determine if the Bids would have failed the relevant conduct test(s) if correctly determined default bids had been used. The ISO shall then restore any original (as-submitted) Bid(s) that would not have failed the relevant conduct test(s) if correctly determined default bids had been used, and use the restored Bid(s) to determine a settlement. Otherwise, the ISO shall use the Generator's or Aggregation's correct or corrected default bid(s) to determine a settlement.

23.4.2.2.4 Except as may be specifically authorized by the Commission:

23.4.2.2.4.1 The ISO shall not use a default bid to determine revised market clearing prices for periods prior to the imposition of the default bid.

23.4.2.2.4.2 The ISO shall only be permitted to apply default bids to determine revised real-time guarantee payments to a Market Party in accordance with the provisions of Section 23.3.3.3 of these Mitigation Measures.

23.4.2.2.5 Automated implementation of default bid mitigation measures shall be subject to the following requirements.

23.4.2.2.5.1 Automated mitigation measures shall not be applied if the price effects of the measures would cause the average day-ahead energy price in the mitigated locations or zones to rise over the entire day.

23.4.2.2.5.2 Automated mitigation measures as specified in Section 23.3.2.2.3 shall be applied to Minimum Generation Bids and start-up costs Bids meeting the applicable conduct and impact tests. When mitigation of Minimum Generation Bids is warranted, mitigation shall be imposed from the first hour in which the impact test is met to the last hour in which the impact test is met, or for the duration of the mitigated Generator's minimum run time, whichever is longer.

23.4.2.2.5.3 The posting of the Day-Ahead schedule may be delayed if necessary for the completion of automated mitigation procedures.

23.4.2.2.5.4 Bids not mitigated under automated procedures shall remain subject to mitigation by other procedures specified herein as may be appropriate.

23.4.2.2.5.5 The role of automated mitigation measures in the determination of Day-Ahead market clearing prices is described in Section 17.1.3 of Attachment B of the ISO Services Tariff.

23.4.2.2.6 A Real-Time automated mitigation measure shall remain in effect for the duration of any hour in which there is an RTC interval for which such mitigation is deemed warranted.

23.4.2.2.7 A default bid shall not be imposed on a Generator that is not in the New York Control Area and that is electrically interconnected with another Control Area.

**23.4.3 Sanctions**

**23.4.3.1 Types of Sanctions**

The ISO may impose financial penalties on a Market Party in amounts determined as specified below.

**23.4.3.2 Imposition**

The ISO shall impose financial penalties as provided in this Section 23.4.3, if the ISO determines in accordance with the thresholds and other standards specified in this Attachment H that*:* (i) a Market Party has engaged in physical withholding, including providing the ISO false information regarding the derating or outage of an Electric Facility; or (ii) a Market Party or its Affiliates have engaged in uneconomic production; or (iii) a Market Party or its Affiliates have engaged in uneconomic withdrawal; or (iv) a Market Party or its Affiliates have failed to follow the ISOs dispatch instructions in real-time, resulting in a different output level than would have been expected had the Market Party's or the Affiliate's generation followed the ISO's dispatch instructions, and such conduct has caused a material increase in one or more prices or guarantee payments in an ISO Administered Market; or (v) a Market Party has made unjustifiable changes to one or more operating parameters of a Generator or an Aggregation that reduce its ability to provide Energy or Ancillary Services; or (vi) a Load Serving Entity has been subjected to a Penalty Level payment in accordance with Section 23.4.4 below; or (vii) a Market Party has submitted inaccurate fuel type or fuel price or opportunity cost information that is used by the ISO in the development of a Generator's or an Aggregation's reference level, where the inaccurate reference level that is developed, in turn, directly or indirectly impacts guarantee payments or market clearing prices paid to the Market Party; or (viii) a Market Party has submitted inaccurate information other than fuel type or fuel price information that is used by the ISO in the development of a Generator's or an Aggregation's reference level, where the inaccurate reference level that is developed, in turn, directly or indirectly impacts guarantee payments or market clearing prices paid to the Market Party; or (ix) the opportunity to submit Incremental Energy Bids into the real-time market that exceed Incremental Energy Bids made in the Day-Ahead Market or mitigated Day-Ahead Incremental Energy Bids where appropriate, has been revoked for a Market Party's Generator or Aggregation pursuant to Sections 23.4.7.2 and 23.4.7.3 of these Mitigation Measures; or (x) a Market Party has engaged in economic withholding in the Day-Ahead Market by submitting Incremental Energy Bids that violate the conduct thresholds specified in Sections 23.3.1.2.1.1.2(b) or 23.3.1.2.2.6(b) of these Mitigation Measures and cause an LBMP impact that exceeds the applicable threshold; or (xi) a Market

Party has engaged in economic withholding of an Energy Storage Resource or an Aggregation made up solely of Energy Storage Resources located outside the Constrained Area by submitting Incremental Energy Bids that violate the conduct threshold specified in Section 23.3.1.2.1.1.2(a) of these Mitigation Measures and cause an LBMP impact that exceeds the applicable threshold.

**23.4.3.3 Base Penalty Amount**

23.4.3.3.1 Except for financial penalties determined pursuant to Sections 23.4.3.3.2, 23.4.3.3.3, and 23.4.3.3.4 below, financial penalties shall be determined by the product of the Base Penalty Amount, as specified below, times the appropriate multiplier specified in Section 23.4.3.4:

MW meeting the standards for mitigation during Mitigated Hours * Penalty market-clearing price.

23.4.3.3.1.1 For purposes of determining a Base Penalty Amount, the term "Mitigated Hours" shall mean: (i) for a Day-Ahead Market, the hours in which MW were withheld; (ii) for a Real-Time Market, the hours in the calendar day in which MW were withheld; and (iii) for load Bids, the hours giving rise to Penalty Level payments.

23.4.3.3.1.1.1 For purposes of determining a Base Penalty Amount for economic withholding related to Bids that the ISO evaluates as a price spread for purposes of scheduling and dispatch, the term "Mitigated Hours" shall instead mean:

(i) for the Day-Ahead Market, for Energy Storage Resources and Aggregations made up solely of Energy Storage Resources located outside the Constrained Area, all hours of the day in which an LBMP impact is determined after the NYISO replaces all Incremental Energy Bids that violate the conduct thresholds specified in Sections 23.3.1.2.1.1.2(a) or 23.3.1.2.1.1.2(b) of these Mitigation Measures with reference levels; or

(ii) for the Day-Ahead Market, for Energy Storage Resources and Aggregations made up solely of Energy Storage Resources located in the Constrained Area, all hours of the day in which an LBMP impact is determined after the NYISO replaces all Incremental Energy Bids that violate the conduct thresholds specified in Section 23.3.1.2.2.6(b) of these Mitigation Measures with reference levels; or

(iii) for the Real-Time Market, for Energy Storage Resources and Aggregations made up solely of Energy Storage Resources located outside the Constrained Area, all hours of the day in which an LBMP impact is determined after the NYISO replaces all Incremental Energy Bids that violate the conduct thresholds specified in Sections 23.3.1.2.1.1.2(a) of these Mitigation Measures with reference levels.

In each of the above cases, the "MW meeting the standards for mitigation during Mitigated Hours" shall be all scheduled MW.

23.4.3.3.1.2 For purposes of determining a Base Penalty Amount, the term "Penalty market-clearing price" shall mean: (i) for a withholding seller, the LBMP or other market-clearing price at the generator bus of the withheld resource (or in the relevant Load Zone, if a clearing price is not calculated at the generator bus); and (ii) for a Load Serving Entity, its zonal LBMP.

23.4.3.3.1.2.1 For purposes of determining a Base Penalty Amount for economic withholding related to Bids that the ISO evaluates as a price spread for purposes of scheduling and dispatch, the “Penalty market-clearing price” shall instead mean the difference between the market clearing price that was set and the market clearing price would instead be determined if reference levels are substituted for conduct-failing Incremental Energy Bids.

**23.4.3.3.2 Uneconomic Production, Uneconomic Withdrawal, and Failure to Follow ISO Dispatch Instructions**

23.4.3.3.2.1 The financial penalty for uneconomic production conduct that violates the thresholds set forth in 23.3.1.3.1.1 of these Mitigation Measures or uneconomic withdrawal conduct that violates the thresholds set forth in 23.3.1.3.2.1 of these Mitigation Measures, and is determined to have had impact in accordance with Section 23.3.2.1 of these Mitigation Measures, shall be:

(i) One and a half times the product of (a) the absolute value of the Congestion Component of the Day-Ahead LBMP or Real-Time LBMP and (b) the MW meeting the standards for mitigation during the Mitigated Hour(s); or

(ii) One and a half times the increase in Bid Production Cost guarantee payments or Day-Ahead Margin Assurance Payments earned by the Generator or by the Market Party and its Affiliates during the Mitigated Hour(s), or on the market day during which the Mitigated Hour(s) occurred if related to a daily payment.

For purposes of determining the financial penalty for uneconomic production or uneconomic withdrawal in this Section 23.4.3.3.2.1, the term “Mitigated Hour(s)” shall mean the hours in which uneconomic production or uneconomic withdrawal conduct occurred.

23.4.3.3.2.2 The financial penalty for failure to follow ISO's dispatch instructions in real-time, resulting in real-time operation at a different output level than would have been expected had the Market Party's or the Affiliate's generation followed the ISO's dispatch instructions, if the conduct violates the thresholds set forth in Sections 23.3.1.1.1.2, or 23.3.1.3.1.2 of these Mitigation Measures, and if a Market Party or its Affiliates, or at least one Generator or Aggregation, is determined to have had impact in accordance with Section 23.3.2.1 of these Mitigation Measures, shall be:

One and a half times the estimated additional real time LBMP and Ancillary Services revenues earned by the Generator or Aggregation, or Market Party and its Affiliates, meeting the standards for impact during intervals in which MW were not provided or were overprovided.

**23.4.3.3.3 Submission of Inaccurate Fuel Type, Fuel Price or Opportunity Cost Information**

If inaccurate fuel type, fuel price or opportunity cost information was submitted by or for a Market Party, and the reference level that the ISO developed based on that inaccurate information impacted guarantee payments or market clearing prices paid to the Market Party in a manner that violates the thresholds specified in this Section 23.4.3.3.3, then, following consultation with the Market Party regarding the appropriate fuel type, fuel price or opportunity cost, the ISO shall apply the penalty set forth below, unless: (i) the Market Party shows that the information was submitted in compliance with the requirements of Section 4.1.9 of the ISO Services Tariff (Cost Recovery for Units Responding to Local Reliability Rules Addressing Loss of Generator Gas Supply), or (ii) the total penalty calculated for a particular Day-Ahead or Real-Time Market day is less than $5,000, in which case the ISO will not apply a penalty.

**23.4.3.3.3.1 Inaccurate Fuel Type and/or Fuel Price Information Conduct and Market Impact Tests**

**23.4.3.3.3.1.1 Inaccurate Fuel Type and/or Fuel Price Information Conduct Test and Inaccurate Opportunity Cost Conduct Test**

Inaccurate Fuel Price/Type Conduct Test—using the higher of (a) a revised reference level calculated using the Generator's or Aggregation's actual fuel costs, or (b) the reference level that would have been in place for the Generator or Aggregation but for the submission of inaccurate fuel type and/or fuel price information, test the Bids to determine if they violate the relevant conduct threshold in accordance with the appropriate provision(s) of Section 23.3.1.2 of these Mitigation Measures.

Inaccurate Opportunity Cost Conduct Test—using the higher of (a) a revised reference level calculated using the Generator's or Aggregation's demonstrated opportunity cost, or (b) the reference level that would have been in place for the Generator or Aggregation but for the submission of inaccurate opportunity cost information, test the Bids to determine if they violate the relevant conduct threshold in accordance with the appropriate provision(s) of Section 23.3.1.2 of these Mitigation Measures.

**23.4.3.3.3.1.2 Inaccurate Fuel Type and/or Fuel Price Information Impact Test and Inaccurate Opportunity Cost Conduct Test**

Inaccurate Fuel Price/Type Impact Test—using the higher of (a) a revised reference level calculated using the Generator's or Aggregation's actual fuel costs, or (b) the reference level that would have been in place for the Generator or Aggregation but for the submission of inaccurate fuel type and/or fuel price information, test the Bids for both LBMP and guarantee payment impact in accordance with the appropriate provisions of Section 23.3.2.1 of these Mitigation measures.

Inaccurate Opportunity Cost Impact Test—using the higher of (a) a revised reference level calculated using the Generator's or Aggregation's demonstrated opportunity cost, or (b) the reference level that would have been in place for the Generator or Aggregation but for the submission of inaccurate opportunity cost information, test the Bids for both LBMP and guarantee payment impact in accordance with the appropriate provisions of Section 23.3.2.1 of these Mitigation measures.

23.4.3.3.3.1.2.1 The ISO shall perform the guarantee payment impact tests for Generators or Aggregations that are committed in the Day-Ahead Market for local reliability or in the Real-Time Market via an SRE, and that are not located in a Constrained Area, at the 50% increase Constrained Area threshold specified in Section 23.3.2.1.2 of these Mitigation Measures.

23.4.3.3.3.1.3 Day-Ahead Reliability Commitments in a Constrained Area

Consistent with Section 23.5.2 of these Mitigation Measures, the conduct and impact thresholds for In-City Generators or Aggregations committed in the Day-Ahead Market for local reliability shall each be zero.

**23.4.3.3.3.2 Inaccurate Fuel Type and/or Fuel Price and/or Opportunity Cost Information Penalty Calculation**

If the results of the impact test indicate that the Market Party's Bid had either LBMP or guarantee payment impact then the ISO shall charge the Market Party a penalty, calculated separately for the Day-Ahead Market and the Real-Time Market for each penalized day, for each of its Generators or Aggregations, as follows:

Daily Penalty (for either the Day-Ahead Market or the Real-Time Market) =

$$\text{Multiplier} \times \max [\Sigma_g \blacktriangle \text{ BPCG payment}_g +$$
$$\Sigma_h \Sigma_g (\text{Market Party MWh}_{gh} \times \blacktriangle \text{ LBMP@PTID}_{gh}) +$$
$$\max (\Sigma_h \text{ TCC Revenue Calc for Market Party}_h, 0), 0]$$

Where:

g = each of the Market Party's Generators or Aggregations.

h = (a) for the purpose of calculating Day-Ahead Market penalties for a given day, h is each hour of that day in which inaccurate fuel type or fuel price or opportunity cost information was supplied in the Day-Ahead Market for any of the Market Party's Generators or Aggregations, provided that one of the Day-Ahead Bids in that hour "h" for at least one of the Market Party's Generators or Aggregations failed an LBMP or guarantee payment impact test described in Section 23.4.3.3.3.1.2 of these Mitigation Measures, or (b) for the purpose of calculating Real-Time Market penalties for a given day, h is each hour of that day in which inaccurate fuel type or fuel price or opportunity cost information was supplied in the Real-Time Market for any of the Market Party's Generators or Aggregations, provided that one of the Real-Time Bids in that hour "h" for at least one of the Market Party's Generators or Aggregations failed an LBMP or guarantee payment impact test described in Section 23.4.3.3.3.1.2 of these Mitigation Measures.

Multiplier = a factor of 1.0 or 1.5. Determined as specified below.

For violations related to fuel price and/or fuel type submissions, the ISO shall use a 1.0 Multiplier if the Market Party has not been penalized for inaccurately reporting fuel type or fuel price information over the 6 months prior to the market-day for which the penalty is being calculated. In all other cases the ISO shall use a 1.5 Multiplier.

For violations related to opportunity cost submissions, the ISO shall use a 1.0 Multiplier if the Market Party has not been penalized for inaccurately reporting opportunity cost information over the 6 months prior to the market-day for which the penalty is being calculated. In all other cases the ISO shall use a 1.5 Multiplier.

▲ BPCG $\text{payment}_g$ = (a) for the purpose of calculating Day-Ahead Market penalties for a given day, the change in the Day-Ahead Market guarantee payment for that day for Generator or Aggregation g determined when the ISO performs the guarantee payment impact test in accordance with Section 23.3.2.1.2 of these Mitigation Measures, or (b) for the purpose of calculating Real-Time Market penalties for a given day, the change in the Real-Time guarantee payment for that day for Generator or Aggregation g determined when the ISO performs the guarantee payment impact test in accordance with Section 23.3.2.1.2 of these Mitigation Measures.

Market Party $MWh_{gh}$ = (a) for the purpose of calculating Day-Ahead Market penalties, the MWh of Energy scheduled in the Day-Ahead Market for Generator or Aggregation g in hour h; or (b) for the purpose of calculating Real-Time Market penalties, the maximum of (1) the MWh of Energy that Generator or Aggregation g was scheduled to provide in the Day-Ahead Market in hour h, or (2) the MWh of Energy that Generator or Aggregation g was scheduled to provide in the Real-Time Market in hour h, or (3) the MWh of Energy produced by Generator or Aggregation g that was scheduled to provide energy in hour h in the Real-Time Market.

▲ $LBMP@PTID_{gh}$ = (a) for the purpose of calculating Day-Ahead Market penalties, the change in the Day-Ahead Market LBMP for hour h at the location of Generator or Aggregation g, as determined when the ISO performs the relevant LBMP impact test in accordance with Section 23.3.2.1.1 or 23.3.2.1.3 of these Mitigation Measures, or (b) for the purpose of calculating Real-Time Market penalties, the change in the real-time LBMP for hour h at the location of Generator or Aggregation g, as determined when the ISO performs the relevant LBMP impact test in accordance with Section 23.3.2.1.1 or 23.3.2.1.3 of these Mitigation Measures.

TCC Revenue Calc for Market $Party_h$ = (a) for the purpose of calculating Day-Ahead Market penalties, the change in TCC Revenues that the Market Party receives for hour h, determined when the ISO performs the relevant Day-Ahead Market LBMP impact test, or (b) for the purpose of calculating Real-Time Market penalties, zero.

#### 23.4.3.3.4 Virtual Bidding Penalties

23.4.3.3.4.1 If the opportunity to submit Incremental Energy Bids into the Real-Time Market that exceed Incremental Energy Bids made in the Day-Ahead Market or mitigated Day-Ahead Incremental Energy Bids where appropriate, has been revoked on a Market Party's Generator or Aggregation pursuant to Sections 23.4.7.2 and 23.4.7.3 of these Mitigation Measures, then the following virtual market penalty may be imposed on the Market Party:

Virtual market penalty = (Virtual Load MWs) * (Amount by which the hourly integrated real-time LBMP exceeds the day-ahead LBMP applicable to the Virtual Load MWs)

WHERE:

Virtual Load MWs are the scheduled MWs of Virtual Load Bid by the Market Party in the hour for which an increased real-time Bid for the Market Party's Generator or Aggregation failed the test specified in Section 23.4.7.2 of these Mitigation Measures; and

LBMP is the LBMP at which the Virtual Load MWs settled in the Day-Ahead and real-time Markets.

23.4.3.3.4.2 If the opportunity to submit Incremental Energy Bids into the Real-Time Market that are less than the Incremental Energy Bids submitted in the Day-Ahead Market (or the mitigated Day-Ahead Incremental Energy Bids where appropriate), has been revoked on a Market Party's Generator or Aggregation pursuant to Sections 23.4.7.2 and 23.4.7.3 of these Mitigation Measures, then the following virtual market penalty may be imposed on the Market Party:

Virtual market penalty = (Virtual Supply MWs) * (Amount by which the hourly integrated real-time LBMP is less than the day-ahead LBMP applicable to the Virtual Supply MWs)

WHERE:

Virtual Supply MWs are the scheduled MWs of Virtual Supply Bid by the Market Party in the hour for which a reduced real-time Bid for the Market Party's Generator or Aggregation failed the test specified in Section 23.4.7.2 of these Mitigation Measures; and

LBMP is the LBMP at which the Virtual Supply MWs settled in the Day-Ahead and real-time Markets.

**23.4.3.3.5 No Revisions to Real-Time LBMPs**

Real-Time LBMPs shall not be revised as a result of the imposition of a financial obligation as specified in this Section 23.4.3.3, except as may be specifically authorized by the Commission.

**23.4.3.4 Multipliers**

The Base Penalty Amount specified in Section 23.4.3.3.1 shall be subject to the following multipliers:

23.4.3.4.1 For the first instance of a type of conduct by a Market Party meeting the standards for mitigation, the multiplier shall be one (1).

23.4.3.4.2 For the second instance within the current or the two immediately previous capability periods of substantially similar conduct in the same market by a Market Party or its Affiliates, the multiplier shall be one (1), 23.4.3.4.3 For the third instance within the current or the two immediately previous capability periods of substantially similar conduct in the same market by a Market Party or its Affiliates, the multiplier shall be two (2),

23.4.3.4.4 For the fourth or any additional instance within the current or immediately previous capability period of substantially similar conduct in the same market by a Market Party or its Affiliates, the multiplier shall be three (3).

**23.4.3.5 Dispute Resolution**

23.4.3.5.1 Parties with of disputes arising from or relating to the imposition of a sanction under this Section 23.4.3 may utilize the dispute resolution provisions of the ISO Services Tariff. The scope of any such proceeding shall include resolution of any dispute as to legitimate justifications, under applicable legal, regulatory or policy standards, for any conduct that is asserted to warrant a penalty. Any or all of the issues in any such proceeding may be resolved by agreement of the parties.

23.4.3.5.2 Payment of a financial penalty may be withheld pending conclusion of any arbitration or other alternate dispute resolution proceeding instituted pursuant to the preceding paragraph and any petition to FERC for review under the Federal Power Act of the determination in such dispute resolution proceeding; provided, however, that interest at the ISO’s average cost of borrowing shall be payable on any part of the penalty that is withheld, and that is determined to be payable at the conclusion of the dispute resolution/FERC review process from the date of the infraction giving rise to the penalty to the date of payment. The exclusive remedy for the inappropriate imposition of a financial penalty, to the exclusion of any claim for damages or any other form of relief, shall be a determination that a penalty should not have been imposed, and a refund with interest of paid amounts of a penalty determined to have been improperly imposed, as may be determined in the applicable dispute resolution proceedings.

23.4.3.5.3 This Section 23.4.3 shall not be deemed to provide any right to damages or any other form of relief that would otherwise be barred by Section 30.11 of Attachment O or Section 23.6 of this Attachment H.

23.4.3.5.4 This Section 23.4.3 shall not restrict the right of any party to make such filing with the Commission as may otherwise be appropriate under the Federal Power Act.

**23.4.3.6 Disposition of Penalty Funds**

Except as specified in Section 23.4.4.3.2, amounts collected as a result of the imposition of financial penalties shall be credited against costs collectable under Rate Schedule 1 of the ISO Services Tariff.

## 23.4.4 Load Bid Measure

### 23.4.4.1 Purpose

As initially implemented, the ISO market rules allow loads to choose to purchase power in either the Day-Ahead Market or in the Real-Time Market, but provide other Market Parties less flexibility in opting to sell their output in the Real-Time Market. As a result of this and other design features, certain bidding practices may cause Day-Ahead LBMPs not to achieve the degree of convergence with Real-Time LBMPs that would be expected in a workably competitive market. A temporary mitigation measure is specified below as an interim remedy if conditions warrant action by the ISO until such time as the ISO develops and implements an effective long-term remedy, if needed.  These measures shall only be imposed if persistent unscheduled load causes operational problems, including but not limited to an inability to meet unscheduled load with available resources.  The ISO shall post a description of any such operational problem on its web site.

**23.4.4.2 Implementation**

23.4.4.2.1 Day-Ahead LBMPs and Real-Time LBMPs in each load zone shall be monitored to determine whether there is a persistent hourly deviation between them in any zone that would not be expected in a workably competitive market. Monitoring of Day-Ahead and real-time LBMPs shall include examination of the following two metrics (along with any additional monitoring tools and procedures that the ISO determines to be appropriate to achieve the purpose of this Section 23.4.4):

(1) The ISO shall compute a rolling average of the hourly deviation of real-time zonal LBMPs from Day-Ahead zonal LBMPs.  The hourly deviation shall be measured as: (zonal $LBMP_{real\ time}$ - zonal $LBMP_{day\ ahead}$).  Each observation of the rolling-average time series shall be a simple average of all the hourly deviations over the previous four weeks, or such other averaging period determined by the ISO to be appropriate to achieve the purpose of this Section 23.4.4.

(2) The ISO shall also compute the rolling average *percentage* deviation of real-time zonal LBMPs from Day-Ahead zonal LBMPs.  This percentage deviation shall be calculated by dividing the rolling-average hourly deviation (defined in Section 23.4.4.2.1 (1) above) by the rolling-average level of Day-Ahead zonal

LBMP over the same time period, using the averaging period(s) described in Section 23.4.4.2.1 (1), above.

23.4.4.2.2 The ISO shall also estimate and monitor the average percentage of each Load Serving Entity's load scheduled in the Day-Ahead Market, using a methodology intended to identify a sustained pattern of under-bidding as accurately as the ISO deems practicable. The average percentage will be computed over a specified time period determined by the ISO to be appropriate to achieve the purpose of this mitigation measure.

23.4.4.2.3 If the ISO determines that (i) the relationship between zonal LBMPs in a zone in the Day-Ahead Market and the Real-Time Market is not what would be expected under conditions of workable competition, (ii) one or more Load Serving Entities have been meeting a substantial portion of their loads with purchases in the Real-Time Market, and (iii) that this practice has contributed to an unwarranted divergence of LBMP between the two markets, then the following mitigation measure may be imposed. Any such measure shall be rescinded upon a determination by the ISO that any one or more of the foregoing conditions is not met.

**23.4.4.3 Description of the Measure**

23.4.4.3.1 The ISO may require a Load Serving Entity engaging in the purchasing practice described above to purchase or schedule all of its expected power requirements in the Day-Ahead Market. A Load Serving Entity subject to this requirement may purchase up to a specified portion of it actual load requirements (the “Allowance Level”) in the Real-Time Market without penalty, as determined by the ISO to be appropriate in recognition of the uncertainty of load forecasting.

23.4.4.3.2 Effective with the imposition of the foregoing requirement, all purchases in the Real-Time Market in excess of this Allowance Level (the “Penalty Level”) shall be settled at a specified premium over the applicable zone LBMP. Revenues from such premiums, if any, shall be rebated on a pro *rata* basis to the Market Parties that scheduled energy for delivery to load within New York in the Day-Ahead Market for the day in which the revenues were collected.

23.4.4.3.3 The Allowance Level and the Penalty Level shall be established by the ISO at levels deemed effective and appropriate to mitigate the market effects described in this Section 23.4.4. In addition, the Penalty Level payments shall be waived in any hour in which the Allowance Level is exceeded because of unexpected system conditions.

## 23.5 Other Mitigation Measures

### 23.5.1 Facilitation of Real-Time Mitigation in Constrained Areas

To facilitate the application of the Real-Time mitigation measures specified in this Attachment H for Constrained Areas, all Generators located in a Constrained Area that are capable of doing so shall respond to RTD Base Point Signals, unless such a Generator is subject to contractual obligations in existence prior to June 1, 2002 that would preclude such operation.

### 23.5.2 Market Power Mitigation Measures Applicable to In-City Unit Commitments for Local Reliability

23.5.2.1 If an In-City Generator is scheduled in any hour in the Day-Ahead Market to meet the reliability needs of a local system, the ISO will set the In-City Generator's Start-Up Bid to the lower of the Bid or the applicable reference level, which may include a Start-Up reference level calculated in accordance with Section 23.3.1.4.4.3 of these Mitigation Measures. In each hour an In-City Generator is scheduled in the Day-Ahead Market to meet the reliability needs of a local system, the ISO will set the In-City Generator's Minimum Generation Bid to the lower of the Bid or the applicable reference level.

### 23.5.3 Market Power Mitigation Measures Applicable to Sales of Spinning Reserves

23.5.3.1 Local reliability rules require that specified amounts of Spinning Reserves be provided by In-City Generators or Aggregations. The Spinning Reserve-capable portion of each Generator or Aggregation located in New York City must be made available to the ISO for purposes of meeting the New York City Spinning Reserve requirement.

23.5.3.2 The market power mitigation measures applicable to Spinning Reserves will be implemented when the ISO's least-cost dispatch requires that one or more of the Generators or Aggregations located in New York City be committed to meet the In-City Spinning Reserve requirement. For any day that an In-City Generator or Aggregation is committed to meet the In-City Spinning Reserve requirement under circumstances where the Generator or Aggregation would not otherwise have been committed under the ISO's least-cost dispatch, the market power mitigation measures applicable to unit commitments, as described in Section 23.5.2, would apply.

**23.5.4 FERC-Ordered Measures**

In addition to any mitigation measures specified above, the ISO shall administer, and apply when appropriate in accordance with their terms, such other mitigation measures as it may be directed to implement by order of the FERC.

## 23.8 Monitoring of Aggregations

Except for actions that are shown to be consistent with competitive conduct, moving Resources into, out of or between Aggregations, or constituting and dissolving Aggregations (a) in a manner that avoids or reduces the consequences of mitigation or financial sanctions under the ISO's Tariffs, or (b) that enables a Resource, an Aggregation, an Aggregator, an owner, or a Market Party to avoid complying with a Tariff rule, is a violation of this Services Tariff and shall be reported to the Market Monitoring Unit for possible referral to the Federal Energy Regulatory Commission's Office of Enforcement.

## 23.9 Dispute Resolution

If a Market Party has reasonable grounds to believe that it has been adversely affected because a Mitigation Measure has been improperly applied or withheld, it may utilize the dispute resolution provisions of the ISO Services Tariff to determine whether, under the standards and procedures specified above and in the Plan, the imposition of a Mitigation Measure was or would have been appropriate. In no event, however, shall the ISO be liable to a Market Party or any other person or entity for money damages or any other remedy or relief except and to the extent specified in the Plan.

## 23.10 Effective Date

These Mitigation Measures shall be effective as of the date they are approved by the FERC.

# 25 Attachment J – Determination of Day-Ahead Margin Assurance Payments and Import Curtailment Guarantee Payments

## 25.1 Introduction

If a Supplier that is eligible pursuant to Section 25.2 of this Attachment J buys out of a Day-Ahead Energy, Regulation Service or Operating Reserve schedule in a manner that reduces its Day-Ahead Margin it shall receive a Day-Ahead Margin Assurance Payment, except as noted in Sections 25.2, 25.3, 25.4, and 25.5 of this Attachment J. The purpose of such payments is to protect Suppliers' Day-Ahead Margins associated with real-time reductions after accounting for: (i) any real-time profits associated with offsetting increases in real-time Energy, Regulation Service, or Operating Reserve schedules; and (ii) any Supplier-requested real-time de-rate granted by the ISO.

In addition, a Supplier may be eligible to receive an Import Curtailment Guarantee Payment if its Import is curtailed at the request of the ISO as determined pursuant to Section 25.6 of this Attachment J.

## 25.2 Eligibility for Receiving Day-Ahead Margin Assurance Payments

### 25.2.1 General Eligibility Requirements for Suppliers to Receive Day-Ahead Margin Assurance Payments

Subject to Section 25.2.2 of this Attachment J, the following categories of Resources bid by Suppliers shall be eligible to receive Day-Ahead Margin Assurance Payments:

(i) all Self-Committed Flexible and ISO-Committed Flexible Generators, other than Energy Storage Resources and Aggregations, that are either online and dispatched by RTD or available for commitment by RTC;

(ii) Demand Side Resources committed to provide Operating Reserves or Regulation Service;

(iii) any Resource, including an Energy Storage Resource or an Aggregation, that is scheduled out of economic merit order by the ISO in response to an ISO or Transmission Owner system security need or to permit the ISO to procure additional Operating Reserves;

(iv) any Resource, including an Energy Storage Resource or an Aggregation, internal to the NYCA that is derated or decommitted by the ISO in response to an ISO or Transmission Owner system security need or to permit the ISO to procure additional Operating Reserves;

(v) Energy Limited Resources or an Aggregation comprised entirely of Energy Limited Resources with an ISO-approved real-time reduction in scheduled output from its Day-Ahead schedule; and

(vi) Limited Energy Storage Resources and Aggregations comprised entirely of Limited Energy Storage Resources scheduled to provide Regulation Service, as described in Section 25.3.2 of this ISO Services Tariff.

### 25.2.2 Exceptions

Notwithstanding Section 25.2.1 of this Attachment J, no Day-Ahead Margin Assurance Payment shall be paid to:

25.2.2.1 a Resource, otherwise eligible for a Day-Ahead Margin Assurance Payment, in hours in which the NYISO has increased the Resource's real-time minimum operating level above the Resource's Day-Ahead Market Energy schedule either: (i) at the Resource's request including through an adjustment to the Resource's self-commitment schedule; or (ii) in order to reconcile the ISO's dispatch with the Resource's actual output or to address reliability concerns that arise because the Resource is not following Base Point Signals; or (iii) an Intermittent Power Resource that depends on wind or solar energy as its fuel.

25.2.2.2 a Resource, otherwise eligible for Day-Ahead Margin Assurance Payments, in hours in which the NYISO has increased the Resource's real-time minimum operating level at the Resource's request, including through an adjustment to the Resource's self-commitment schedule, above the MW level determined by subtracting the Resource's Day-Ahead Market Regulation Service schedule from its Day-Ahead Market Energy schedule.

25.2.2.3 a Resource, otherwise eligible for Day-Ahead Margin Assurance Payments, in hours in which the Resource reduces the MW quantity specified in its real-time Regulation Capacity Bid below its Day-Ahead Market Regulation Service schedule.

25.2.2.4 a Generator, otherwise eligible for Day-Ahead Margin Assurance Payments, for (i) any hour in which the Incremental Energy Bids submitted in the Real-Time Market for that Generator exceed the Incremental Energy Bids submitted in the Day-Ahead Market, or the mitigated Day-Ahead Incremental Energy Bids where appropriate, for the portion of that Generator's Capacity that was scheduled in the Day-Ahead Market; and (ii) the two hours immediately preceding and the two hours immediately following the hour(s) in which the Incremental Energy Bids submitted in the Real-Time Market for that Generator exceed the Incremental Energy Bids submitted in the Day-Ahead Market, or the mitigated Day-Ahead Incremental Energy Bids where appropriate, for the portion of that Generator's Capacity that was scheduled in the Day-Ahead Market.

25.2.2.5 A Generator that is available for commitment by RTC and otherwise eligible for Day-Ahead Margin Assurance Payments, for (i) any hour in which the Start-Up Bids submitted in the Real-Time Market for that Generator exceed the Start-Up Bids submitted in the Day-Ahead Market, or the mitigated Day-Ahead Start-Up Bids where appropriate, and that Generator was scheduled for Energy in that hour in the Day-Ahead Market; and (ii) the two hours immediately preceding and the two hours immediately following the hour(s) in which the Start-Up Bids submitted in the Real-Time Market for that Generator exceed the Start-Up Bids submitted in the Day-Ahead Market, or the mitigated Day-Ahead Start-Up Bids where appropriate, and that Generator was scheduled for Energy or Regulation Service in that hour in the Day-Ahead Market.

25.2.2.6 A Generator that is available for commitment by RTC and otherwise eligible for Day-Ahead Margin Assurance Payments, for (i) any hour in which the dollar component of the Minimum Generation Bids submitted in the Real-Time Market for that Generator exceed the dollar component of the Minimum

Generation Bids submitted in the Day-Ahead Market, or the dollar component of the mitigated Day-Ahead Minimum Generation Bids where appropriate, and that Generator was scheduled for Energy in that hour in the Day-Ahead Market; and (ii) the two hours immediately preceding and the two hours immediately following the hour(s) in which the dollar component of the Minimum Generation Bids submitted in the Real-Time Market for that Generator exceed the dollar component of the Minimum Generation Bids submitted in the Day-Ahead Market, or the dollar component of the mitigated Day-Ahead Minimum Generation Bids where appropriate, and that Generator was scheduled for Energy in that hour in the Day-Ahead Market.

### 25.3 Calculation of Day-Ahead Margin Assurance Payments

### 25.3.1 Formula for Day-Ahead Margin Assurance Payments for Generators and Aggregations, Except for Limited Energy Storage Resources and Aggregations comprised entirely of Limited Energy Storage Resources

Subject to Sections 25.4 and 25.5 of this Attachment J, Day-Ahead Margin Assurance Payments for Generators and Aggregations, except for Limited Energy Storage Resources and Aggregations comprised entirely of Limited Energy Storage Resources, shall be determined by applying the following equations to each individual Generator or Aggregation using the terms as defined in Section 25.3.4:

$$DMAP_{hu} = max\left(0, \sum_{i \in h} CDMAP_{iu}\right)$$

where:

$$CDMAP_{iu} = CDMAPen_{iu} + \sum_{P} CDMAPres_{iup} + CDMAPreg_{iu}$$

#### 25.3.1.1 Energy Contribution for Day-Ahead Margin Assurance Payments

If the Generator's or Aggregation's (i) Day-Ahead schedule is to inject Energy (*i.e.*, greater than zero MW) and its real-time Energy schedule is lower than its Day-Ahead Energy schedule; or (ii) Day-Ahead schedule is to withdraw Energy (*i.e.*, less than zero MW) and its real-time Energy schedule is greater than its Day-Ahead Energy schedule, then:

$$CDMAPen_{iu} = \left( (DASen_{hu} - LL_{iu}) * RTPen_{iu} - \int_{LL_{iu}}^{DASen_{hu}} DABen_{hu} \right) * \frac{Seconds_i}{3600}$$

If the Generator's or Aggregation's (i) Day-Ahead Energy schedule is to inject Energy (*i.e.*, greater than zero MW) and its real-time Energy schedule is greater than or equal to its Day-Ahead Energy schedule; or (ii) Day-Ahead Energy schedule is to withdraw Energy (*i.e.*, less than zero MW), and its real-time Energy schedule is less than or equal to its Day-Ahead Energy schedule; or (iii) Day-Ahead Energy schedule is for zero MW, then:

$$CDMAPen_{iu} = min\left[ \left( (DASen_{hu} - UL_{iu}) * RTPen_{iu} + \int_{DASen_{hu}}^{UL_{iu}} RTBen_{iu} \right) * \frac{Seconds_i}{3600}, 0 \right]$$

**25.3.1.2 Operating Reserve Contribution for Day-Ahead Margin Assurance Payments**

If the Generator's or Aggregation's real-time schedule for a given Operating Reserve product, p, is lower than its Day-Ahead Operating Reserve schedule for that product then:

$$CDMAPres_{iup} = \left[ \left( DASres_{hup} - RTSres_{iup} \right) * \left( RTPres_{iup} - DABres_{hup} \right) \right] * \frac{Seconds_i}{3600}$$

If the Generator's or Aggregation's real-time schedule for a given Operating Reserve product, p, is greater than or equal to its Day-Ahead Operating Reserve schedule for that product then:

$$CDMAPres_{iup} = \left[\left(DASres_{hup} - RTSres_{iup}\right) * \left(RTPres_{iup}\right)\right] * \frac{Seconds_i}{3600}$$

#### 25.3.1.3 Regulation Service Contribution for Day-Ahead Margin Assurance Payments

If the Generator's or Aggregation's real-time Regulation Service schedule is less than its Day-Ahead Regulation Service schedule then:

$$CDMAPreg_{iu} = [(DASreg_{hu} - RTSreg_{iu}) * (RTPreg_{iu} - DABreg_{hu})] * \frac{Seconds_i}{3600} + [(-1 * RTMreg_{iu}) * max(0, RTPregm_{iu} - RTBregm_{iu})]$$

If the Generator's or Aggregation's real-time Regulation Schedule is greater than or equal to the Day-Ahead Regulation Service schedule then:

$$CDMAPreg_{iu} = \left[(DASreg_{hu} - RTSreg_{iu}) * max\left((RTPreg_{iu} - RTBreg_{iu}), 0\right)\right] * \frac{Seconds_i}{3600} + [(-1 * RTMreg_{iu}) * max(0, RTPregm_{iu} - RTBregm_{iu})]$$

### 25.3.2 Formula for Day-Ahead Margin Assurance Payments for Demand Side Resources

#### 25.3.2.1 Formula for Day-Ahead Margin Assurance Payment for Demand Side Resources

Subject to Section 25.5 of this Attachment J, Day-Ahead Margin Assurance Payments for Demand Side resources scheduled to provide Operating Reserves or Regulation Service shall be determined by applying the following equations to each individual Demand Side Resource using the terms as defined in Section 25.3.4, except for RPIiu, which is defined in Section 25.3.2.2:

$$DMAP_{hu} = max\left(0, \sum_{i \in h} CDMAP_{iu}\right)$$

where:

$$CDMAP_{iu} = \sum_{p} CDMAPres_{iup} + CDMAPreg_{iu}$$

If the Demand Side Resource's real-time schedule for a given Operating Reserve product, p, is lower than its Day-Ahead Operating Reserve schedule for that product then:

$$CDMAPres_{iup} = \left[\left(DASres_{hup} - RTSres_{iup}\right) * \left(RTPres_{iup} - DABres_{hup}\right)\right] * RPI_{iu} * \frac{Seconds_i}{3600}$$

If the Demand Side Resource's real-time schedule for a given Operating Reserve product, p, is greater than or equal to its Day-Ahead Operating Reserve schedule for that product then:

$$CDMAPres_{iup} = \left[\left(DASres_{hup} - RTSres_{iup}\right) * \left(RTSPres_{iup}\right)\right] * RPI_{iu} * \frac{Seconds_i}{3600}$$

If the Demand Side Resource's real-time Regulation Service schedule is less than its Day-Ahead Regulation Service schedule then:

$$\begin{aligned} CDMAPreg_{iu} = {} & [(DASreg_{hu} - RTSreg_{iu}) * (RTPreg_{iu} - DABreg_{hu})] * \frac{Seconds_i}{3600} \\ & + [(-1 * RTMreg_{iu}) * max(0, RTPregm_{iu} - RTBregm_{iu})] \end{aligned}$$

If the Demand Side Resource's real-time Regulation Schedule is greater than or equal to the Day-Ahead Regulation Service schedule then:

$$\begin{aligned} CDMAPreg_{iu} = {} & \left[(DASreg_{hu} - RTSreg_{iu}) * max\left((RTPreg_{iu} - RTBreg_{iu}), 0\right)\right] * \frac{Seconds_i}{3600} \\ & + [(-1 * RTMreg_{iu}) * max(0, RTPregm_{iu} - RTBregm_{iu})] \end{aligned}$$

### 25.3.2.2 Reserve Performance Index for Demand Side Resource Suppliers of Operating Reserves

The ISO shall produce a Reserve Performance Index for purposes of calculating a Day Ahead Margin Assurance Payment for a Demand Side Resource providing Operating Reserves. The Reserve Performance Index shall take account of the actual Demand Reduction achieved by the Supplier of Operating Reserves following the ISO's instruction to convert Operating Reserves to Demand Reduction.

The Reserve Performance Index shall be a factor with a value between 0.0 and 1.0 inclusive. For each interval in which the ISO has not instructed the Demand Side Resource to convert its Operating Reserves to Demand Reduction, the Reserve Performance Index shall have a value of one. For each interval in which the ISO has instructed the Demand Side Resource to convert its Operating Reserves to Demand Reduction the Reserve Performance Index shall be calculated pursuant to the following formula, provided however when UAGi is zero or less, the Reserve Performance Index shall be set to zero:

$$RPI_{iu} = min[(UAG_i \,/\, ADG_i + .1), 1]$$

Where:

| | | |
|---|---|---|
| $RPI_{iu}$ | = | Reserve Performance Index in interval *i* for Demand Side Resource *u*; |
| $UAG_i$ | = | average actual Demand Reduction for interval *i*, represented as a positive generation value; and |
| $ADG_i$ | = | average scheduled Demand Reduction for interval *i*, represented as a positive generation base point. |

### 25.3.3 Formula for Day-Ahead Margin Assurance Payments for Limited Energy Storage Resources and Aggregations comprised entirely of Limited Energy Storage Resources

Day-Ahead Margin Assurance Payments for Limited Energy Storage Resources and Aggregations comprised entirely of Limited Energy Storage Resources ("Aggregation of LESR") scheduled to provide Regulation Service shall be determined by applying the following equations to each Resource using the terms as defined in Section 25.3.4; *provided*, *however*, that a Day-Ahead Margin Assurance Payment is payable only for intervals in which the NYISO has reduced the real-time Regulation Service offer (in MWs) of a Limited Energy Storage Resource or an Aggregation of LESR and the NYISO is not pursuing LESR Energy Management for such Resource for such interval, pursuant to ISO Procedures:

If the LESR's or Aggregation of LESR's real-time Regulation Service schedule is less than its Day-Ahead Regulation Service schedule and the real-time Regulation Capacity Market Price is greater than the Day-Ahead Regulation Capacity Bid price then:

$$CDMAPreg_{iu} = [(DASreg_{hu} - RTSreg_{iu}) * (RTPreg_{iu} - DABreg_{hu})] * K_p * \frac{Seconds_i}{3600} + [(-1 * RTMreg_{iu}) * max(0, RTPregm_{iu} - RTBregm_{iu})]$$

If the LESR's or Aggregation of LESR's real-time Regulation Service schedule is less than its Day-Ahead Regulation Service schedule and the real-time Regulation Capacity Market price is less than or equal to the Day-Ahead Regulation Capacity Bid price then:

$$CDMAPreg_{iu} = [(DASreg_{hu} - RTSreg_{iu}) * (RTPreg_{iu} - DABreg_{hu})] * \frac{Seconds_i}{3600} + [(-1 * RTMreg_{iu}) * max(0, RTPregm_{iu} - RTBregm_{iu})]$$

If the LESR's or Aggregation of LESR's real-time Regulation Service schedule is greater than or equal to the Day-Ahead Regulation Service schedule then:

$$CDMAPreg_{iu} = \left[(DASreg_{hu} - RTSreg_{iu}) * max\big((RTPreg_{iu} - RTBreg_{iu}), 0\big)\right] * \frac{Seconds_i}{3600} + [(-1 * RTMreg_{iu}) * max(0, RTPregm_{iu} - RTBregm_{iu})]$$

### 25.3.4 Terms Used in this Attachment J

The terms used in the formulas in this Attachment J shall be defined as follows:

*h* is the hour that includes interval *i*;

| | | |
|---|---|---|
| $DMAP_{hu}$ | = | the Day-Ahead Margin Assurance Payment attributable in any hour *h* to any Supplier *u*; |
| $CDMAP_{iu}$ | = | the contribution of RTD interval *i* to the Day-Ahead Margin Assurance Payment for Supplier *u*; |
| $CDMAPen_{iu}$ | = | the Energy contribution of RTD interval *i* to the Day-Ahead Margin Assurance Payment for Supplier *u*; |
| $CDMAPreg_{iu}$ | = | the Regulation Service contribution of RTD interval *i* to the Day-Ahead Margin Assurance Payment for Supplier *u*; |
| $CDMAPres_{iup}$ | = | the Operating Reserve contribution of RTD interval *i* to the Day-Ahead Margin Assurance Payment for Supplier *u* determined separately for each Operating Reserve product *p*; |
| $DASen_{hu}$ | = | Day-Ahead Energy schedule for Supplier *u* in hour *h*; |
| $DASreg_{hu}$ | = | Day-Ahead schedule for Regulation Service for Supplier *u* in hour *h*; |
| $DASres_{hup}$ | = | Day-Ahead schedule for Operating Reserve product p, for Supplier *u* in hour *h*; |
| $DABen_{hu}$ | = | Day-Ahead Energy Bid cost for Supplier *u* in hour *h*, including the Minimum Generation Bid and Incremental Energy Bids; |
| $DABreg_{hu}$ | = | Day-Ahead Regulation Capacity Bid price for Supplier *u* in hour *h*; |
| $DABres_{hup}$ | = | Day-Ahead Availability Bid for Operating Reserve product *p* for Supplier *u* in hour *h*; |
| $RTSen_{iu}$ | = | real-time Energy scheduled for Supplier *u* in interval *i*, and calculated as the arithmetic average of the 6-second AGC Base Point Signals sent to Supplier *u* during the course of interval *i*; |
| $RTSreg_{iu}$ | = | real-time schedule for Regulation Service for Supplier *u* in interval *i*. |
| $RTSres_{iup}$ | = | real-time schedule for Operating Reserve product *p* for Supplier *u* in interval *i*. |
| $RTBreg_{iu}$ | = | real-time Regulation Capacity Bid price for Supplier *u* in interval *i*. |
| $RTBen_{iu}$ | = | real-time Energy Bid cost for Supplier *u* in interval *i*, including the Minimum Generation Bid and Incremental Energy Bids. |
| $RTBregm_{iu}$ | = | real-time Regulation Movement Bid price for Supplier *u* in interval *i*. |

$RTMreg_{iu}$ = real-time Regulation Movement MWs for Supplier *u* in interval *i;*

$AE_{iu}$ = either, (1) when $RTSen_{iu}$ is greater than zero MW, average actual Energy injections or withdrawals by Supplier *u* in interval *i* but not more than $RTSen_{iu}$ plus Compensable Overgeneration; or (2) when $RTSen_{iu}$ is less than or equal to zero MW, average actual Energy injections or withdrawal by Supplier *u* in interval *i*;

$ADR_{iu}$ = average Actual Demand Reduction by Supplier *u* in interval *i*

$RTPen_{iu}$ = real-time price of Energy at the location of Supplier *u* in interval *i*;

$RTPreg_{iu}$ = real-time price of Regulation Capacity at the location of Supplier *u* in interval *i*;

$RTPres_{iup}$ = real-time price of Operating Reserve product *p* at the location of Supplier *u* in interval *i*;

$RTPregm_{iu}$ = real-time Regulation Movement Market Price at the location of Supplier *u* in interval *i;*

$LL_{iu}$ = When the Day-Ahead Energy schedule is to inject, given that $RTSen_{iu} < DASen_{hu}$, either:

(a) $if\ RTSen_{iu} < EOP_{iu}, then\ LL_{iu} = max(min\left(max\left(RTSen_{iu}, \min\left((AE_{iu} + ADR_{iu}), EOP_{iu}\right)\right), DASen_{hu}\right), 0)$; or

(b) $if\ RTSen_{iu} \geq EOP_{iu}, then\ LL_{iu} = max(min\left(RTSen_{iu}, max\left((AE_{iu} + ADR_{iu}), EOP_{iu}\right), DASen_{hu}\right), 0)$

When the Day-Ahead Energy schedule is to withdraw, given that $RTSen_{iu} > DASen_{hu}$:

$$LL_{iu} = min(max(DASen_{hu}, AE_{iu}, EOP_{iu}), RTSen_{iu}, 0)$$

$UL_{iu}$ = When the Day-Ahead Energy schedule is to inject, or the Day-Ahead Energy schedule is zero MW and the real-time Energy schedule is to inject, given that $RTSen_{iu} \geq DASen_{hu}$, either:

(a) $if\ RTSen_{iu} \geq EOP_{iu} \geq DASen_{hu}, then\ UL_{iu} = min\left(RTSen_{iu}, max\left((AE_{iu} + ADR_{iu}, EOP_{iu}\right)\right)$; or

(b) otherwise, then $UL_{iu} = max\left(RTSen_{iu}, min((AE_{iu} + ADR_{iu}), EOP_{iu})\right)$

When the Day-Ahead Energy schedule is to withdraw, or the Day-Ahead Energy schedule is zero MW and the real-time Energy schedule is to withdraw, given that $RTSen_{iu} \leq DASen_{hu}$:

$$UL_{iu} = min\left(RTSen_{iu}, max\left(AE_{iu}, EOP_{iu}\right)\right)$$

$EOP_{iu}$ = the Economic Operating Point of Supplier *u* in interval *i* calculated without regard to ramp rates;

$Seconds_i$ = number of seconds in interval *i*

$KPI_{pi}$ = the factor derived from the Regulation Service Performance index for Resource *u* for interval *i* as defined in Rate Schedule 3 of this Services Tariff.

## 25.4 Exception for Generators and Aggregations Lagging Behind RTD Base Point Signals

If an otherwise eligible Generator's or Aggregation's average Actual Energy Injection in an RTD interval (*i.e.*, its Actual Energy Injections averaged over the RTD interval) is less than or equal to its penalty limit for under-generation value for that interval, as computed below, it shall not be eligible for Day-Ahead Margin Assurance Payments for that interval.

The penalty limit for under-generation value is the tolerance described in Section 15.3A.1 of Rate Schedule 3-A of this ISO Services Tariff, which is used in the calculation of the persistent under-generation charge applicable to Generators and Aggregations that are not providing Regulation Service.

**25.5 Rules Applicable to Supplier Derates**

Suppliers that request and are granted a derate of their real-time Operating Capacity, but that are otherwise eligible to receive Day-Ahead Margin Assurance Payments may receive a payment up to a Capacity level consistent with their revised Emergency Upper Operating Limit or Normal Upper Operating Limit, whichever is applicable. The foregoing rule shall also apply to a Generator or Aggregation otherwise eligible for a Day-Ahead Margin Assurance Payment in hours in which the ISO has derated the Generator's or Aggregation's Operating Capacity in order to reconcile the ISO's dispatch with the Generator's or Aggregation's actual output, or to address reliability concerns that arise because the Generator or Aggregation is not following Base Point Signals. If a Supplier's derated real-time Operating Capacity is lower than the sum of its Day-Ahead Energy, Regulation Services, and Operating Reserve schedules then when the ISO conducts the calculations described in Section 25.3 above, the DASen, DASeg and $DASres_p$ variables will be reduced by REDen, REDreg and $REDres_p$ respectively. REDen, REDreg and $REDres_p$ shall be calculated using the formulas below:

$$REDtot_{iu} = max\left(DASen_{hu} + DASreg_{hu} + \sum_p DASres_{hup} - RTUOL_{iu}, 0\right)$$

$$POTREDen_{iu} = max(DASen_{hu} - RTSen_{iu}, 0)$$

$$POTREDreg_{iu} = max(DASreg_{hu} - RTSreg_{iu}, 0)$$

$$POTREDres_{iup} = max(DASres_{hup} - RTSres_{iup}, 0)$$

$$REDen_{iu} = \left(POTREDen_{iu} / \left(POTREDen_{iu} + POTREDreg_{iu} + \sum_p POTREDres_{iup}\right)\right) * REDtot_{iu}$$

$$REDreg_{iu} = \left(POTREDreg_{iu} / \left(POTREDen_{iu} + POTREDreg_{iu} + \sum_p POTREDres_{iup}\right)\right) * REDtot_{iu}$$

$$REDres_{iup} = \left(POTREDres_{iup} / \left(POTREDen_{iu} + POTREDreg_{iu} + \sum_p POTREDres_{iup}\right)\right) * REDtot_{iu}$$

where:

$RTUOL_{iu}$ = The real-time Emergency Upper Operating Limit or Normal Upper Operating Limit whichever is applicable of Supplier *u* in interval *i*

$REDtot_{iu}$ = The total amount in MW that Day-Ahead schedules need to be reduced to account for the derate of Supplier *u* in interval *i*

$REDen_{iu}$ = The amount in MW that the Day-Ahead Energy schedule is reduced for the purposes of calculating the Day-Ahead Margin Assurance Payment for Supplier *u* in interval *i*

$REDreg_{iu}$ = The amount in MW that Supplier *u*'s Day-Ahead Regulation Service schedule is reduced for the purposes of calculating the Day-Ahead Margin Assurance Payment in interval *i*

$REDres_{iup}$ = The amount in MW that Supplier *u*'s Day-Ahead Operating Reserve schedule for Operating Reserves product *p* is reduced for the purposes of calculating the Day-Ahead Margin Assurance Payment in interval *i*

$POTREDen_{iu}$ = The potential amount in MW that Supplier *u*'s Day-Ahead Energy schedule could be reduced for the purposes of calculating the Day-Ahead Margin Assurance Payment for Supplier *u* in interval *i*

$POTREDreg_{iu}$ = The potential amount in MW that Supplier *u*'s Day-Ahead Regulation Service schedule could be reduced for the purposes of calculating the Day-Ahead Margin Assurance Payment for Supplier *u* in interval *i*

$POTREDres_{iup}$ = The potential amount in MW that Supplier *u*'s Day-Ahead Operating Reserve Schedule for Operating Reserve product *p* could be reduced for the purposes of calculating the Day-Ahead Margin Assurance Payment for Supplier *u* in interval *i*

All other variables are as defined above.

## 25.6 Import Curtailment Guarantee Payments

### 25.6.1 Eligibility for an Import Curtailment Guarantee Payment for an Import Curtailed by the ISO

In the event that the Energy injections for an Import scheduled by RTC or RTD at a Proxy Generator Bus, other than a CTS Enabled Proxy Generator Bus, are Curtailed at the request of the ISO, and (i) the real-time Energy Profile MW is equal to or greater than the Day-Ahead Energy Schedule for that interval, and (ii) the real-time Decremental Bid is less than or equal to the default real-time Decremental Bid amount as established by ISO procedures, then the Supplier or Transmission Customer that is subjected to the Curtailment, in addition to the charge for Energy Imbalance, shall be eligible for an Import Curtailment Guarantee Payment as determined in Section 25.6.2 of this Attachment J. Suppliers scheduling Imports at CTS Enabled Proxy Generator Buses shall not be eligible for Import Curtailment Guarantee payments for those Transactions.

### 25.6.2 Formula for an Import Curtailment Guarantee Payment for a Supplier Whose Import Was Curtailed by the ISO

A Supplier eligible under Section 25.6.1 of this Attachment J shall receive an Import Curtailment Guarantee Payment for its curtailed Energy injections that is equal to the daily sum of the hourly payments which, for each hour of Import t, is calculated as the greater of the interval payments determined for the hour or zero as seen in the formula below.

Import Curtailment Guarantee Payment to Supplier u in association with Import t =

$$\sum_{h=1}^{N} max\left(\sum_{i=1}^{H}\big(RTLBMP_{ti} - \ max(DADecBid_{ti}, 0)\big) * \ (DAen_{ti} - \ RTDen_{ti}) * \frac{S_i}{3600}, 0\right)$$

Where

$N$ = the number of hours in the Dispatch Day

$H$ = the number of intervals in hour *h*

$i$ = the relevant interval in hour *h*;

$S_i$ = number of seconds in interval *i*;

$RTLBMP_{t,i}$ = the real-time LBMP, in $/MWh, for interval *i* at the Proxy Generator Bus which is the source of the Import *t*.

$DADecBid_{t,i}$ = the Day Ahead Decremental Bid price associated with the Day-Ahead energy schedule, in $/MWh, for Import *t* in hour h containing interval *i*;

$DAen_{t,i}$ = the Day Ahead scheduled Energy injections, in MWh, for Import t in hour *h* containing interval *i* as determined by Security Constrained Unit Commitment (SCUC); and

$RTDen_{t,i}$ = the scheduled Energy injections, in MWh, for Import *t* in interval *i* as determined by Real-Time Dispatch (RTD).

## 26.4 Operating Requirement and Bidding Requirement

### 26.4.1 Purpose and Function

The Operating Requirement is a measure of a Customer's expected financial obligations to the ISO based on the nature and extent of that Customer's participation in ISO-Administered Markets. A Customer shall be required to allocate Unsecured Credit, where allowed, and/or provide collateral in an amount equal to or greater than its Operating Requirement. Upon a Customer's written request, the ISO will provide a written explanation for any changes in the Customer's Operating Requirement.

The Bidding Requirement is a measure of a Customer's potential financial obligation to the ISO based upon the bids that Customer seeks to submit in an ISO-administered TCC or ICAP auction. A Customer shall be required to allocate Unsecured Credit, where allowed, and/or provide collateral in an amount equal to or greater than its Bidding Requirement prior to submitting bids in an ISO-administered TCC or ICAP auction.

### 26.4.2 Calculation of Operating Requirement

The Operating Requirement shall be equal to the sum of (i) the Energy and Ancillary Services Component; (ii) the External Transaction Component; (iii) the UCAP Component; (iv) the TCC Component; (v) the WTSC Component; (vi) the Virtual Transaction Component; (vii) the DADRP Component; (viii) the DSASP Component; (ix) the Projected True-Up Exposure Component; and (x) the Former RMR Generator Component, where:

#### 26.4.2.1 Energy and Ancillary Services Component

The Energy and Ancillary Services Component shall be equal to:

(a) For Customers without a prepayment agreement, the greater of either:

$$\frac{Basis\ Amount\ for\ Energy\ and\ Ancillary\ Services}{Days\ in\ Basis\ Month} * 16$$

- or -

$$\frac{\begin{array}{c}Total\ Charges\ Incurred\ for\ Energy\ and\\ Ancillary\ Services\ for\ Previous\ Ten\ (10) Days\end{array}}{10} * 16$$

(b) For Customers that qualify for a prepayment agreement, subject to the ISO's credit analysis and approval, and execute a prepayment agreement in the form provided in Appendix K-1, the greater of either:

$$\frac{Basis\ Amount\ for\ Energy\ and\ Ancillary\ Services}{Days\ in\ Basis\ Month} * 3$$

-or-

$$\frac{\begin{array}{c}Total\ Charges\ Incurred\ for\ Energy\ and\\ Ancillary\ Services\ for\ Previous\ Ten\ (10) Days\end{array}}{10} * 3$$

(c) For new Customers, the ISO shall determine a substitute for the Basis Amount for Energy and Ancillary Services for use in the appropriate formula above equal to:

$$EPL * 720 * AEP$$

where:

| | | |
|---|---|---|
| EPL | = | estimated peak Load for the Capability Period; and |
| AEP | = | average Energy and Ancillary Services price during the Prior Equivalent Capability Period after applying the Price Adjustment. |

**26.4.2.2 External Transaction Component**

The External Transaction Component shall equal the sum of the Customer's (i) Import Credit Requirement, (ii) Export Credit Requirement, (iii) Wheels Through Credit Requirement, and (iv) the net amount owed to the ISO for the settled External Transaction Component Transactions.

#### 26.4.2.2.1 Import Credit Requirement

For a given month, the Import Credit Requirement shall apply to any Customer that Bids to Import in the Day-Ahead Market ("DAM") unless (i) the Customer has at least 50 scheduled Day-Ahead Import Bids in the three-month period ending on the 15th day of the preceding month (or the six-month period ending on the 15th day of the preceding month if the Customer has fewer than 50 scheduled Day-Ahead Import Bids in the immediately preceding three-month period), and (ii) fewer than 25% of the MWhs of such scheduled Day-Ahead Import Bids were settled at a loss to the Customer.

The Import Credit Requirement shall equal the sum of the amounts calculated for each Bid in accordance with the appropriate formulas below:

**(1) Upon submission of a DAM Import Bid until posting of the applicable DAM schedule/price.**

The ISO will calculate the required credit support for pending DAM Import Bids for a market day three days prior to the DAM close for that market day. The ISO will calculate the required credit support for DAM Import Bids that are submitted after the commencement of the initial credit evaluation upon Bid submission. The ISO will categorize each Import Bid into one of the 33 Import Price Differential ("IPD") groups set forth in the IPD chart in Section 26.4.2.2.4 below, as appropriate, based upon the season, weekday/weekend, holiday, and time-of-day of the Import Bid. For each Proxy Generator Bus, the amount of credit support required in \$/MWh that applies to an Import Bid shall equal the 98th percentile level of the following: the hourly average Energy price calculated in the Real-Time Market at the location associated with the Import Bid, minus the Energy price calculated in the DAM at the same location and time, with the dataset used to perform this calculation consisting of all hours that are in the same IPD group as the hour to which the Import Bid applies in the previous one (1) year ending on the last day of the calendar month preceding the month to which the Import Bid applies and in the previous five (5) years ending on the last day of the calendar month preceding the month to which the Import Bid applies (“Import Price Differential”). The Import Price Differential will be calculated by applying a weight of 1/3 to the previous one (1) year ending on the last day of the calendar month preceding the month to which the Import Bid applies and a weight of 2/3 to the previous five (5) years ending on the last day of the calendar month preceding the month to which the Import Bid applies. The amount of credit support required in \$/MWh shall not be less than \$0/MWh.

The credit requirement for each Import Bid shall be calculated as follows:

$$Bid_{MWhB} * Max\ (IPD_{CS}, 0)$$

Where:

| | | |
|---|---|---|
| $Bid_{MWhB}$ | = | the total quantity of MWhs that a Customer Bids to Import in a particular hour and at a particular location. |
| $IPD_{CS}$ | = | the amount of credit support required, in \$/MWh, for an Import Bid as described above, for the location associated with the Import Bid and for the IPD group that contains the hour to which the Import Bid applies. |

**(2) Upon posting of the applicable DAM schedule/price until completion of the hour Bid in real-time for a DAM Import Bid.**

The credit requirement for each Import Bid shall be calculated as follows:

$$SchBid_{MWhI} * Max(IPD_{CS}, 0)$$

Where:

$SchBid_{MWhI}$ = the total quantity of MWhs that is scheduled in the DAM in a particular hour and at a particular location as a result of the Customer's Import Bid.

$IPD_{CS}$ = the amount of credit support required, in $/MWh, for an Import Bid as described above, for the location associated with the Import Bid and for the IPD group that contains the hour to which the Import Bid applies.

**(3) Upon completion of the hour Bid in real-time for a DAM Import Bid until the net amount owed to the ISO is determined for settled External Transactions.**

The credit requirement for each Import Bid shall be calculated as follows:

$$Max\big((BalPay_{\$} - DAMPay_{\$}), 0\big)$$

Where:

$BalPay_{\$}$ = $(SchBid_{MWhI} – Actual_{MWhI})$ * RT $LBMP_I$

$DAMPay_{\$}$ = $SchBid_{MWhI}$ * DAM $LBMP_I$

$SchBid_{MWhI}$ = the total quantity of MWhs that is scheduled in the DAM in a particular hour at a particular location as a result of the Customer's Import Bid.

$Actual_{MWhI}$ = the total quantity of MWhs that is scheduled in real-time associated with the Customer's Import Bid in a particular hour and at a particular location for the hour completed.

DAM $LBMP_I$ = the Day-Ahead LBMP in a particular hour and at a particular location associated with the Customer's Import Bid.

RT $LBMP_I$ = the Real-Time LBMP in a particular hour and at a particular location associated with the Customer's Import Bid.

**26.4.2.2.2 Export Credit Requirement**

The Export Credit Requirement shall apply to any Customer that Bids to Export from the DAM or Hour-Ahead Market ("HAM").

The Export Credit Requirement shall equal the sum of the amounts calculated for each Bid in accordance with the appropriate formulas below:

**(1) Upon submission of a DAM Export Bid until posting of the applicable DAM schedule/price.**

The ISO will calculate the required credit support for pending DAM Export Bids for a market day three days prior to the DAM market close for that market day. The ISO will calculate the required credit support for DAM Export Bids that are submitted after the commencement of the initial credit evaluation upon Bid submission. The ISO will categorize each Export Bid into one of the 28 Export Price Differential ("EPD") groups set forth in the EPD chart in Section 26.4.2.2.4 below, as appropriate, based upon the season, weekday/weekend, holiday, and time-of-day of the Export Bid. For each Proxy Generator Bus, the amount of credit support required in $/MWh that applies to an Export Bid shall equal the 97$^{th}$ percentile level of the following: the Energy price calculated in the DAM at the location associated with the Export Bid, minus the hourly average Energy price calculated in the Real-Time Market at the same location and time, with the dataset used to perform this calculation consisting of all hours that are in the same EPD group as the hour to which the Export Bid applies in the previous one (1) year ending on the last day of the calendar month preceding the month to which the Export Bid applies and in the previous five (5) years ending on the last day of the calendar month preceding the month to which the Export Bid applies ("Export Price Differential"). The Export Price Differential will be calculated by applying a weight of 1/3 to the previous one (1) year ending on the last day of the calendar month preceding the month to which the Export Bid applies and a weight of 2/3 to the previous five (5) years ending on the last day of the calendar month preceding the month to which the Export Bid applies. The amount of credit support required in \$/MWh shall not be less than \$0/MWh.

The credit requirement for all DAM Export Bids with the same hour/date and location shall be calculated as follows:

$$\left(Max\left(\left(Max_N(Bid_{MWh} * \ Bid_{\$E})\right), (BidMax_{MWhB} * \ EPD_{CS})\right)\right)$$

Where:

| | | |
|---|---|---|
| $Bid_{MWh}$ | = | the total quantity of MWhs that a Customer Bids to Export in the DAM in a particular hour and at a particular location at or below each Bid Price. |
| $Bid_{\$E}$ | = | the Bid Price in \$/MWh at which the Customer Bids to purchase the $Bid_{MWh}$ of Exports in a particular hour and at a particular location. |
| N | = | the set of hourly Export Bid Prices in a particular hour and at a particular location. |
| $BidMax_{MWhB}$ | = | the total quantity of MWhs that a Customer Bids to Export in the DAM in a particular hour and at a particular location. |
| $EPD_{CS}$ | = | the amount of credit support required, in \$/MWh, for an Export Bid as described above, for the location associated with the Export Bid and for the EPD group that contains the hour to which the Export Bid applies. |

**(2) Upon posting of the applicable DAM schedule/price until completion of hour Bid in real-time for a DAM Export Bid.**

The credit requirement for each Export Bid shall be calculated as follows:

$$\left(SchBid_{MWhE} * \ \left(Max(EPD_{CS}, DAM\ LBMP_E)\right)\right)$$

Where:

| | | |
|---|---|---|
| $SchBid_{MWhE}$ | = | the total quantity of MWhs that is scheduled in the DAM in a particular hour at a particular location as a result of the Customer's Export Bid. |
| $EPD_{CS}$ | = | the amount of credit support required, in \$/MWh, for an Export Bid as described above, for the location associated with the Export Bid and for the EPD group that contains the hour to which the Export Bid applies. |
| DAM $LBMP_E$ | = | the Day-Ahead LBMP in a particular hour and at a particular location associated with the Customer's Export Bid. |

**(3) From submission of a HAM Export Bid until completion of the hour Bid in real-time.**

**i. Non-CTS Interface Bids to Export .**

The ISO will calculate the required credit support for pending HAM non-CTS Interface Bids to Export for a market day three days prior to the DAM close for that market day. The ISO will calculate the required credit support for HAM non-CTS Interface Bids to Export that are submitted after the commencement of the initial credit evaluation upon Bid submission. The amount of credit support required in $/MWh that applies to HAM non-CTS Interface Bids Export in the same hour/date and at the same location shall equal the maximum amount of the payment potentially due to the ISO based on the MWhs of Exports Bid for purchase at each bid price in a particular hour and at a particular location.

The credit requirement for all HAM non-CTS Interface Bids to Export with the same hour/date and location shall be calculated as follows:

$$\left(Max_N\left(\left(Max(Bid_{MWhE}, 0)\right) * \ Bid_{\$E}\right)\right)$$

Where:

| | | |
|---|---|---|
| $Bid_{MWhE}$ | = | the total quantity of MWhs that a Customer Bids to Export in the HAM in a particular hour and at a particular location at or below each bid price minus the MWhs of Exports scheduled in the DAM in the same hour at the same location. |
| $Bid_{\$E}$ | = | the bid price in $/MWh at which the Customer Bids to purchase the $Bid_{MWhE}$ of Exports in a particular hour and at a particular location. |
| N | = | the set of hourly Export bid prices in a particular hour and at a particular location. |

**ii. CTS Interface Bids to Export.**

For CTS Interface Bids to Export credit support will be calculated at HAM close.

The amount of credit support required in $/MWh that applies to such bid shall equal the sum of the time-weighted hourly RTC price for each of the 15-minute intervals within the bid hour, not to be less than zero.

The credit requirement for each CTS Interface Bid to Export shall be calculated as follows:

$$Max\left(\sum_{N}\left(RTC_{\$/MWhcts} * Bid_{MWhscts} * Hourly\ Weight\right), 0\right)$$

Where:

| | | |
|---|---|---|
| N | = | each 15-minute interval within the bid hour. |
| $RTC_{\$/MWhcts}$ | = | most recently available RTC price for N in $/MWh at the location associated with the CTS Interface Bid to Export |
| $Bid_{MWhscts}$ | = | the total quantity of MWhs in a Customer's CTS Interface Bid to Export for N in a particular hour and at a particular location minus the MWhs of Exports scheduled in the DAM in same hour at the same location. |
| Hourly Weight | = | 0.25 |

**(4) Upon completion of the hour Bid in real-time for an Export Bid until the net amount owed to the ISO is determined for settled External Transactions.**

The amount of credit support required will equal the sum of the Day-Ahead Credit Calculation and Real-Time Credit Calculation for each completed hour.

The credit requirement for each Export Bid shall be calculated as follows:

Day-Ahead Credit Calculation + Real-Time Credit Calculation

The Day-Ahead Credit Calculation only applies to DAM Export Bids and the Real-Time Credit Calculation applies to all HAM Export Bids including HAM Bids associated with a DAM Bid.

Where:

Day-Ahead Credit Calculation = Max (Adjusted Export Day-Ahead Credit Calculation, 0)

Adjusted Export Day-Ahead Credit Calculation = the credit requirement calculated in accordance with section 26.4.2.2.2(2) minus the Balancing Payment.

$$Balancing\ Payment = Max\big((SchBid_{MWhE} - Actual_{MWhE}), 0\big) * RT\ LBMP_{E}$$

$SchBid_{MWhE}$ = the total quantity of MWhs that is scheduled in the DAM in a particular hour and at a particular location as a result of the Customer's Export Bid.

$Actual_{MWhE}$ = the total quantity of MWhs that is scheduled in real-time associated with the Customer's Export Bid in a particular hour and at a particular location for the hour completed.

$RT\ LBMP_{E}$ = the Real-Time LBMP in a particular hour and at a particular location associated with the Customer's Export Bid.

$$Real\text{-}Time\ Credit\ Calculation = Max\Big(\big(Max\big((Actual_{MWhE} - SchBid_{MWhE}), 0\big) * RT\ LBMP_{E}\big), 0\Big)$$

$Actual_{MWhE}$ = the total quantity of MWhs that is scheduled in real-time associated with the Customer's Export Bid in a particular hour and at a particular location for the hour completed.

$SchBid_{MWhE}$ = the total quantity of MWhs that is scheduled in the DAM in a particular hour and at a particular location as a result of the Customer's Export Bid.

$RT\ LBMP_{E}$ = the Real-Time LBMP in a particular hour and at a particular location associated with the Customer's Export Bid.

**26.4.2.2.3 Wheels Through Credit Requirement**

The Wheels Through Credit Requirement shall apply to any Customer that Bids to Wheel Through in the DAM or HAM.

The Wheels Through Credit Requirement shall equal the sum of the amounts calculated for each Bid in accordance with the appropriate formulas below:

**(1) Upon submission of a DAM Wheels Through Bid until posting of the applicable DAM schedule/price.**

The ISO will calculate the required credit support for pending DAM Wheels Through Bids for a market day three days prior to the DAM close for that market day. The ISO will calculate the required credit support for DAM Wheels Through Bids that are submitted after the commencement of the initial credit evaluation upon Bid submission. The amount of credit support required in \$/MWh that applies to the DAM Wheels Through Bid shall equal the maximum payment potentially due to the ISO based on the Customer's Bid Prices on the Bid curve. The credit requirement for each Wheels Through Bid shall be calculated as follows:

$$Max\left(Max_N\left(BidPt_{MWhN} * Bid\$_{\$/MWhN}\right), 0\right)$$

Where:

| | | |
|---|---|---|
| N | = | each Bid Price on the Bid curve. |
| $BidPt_{MWhN}$ | = | the MWhs associated with the Bid Price on the Bid curve. |
| $Bid\$_{\$/MWhN}$ | = | the amount that the customer is willing to pay for congestion in \$/MWh on the Bid curve associated with the Customer's Wheels Through Bid. |

**(2) Upon posting of the applicable Wheels Through DAM schedule/price until completion of the hour Bid in real-time.**

The credit requirement for each DAM Wheels Through Bid shall be calculated as follows:

$$Max(SchBid_{MWhW} * (DAM\ LBMP_{POW} - DAM\ LBMP_{POI}), 0)$$

Where:

$SchBid_{MWhW}$ = the total quantity of MWhs scheduled in the DAM as a result of the Customer's Bid to schedule Wheels Through.

DAM $LBMP_{POI}$ = the Day-Ahead LBMP in the hour and at the Point of Injection associated with the Wheels Through Bid.

DAM $LBMP_{POW}$ = the Day-Ahead LBMP in the hour and at the Point of Withdrawal associated with the Wheels Through Bid.

**(3) Upon creation of a HAM Wheels Through Bid until the completion of the hour Bid in real-time.**

The ISO will calculate the required credit support for pending HAM Wheels Through Bids for a market day three days prior to the DAM close for that market day. The ISO will calculate the required credit support for HAM Wheels Through Bids that are submitted after the commencement of the initial credit evaluation upon Bid submission. The amount of credit support required in $/MWh that applies to HAM Wheels Through Bid shall equal the price of the maximum value of exposure based on bid prices on the Bid curve.

The credit requirement for each Wheels Through Bid shall be calculated as follows:

$$Max\left(Max_N\left(Max(BidPt_{MWhW}, 0) * Bid\$_{\$/MWhN}\right), 0\right)$$

Where:

N = each bid price on the Bid curve.

$BidPt_{MWhW}$ = the MWhs associated with the bid price on the Bid curve minus the MWhs of the DAM Bid with same hour/date, location and Bid transaction ID.

$Bid\$_{\$/MWhN}$ = the amount that the customer is willing to pay for congestion in $/MWh on the Bid curve associated with the Customer's Wheels Through Bid.

**(4) Upon completion of the hour Bid in real-time for a Wheels Through Bid until the net amount owed to the ISO is determined for settled External Transactions.**

The amount of credit support required will equal the sum of the Day-Ahead Credit Calculation and Real-Time Credit Calculation for each completed hour. The credit requirement for each Wheels Through Bid shall be calculated as follows:

Day-Ahead Credit Calculation + Real-Time Credit Calculation

The Day-Ahead Credit Calculation only applies to DAM Wheels Through Bids and the Real-Time Credit Calculation applies to all HAM Wheels Through Bids including HAM Bids associated with a DAM Bid.

Where:

Day-Ahead Credit Calculation = Max (Adjusted Wheels Through Day-Ahead Credit Calculation, 0)

Adjusted Wheels Through Day-Ahead Credit Calculation = the credit requirement calculated in section 26.4.2.2.3(2) minus the Balancing Payment.

$$Balancing\ Payment = Max\big((SchBid_{MWhW} - Actual_{MWhW}), 0\big) * (RT\ LBMP_{POW} - RT\ LBMP_{POI})$$

$SchBid_{MWhW}$ = the total quantity of MWhs that is scheduled in the DAM as a result of the Customer's Wheels Through Bid.

$Actual_{MWhW}$ = the total quantity of MWhs that is scheduled in real-time associated with the Customer's Wheels Through Bid for the hour completed.

$RT\ LBMP_{POI}$ = the Real-Time LBMP in the hour and at the Point of Injection associated with the Wheels Through Bid.

$RT\ LBMP_{POW}$ = the Real-Time LBMP in the hour and at the Point of Withdrawal associated with the Wheels Through Bid.

$$Real\text{-}Time\ Credit\ Calculation = Max\Big(Max\big((Actual_{MWhW} - SchBid_{MWhW}), 0\big) * (RT\ LBMP_{POW} - RT\ LBMP_{POI}), 0\Big)$$

$SchBid_{MWhW}$ = the total quantity of MWhs that is scheduled in the DAM as a result of the Customer's Bid to Wheel Through Energy.

$Actual_{MWhW}$ = the total quantity of MWhs that is scheduled in real-time associated with the Customer's Wheels Through Bid for the hour completed.

RT $LBMP_{POI}$ = the Real-Time LBMP in the hour and at the Point of Injection associated with the Wheels Through Bid.

RT $LBMP_{POW}$ = the Real-Time LBMP in the hour and at the Point of Withdrawal associated with the Wheels Through Bid.

**26.4.2.2. 4 Calculation of Price Differentials**

**Import Price Differential (IPD) Groups**

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| **Summer** | **IPD Group For Each Proxy Generator Bus** |
|---|---|
| HB07–09 | IPD-1 |
| HB10–12 | IPD-2 |
| HB13–17 | IPD-3 |
| HB18 | IPD-4 |

| | |
|---|---|
| HB19-20 | IPD-5 |
| HB21-22 | IPD-6 |
| Weekend/ Holiday (HB07–08) | IPD-7 |
| Weekend/ Holiday (HB09–12) | IPD-8 |
| Weekend/ Holiday (HB13–14) | IPD-9 |
| Weekend/ Holiday (HB15–16) | IPD-10 |
| Weekend/ Holiday (HB17–18) | IPD-11 |
| Weekend/ Holiday (HB19–22) | IPD-12 |
| Night (HB00,23) | IPD-13 |
| Night (HB01-06) | IPD-14 |
| **Winter** | |
| HB08–09 | IPD-15 |
| HB10–12 | IPD-16 |
| HB13–15 | IPD-17 |
| HB16-17 | IPD-18 |
| HB18-20 | IPD-19 |
| HB21-22 | IPD-20 |
| Weekend/ Holiday (HB16–20) | IPD-21 |
| Weekend/ Holiday (Other HB08-22) | IPD-22 |
| Night (HB00,01,23) | IPD-23 |
| Night (HB02-05) | IPD-24 |
| Night (HB06-07) | IPD-25 |
| **Rest-of-Year** | |
| HB07–10 | IPD-26 |
| HB11–14 | IPD-27 |
| HB15–19 | IPD-28 |
| HB20-22 | IPD-29 |
| Weekend/ Holiday (HB17–20) | IPD-30 |
| Weekend/ Holiday (Other HB07-22) | IPD-31 |
| Night (HB00,06,23) | IPD-32 |
| Night (HB01-05) | IPD-33 |

Where:

| | | |
|---|---|---|
| Summer | = | May, June, July, and August |
| Winter | = | December, January, and February |
| Rest-of-Year | = | March, April, September, October, and November |
| Weekend | = | Saturday and Sunday |

| | | |
|---|---|---|
| Holiday | = | NERC-defined holidays |
| HB | = | Hour Beginning x:00 |

**Export Price Differential (EPD) Groups**

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| Summer | EPD Group For Each Proxy Generator Bus |
|---|---|
| HB07–09 | EPD-1 |
| HB10–11 | EPD-2 |
| HB12-13 | EPD-3 |
| HB14-17 | EPD-4 |
| HB18-20 | EPD-5 |
| HB21-22 | EPD-6 |
| Weekend/ Holiday (HB13-19) | EPD-7 |
| Weekend/ Holiday (Other HB07-22) | EPD-8 |

| | |
|---|---|
| Night (HB00,23) | EPD-9 |
| Night (HB01-06) | EPD-10 |
| **Winter** | |
| HB07–09 | EPD-11 |
| HB10–12 | EPD-12 |
| HB13–15 | EPD-13 |
| HB16-17 | EPD-14 |
| HB18-20 | EPD-15 |
| HB21-22 | EPD-16 |
| Weekend/ Holiday (HB16–20) | EPD-17 |
| Weekend/ Holiday (Other HB07-22) | EPD-18 |
| Night (HB02-04) | EPD-19 |
| Night (Other HB23-06) | EPD-20 |
| **Rest-of-Year** | |
| HB07–10 | EPD-21 |
| HB11–14 | EPD-22 |
| HB15–19 | EPD-23 |
| HB20-22 | EPD-24 |
| Weekend/ Holiday (HB17–20) | EPD-25 |
| Weekend/ Holiday (Other HB07-22) | EPD-26 |
| Night (HB00,06,23) | EPD-27 |
| Night (HB01-05) | EPD-28 |

Where:

| | | |
|---|---|---|
| Summer | = | May, June, July, and August |
| Winter | = | December, January, and February |
| Rest-of-Year | = | March, April, September, October, and November |
| Weekend | = | Saturday and Sunday |
| Holiday | = | NERC-defined holidays |
| HB | = | Hour Beginning x:00 |

### 26.4.2.3 UCAP Component

The UCAP Component shall be equal to the total of all amounts then-owed (billed and unbilled) for UCAP purchased in the ISO-administered markets.

#### 26.4.2.4 TCC Component

The TCC Component shall be equal to the amount calculated in accordance with Section 26.4.2.4.1; *provided however*, that upon initial award of a TCC until the ISO receives payment for the TCC, the ISO will hold the greater of the payment obligation for the TCC or the credit requirement for the TCC calculated in accordance with this Section 26.4.2.4.

#### 26.4.2.4.1 Auction TCC Holding Requirement

This Section 26.4.2.4.1 applies to all TCCs regardless of whether awarded in the Centralized TCC Auction and Balance-of-Period Auction or otherwise; provided, however, for purposes of this Section 26.4.2.4, Incremental TCCs and Grandfathered TCCs shall be considered as a series of one-year TCCs for the entire duration that such TCCs remain valid.

The credit requirement pursuant to this Section 26.4.2.4.1 shall equal the sum of the amounts calculated in accordance with the appropriate per TCC term-based formulas listed below. The ISO will not impose a credit requirement on TCCs that have been sold by a Market Participant in the Centralized TCC Auction or Balance-of-Period Auction.

#### 26.4.2.4.1.1 Two-Year TCCs:

(1) upon initial award of a two-year TCC (including a Fixed Price TCC with a two-year duration) until completion of the final round of the current two-year Sub-Auction, the sum of the first year and second year amounts, which will be calculated as follows:

First Year:
the amount calculated in accordance with the one-year TCC formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of a one-year TCC in the final round of the one-year Sub-Auction in the prior Capability Period Centralized TCC Auction with the same POI and POW combination as the two-year TCC.

Second Year:

the amount calculated in accordance with the one-year TCC formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of that two-year TCC (or, in the case of a Fixed Price TCC, a two-year TCC with the same POI and POW combination as the Fixed Price TCC) minus the market clearing price of a one-year TCC in the final round of the one-year Sub-Auction in the prior Capability Period Centralized TCC Auction with the same POI and POW combination as the two-year TCC

(2) upon completion of the final round of the current two-year Sub-Auction until completion of the final round of the current one-year Sub-Auction, the sum of the first year and second year amounts, which will be calculated as follows:

First Year:

the amount calculated in accordance with the one-year TCC formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of a one-year TCC in the final round of the one-year Sub-Auction in the prior Capability Period Centralized TCC Auction with the same POI and POW combination as the two-year TCC

Second Year:

the amount calculated in accordance with the one-year TCC formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of a two-year TCC in the final round of the current two-year Sub-Auction with the same POI and POW combination as the two-year TCC minus the market clearing price of a one-year TCC in the final round of the one-year Sub-Auction in the prior Capability Period Centralized TCC Auction with the same POI and POW combination as the two-year TCC

(3) upon completion of the final round of the current one-year Sub-Auction until completion of the Balance-of-Period Auction for the first month of the two-year TCC, the sum of the first year and second year amounts, which will be calculated as follows:

<u>First Year</u>:

the amount calculated in accordance with the one-year TCC formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of a one-year TCC in the final round of the current one-year Sub-Auction with the same POI and POW combination as the two-year TCC

<u>Second Year</u>:

the amount calculated in accordance with the one-year TCC formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of a two-year TCC in the final round of the current two-year Sub-Auction with the same POI and POW combination as the two-year TCC minus the market clearing price of a one-year TCC in the final round of the current one-year Sub-Auction with the same POI and POW combination as the two-year TCC

(4) upon completion of the Balance-of-Period Auction for the first month of the two-year TCC until completion of the final round of the six-month Sub-Auction in the next Centralized TCC Auction, the sum of the first year and second year amounts, which will be calculated as follows:

<u>First Year</u>:

the amount calculated in accordance with the appropriate Balance-of-Period Auction holding requirement formulas set forth in Section 26.4.2.4.1.6 below

Second Year:

the amount calculated in accordance with the one-year TCC formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of a two-year TCC in the final round of the two-year Sub-Auction in which the TCC was purchased (or, in the case of a Fixed Price TCC, the final round of the two-year Sub-Auction of the Centralized TCC Auction in which the six-month Sub-Auction made transmission capacity available to support the sale of TCCs for the first Capability Period in which the applicable Fixed Price TCC would be valid) with the same POI and POW combination as the two-year TCC minus the market clearing price of a one-year TCC in the final round of the one-year Sub-Auction that directly followed the two-year Sub-Auction in which the TCC was purchased (or, in the case of a Fixed Price TCC, the two-year Sub-Auction of the Centralized TCC Auction in which the six-month Sub-Auction made transmission capacity available to support the sale of TCCs for the first Capability Period in which the applicable Fixed Price TCC would be valid) with the same POI and POW combination as the two-year TCC

(5) upon completion of the final round of the six-month Sub-Auction for the final six months of the first year of the two-year TCC until completion of the Balance-of-Period Auction immediately preceding the final six months of the first year of the two-year TCC, the sum of the first year and second year amounts, which will be calculated as follows:

First Year:

the amount calculated in accordance with the six-month TCC formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of a six-month TCC in the final round of the six-month Sub-Auction with the same POI and POW combination as the two-year TCC

Second Year:

the amount calculated in accordance with the one-year TCC formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of a one-year TCC in the single round one-year Sub-Auction for TCCs valid during the same period as the second year of the two-year TCC in the next Centralized TCC Auction after the Centralized TCC Auction in which the two-year TCC was initially awarded and having the same POI and POW combination as the two-year TCC

(6) upon completion of the Balance-of-Period Auction immediately preceding the final six months of the first year of the two-year TCC until ISO receipt of payment for the second year of the two-year TCC, the sum of the first year and second year amounts, which will be calculated as follows:

<u>First Year</u>:

the amount calculated in accordance with the appropriate Balance-of-Period TCC Auction holding requirement formula set forth in Section 26.4.2.4.1.6 below

<u>Second Year</u>:

the amount calculated in accordance with the appropriate one-year TCC Auction holding requirement formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of a one-year TCC in the single round one-year Sub-Auction for TCCs valid during the same period as the second year of the two-year TCC in the next Centralized TCC Auction after the Centralized TCC Auction in which the two-year TCC was initially awarded and having the same POI and POW combination as the two-year TCC

(7) upon ISO receipt of payment for the second year of the two-year TCC until completion of the final round of the one-year Sub-Auction for the second year of

the two-year TCC, the sum of the first year and second year amounts, which will be calculated as follows:

First Year:

the amount calculated in accordance with the appropriate Balance-of-Period Auction holding requirement formula set forth in Section 26.4.2.4.1.6 below

Second Year:

the amount calculated in accordance with the one-year TCC formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of a one-year TCC in the single round one-year Sub-Auction for TCCs valid during the same period as the second year of the two-year TCC in the next Centralized TCC Auction after the Centralized TCC Auction in which the two-year TCC was initially awarded and having the same POI and POW combination as the two-year TCC

(8) upon completion of the final round of the one-year Sub-Auction for the second year of the two-year TCC until completion of the Balance-of-Period Auction for the first month of the second year of the two-year TCC, the sum of the first year and second year amounts, which will be calculated as follows::

First Year:

the amount calculated in accordance with the appropriate Balance-of-Period Auction holding requirement formula set forth in Section 26.4.2.4.1.6 below

Second Year:

the amount calculated in accordance with the one-year TCC formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of a one-year TCC in the final round of the most recently completed one-year Sub-Auction with the same POI and POW combination as the two-year TCC

(9) upon completion of the Balance-of-Period Auction for the first month of the second year of the two-year TCC until completion of the final round of the six-

month Sub-Auction for the final six months of the two-year TCC, the sum of the first year and second year amounts, which will be calculated as follows:

First Year:

the amount calculated in accordance with the appropriate Balance-of-Period Auction holding requirement formula set forth in Section 26.4.2.4.1.6 below

Second Year:

the amount calculated in accordance with the appropriate Balance-of-Period Auction holding requirement formula set forth in Section 26.4.2.4.1.6 below

(10) upon completion of the final round of the six-month Sub-Auction for the final six months of the two-year TCC until completion of the Balance-of-Period Auction immediately preceding the final six months of the two-year TCC:

the amount calculated in accordance with the six-month TCC formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of a six-month TCC in the final round of the most recently completed six-month Sub-Auction with the same POI and POW combination as the two-year TCC

(11) upon completion of the Balance-of-Period Auction for the first month of the final six months of a two-year TCC:

the amount calculated in accordance with the Balance-of-Period TCC formulas set forth in Section 26.4.2.4.1.5 below

**26.4.2.4.1.2 One-Year TCCs:**

(1) upon initial award of a one-year TCC (including a Fixed Price TCC with a one-year duration, an Incremental TCC, or a Grandfathered TCC) until completion of the final round of the current one-year Sub-Auction:

the amount calculated in accordance with the one-year TCC formula set forth in Section 26.4.2.4.1.5 below

(2) upon completion of the final round of the current one-year Sub-Auction until completion of the Balance-of-Period Auction for the first month of the one-year TCC:

the amount calculated in accordance with the one-year TCC formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of a one-year TCC in the final round of the current one-year Sub-Auction with the same POI and POW combination as the one-year TCC

(3) upon completion of the Balance-of-Period Auction for the first month of the one-year TCC (including a Fixed Price TCC with a one-year duration, an Incremental TCC, or a Grandfathered TCC) until completion of the final round of the six month Sub-Auction in the next Centralized TCC Auction:

the amount calculated in accordance with the appropriate Balance-of-Period Auction holding requirement formula set forth in Section 26.4.2.4.1.6 below

(4) upon completion of the final round of the six-month Sub-Auction for the final six months of a one-year TCC (including a Fixed Price TCC with a one-year duration, an Incremental TCC, or a Grandfathered TCC) until completion of the Balance-of-Period Auction immediately preceding the final six months of a one-year TCC (including a Fixed Price TCC with a one-year duration, an Incremental TCC, or a Grandfathered TCC):

the amount calculated in accordance with the six-month TCC formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of a six-month TCC in the final round of the most recently completed six-month Sub-Auction with the same POI and POW combination as the one-year TCC

(5) upon completion of the Balance-of-Period Auction for the first month of the final six months of a one-year TCC:

the amount calculated in accordance with the appropriate Balance-of-Period Auction holding requirement formula set forth in Section 26.4.2.4.1.6 below

**26.4.2.4.1.3 Six-Month TCCs:**

(1) upon initial award of a six-month TCC (including an ETCNL TCC, or a RCRR TCC) until completion of the final round of the current six-month Sub-Auction:

the amount calculated in accordance with the six-month TCC formula set forth in Section 26.4.2.4.1.5 below

(2) upon completion of the final round of the current six-month Sub-Auction until completion of the Balance-of-Period Auction for the first month of a six-month TCC:

the amount calculated in accordance with the six-month TCC formula set forth in Section 26.4.2.4.1.5 below

where:

$P_{ijt}$ = market clearing price of a six-month TCC in the final round of the current six-month Sub-Auction with the same POI and POW combination as the six-month TCC

(3) upon completion of the Balance-of-Period Auction for the first month of a six-month TCC:

the amount calculated in accordance with the Balance-of-Period Auction formula set forth in Section 26.4.2.4.1.6.1 below

**26.4.2.4.1.4 One-Month TCCs:**

upon initial award of a one-month TCC:

the amount calculated in accordance with the Balance-of-Period TCC Auction holding requirement formula set forth in Section 26.4.2.4.1.6.1 below

#### 26.4.2.4.1.5 Centralized TCC Auction – Holding Requirement Formulas:

for one-year TCCs, representing a 5% probability curve:

$$+1.909\sqrt{e^{10.9729 + .6514\left(ln\left(|P_{ijt}| + e\right)\right) + .6633 * Zone\ J + 1.1607 * Zone\ K}} - 1\ P_{ijt}$$

for six-month TCCs, representing a 3% probability curve:

$$+2.565\sqrt{e^{11.6866 + .4749\left(ln\left(|P_{ijt}| + e\right)\right) + .4856 * Zone\ J + .8498 * Zone\ K - .0373\ Summer}} - 1\ P_{\boldsymbol{ijt}}$$

where:

| | | |
|---|---|---|
| $P_{ijt}$ | = | market clearing price of i to j TCC in round t of the auction in which the TCC was purchased (or, in the case of an ETCNL TCC or a RCRR TCC, the auction in which the six-month Sub-Auction made transmission capacity available to support the sale of TCCs for the Capability Period in which the applicable ETCNL TCC or RCRR TCC would be valid); |
| Zone J | = | 1 if TCC sources or sinks but not both in Zone J, zero otherwise; |
| Zone K | = | 1 if TCC sources or sinks but not both in Zone K and does not source or sink in Zone J, 0 otherwise; |
| Summer | = | 1 for six-month TCCs sold in the spring auction, 0 otherwise; and |

Further, when calculating "Pijt" in Section 26.4.2.4.1, in the event there is no market clearing price for a two-year, one-year, or six-month TCC in the appropriate prior Capability Period Centralized TCC Auction with the same POI and POW combination as the awarded two-year, one-year, or six-month TCC, as appropriate, then the market clearing price shall equal a proxy price, assigned by the ISO, for a TCC with like characteristics.

Further, the NYISO may adjust any of the Zone K multipliers in Section 26.4.2.4.1 if, for TCCs of the same duration, the percentage ratio between collateral and congestion rents for Zone K TCCs deviates from the percentage ratio for Zone J TCCs by more than ten percent (10.0%).

**26.4.2.4.1.6 Balance-of-Period Auction – Holding Requirement Formulas:**

During the Balance-of-Period Auction: (a) a TCC awarded in the Centralized TCC Auction (or the remaining segments of a TCC awarded in a prior Centralized TCC Auction); or (b) a Fixed Price TCC, an Incremental TCC, a Grandfathered TCC, an ETCNL TCC, or a RCRR TCC, valid during the period covered by the Balance-of-Period Auction is segmented, as appropriate, into (i) a monthly segment, corresponding to the months within the current Capability Period encompassed by the remaining duration of the TCC (or, in the case of an Incremental TCC or a Grandfathered TCC, the remaining duration of the assumed duration of the TCC for purposes of this Section 26.4), (ii) a future six-month segment, corresponding to months within the next Capability Period encompassed by the remaining duration of the TCC (or, in the case of an Incremental TCC or a Grandfathered TCC, the remaining duration of the assumed duration of the TCC for purposes of this Section 26.4), and (iii) a one-year segment, corresponding to all months after the Capability Period associated with the future six-month segment encompassed by the remaining duration of the TCC (or, in the case of an Incremental TCC or a Grandfathered TCC, the remaining duration of the assumed duration of the TCC for purposes of this Section 26.4), such that the sum of segments (i), (ii), and (iii) covers the entire remaining duration of the TCC (or, in the case of an Incremental TCC or a Grandfathered TCC, the remaining duration of the assumed duration of the TCC for purposes of this Section 26.4). The credit holding requirement for the monthly segments and the future six-month segment are calculated in accordance with the formulas below. The credit holding requirement for the one-year segment is calculated in accordance with formulas for determining the credit holding requirement for the second year of a two-year TCC as described in Section 26.4.2.4.1.1 above; provided, however, that in the case of a Historic Fixed Price TCC for which less than twelve months are assigned to the one-year segment, the applicable Sub-Auctions from which the market-clearing price ($P_{ijt}$) used for the formulas described in Section 26.4.2.4.1.1 shall be the most recently completed two-year Sub-Auction prior to the effective date of that Historic Fixed Price TCC and the one-year Sub-Auction that immediately followed such two-year Sub-Auction. The credit holding requirement calculated for each segment shall be determined based on the number of months that are assigned to each segment for the remaining duration of a given TCC.

**26.4.2.4.1.6.1 Monthly Segment**

**Monthly Segment ($)** = [(Monthly Margin ($) ×Monthly Index Ratio×Monthly Factor) −TCC Price ($)]×MWs

*where:*

**Monthly Margin** is calculated based on a methodology approved by Market Participants and posted to the ISO's website

**Monthly Index Ratio** as determined from time to time by the ISO based on historical data and a methodology approved by Market Participants and posted to the ISO's website

**Monthly Factor** as determined from time to time by the ISO based on historical data and a methodology approved by Market Participants and posted to the ISO's website

**TCC Price** is the market clearing price for the respective Capability Period month in the most recent Balance-of-Period Auction

**MWs** is the number of awarded TCC MWs

**26.4.2.4.1.6.2 Future Six-Month Segment**

**Future Six-Month Segment ($)** = (Six-Month Margin ($)−TCC Price ($))×MWs

*where:*

**Six-Month Margin** is calculated based on a methodology approved by Market Participants and posted on the ISO's website

**TCC Price** is the market clearing price, using the same POI/POW combination, resulting from the

(1) Market clearing price from the final round of the most recent one-year TCC Sub-Auction, less the

(2) Market clearing price from the second round of the most recent six-month TCC Sub-Auction

**MWs** is the number of awarded TCC MWs

### 26.4.2.5 WTSC Component

The WTSC Component shall be equal to the greater of either:

$$\frac{\substack{Greatest\ Amount\ Owed\ for\ WTSC\ During\ Any \\ Single\ Month\ in\ the\ Prior\ Equivalent\ Capability\ Period}}{Days\ in\ Month} * 50$$

- or –

$$\frac{\substack{Total\ Charges\ Incurred\ for\ WTSC\ Based\ Upon\ the\ Most \\ Recent\ Monthly\ Data\ Provided\ by\ the\ Transmission\ Owner}}{Days\ in\ Month} * 50$$

### 26.4.2.6 Virtual Transaction Component

The Virtual Transaction Component shall be equal to the sum of the Customer's (i) Virtual Supply credit requirement ("VSCR") for all outstanding Virtual Supply Bids, plus (ii) Virtual Load credit requirement ("VLCR") for all outstanding Virtual Load Bids, plus (iii) net amount owed to the ISO for settled Virtual Transactions.

Where:

VSCR = $\sum(VSG_{MWh} * VSG_{CS})$

VLCR = $\sum(VLG_{MWh} * VLG_{CS})$

Where:

$VSG_{MWh}$ = the total quantity of MWhs of Virtual Supply that a Customer Bids for all Virtual Supply positions in the Virtual Supply group

$VSG_{CS}$ = the amount of credit support required in $/MWh for the Virtual Supply group

$VLG_{MWh}$ = the total quantity of MWhs of Virtual Load that a Customer Bids for all Virtual Load positions in the Virtual Load group

$VLG_{CS}$ = the amount of credit support required in $/MWh for the Virtual Load group

The ISO will categorize each Virtual Supply Bid into one of the 33 Virtual Supply groups ("VSG") set forth in the Virtual Supply chart below, as appropriate, based upon the season, weekday/weekend, holiday, and time-of-day of the Virtual Supply Bid. For each Load Zone, the amount of credit support required in $/MWh for a Virtual Transaction in a particular Virtual Supply group shall equal the price differential between the Energy price in the Day-Ahead Market and the Energy price in the Real-Time Market, at the 98$^{th}$ percentile, based upon all possible Virtual Supply positions in the Virtual Supply group in the previous one (1) year ending on the last day of the calendar month preceding the month to which the Virtual Supply Bid applies and in the previous five (5) years ending on the last day of the calendar month preceding the month to which the Virtual Supply Bid applies ("Virtual Supply Price Differential"). The Virtual Supply Price Differential will be calculated by applying a weight of 1/3 to the previous one (1) year ending on the last day of the end of the calendar month preceding the month to which the Virtual Supply Bid applies and a weight of 2/3 to the previous five (5) years ending on the last day of the calendar month preceding the month to which the Virtual Supply Bid applies.

The ISO will categorize each Virtual Load Bid into one of the 28 Virtual Load groups ("VLG") set forth in the Virtual Load chart below, as appropriate, based upon the season, weekday/weekend, holiday, and time-of-day of the Virtual Load Bid. For each Load Zone, the amount of credit support required in $/MWh for a Virtual Transaction in a particular Virtual

Load group shall equal the price differential between the Energy price in the Day-Ahead Market and the Energy price in the Real-Time Market, at the 97$^{th}$ percentile, based upon all possible Virtual Load positions in the Virtual Load group in the previous one (1) year ending on the last day of the calendar month preceding the month to which the Virtual Load Bid applies and in the previous five (5) years ending on the last day of the calendar month preceding the month to which the Virtual Load Bid applies ("Virtual Load Price Differential"). The Virtual Load Price Differential will be calculated by applying a weight of 1/3 to the previous one (1) year ending on the last day of the calendar month preceding the month to which the Virtual Load Bid applies and a weight of 2/3 to the previous five (5) years ending on the last day of the calendar month preceding the month to which the Virtual Load Bid applies.

If a Customer submits Bids for both Virtual Load and Virtual Supply for the same day, hour, and Load Zone, then for those Bids, until such time as those Bids have been evaluated by SCUC, only the greater of the Customer's (i) VLCR for the total MWhs Bid for Virtual Load, or (ii) VSCR for the total MWhs Bid for Virtual Supply will be included when calculating the Customer's Virtual Transaction Component. After evaluation of those Bids by SCUC, then only the credit requirement for the net position of the accepted Bids (in MWhs of Virtual Load or Virtual Supply) will be included when calculating the Customer's Virtual Transaction Component.

**Virtual Supply Groups**

| | | | | |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| Summer | Virtual Supply Group For Each Load Zone |
| --- | --- |
| HB07–09 | VSG-1 |
| HB10–12 | VSG-2 |
| HB13–17 | VSG-3 |
| HB18 | VSG-4 |
| HB19-20 | VSG-5 |
| HB21-22 | VSG-6 |
| Weekend/ Holiday (HB07–08) | VSG-7 |
| Weekend/ Holiday (HB09–12) | VSG-8 |
| Weekend/ Holiday (HB13–14) | VSG-9 |
| Weekend/ Holiday (HB15–16) | VSG-10 |
| Weekend/ Holiday (HB17–18) | VSG-11 |
| Weekend/ Holiday (HB19–22) | VSG-12 |
| Night (HB00,23) | VSG-13 |
| Night (HB01-06) | VSG-14 |
| **Winter** | |
| HB08–09 | VSG-15 |
| HB10–12 | VSG-16 |
| HB13–15 | VSG-17 |
| HB16-17 | VSG-18 |
| HB18-20 | VSG-19 |
| HB21-22 | VSG-20 |

| | |
|---|---|
| Weekend/ Holiday (HB16–20) | VSG-21 |
| Weekend/ Holiday (Other HB08-22) | VSG-22 |
| Night (HB00,01,23) | VSG-23 |
| Night (HB02-05) | VSG-24 |
| Night (HB06-07) | VSG-25 |
| **Rest-of-Year** | |
| HB07–10 | VSG-26 |
| HB11–14 | VSG-27 |
| HB15–19 | VSG-28 |
| HB20-22 | VSG-29 |
| Weekend/ Holiday (HB17–20) | VSG-30 |
| Weekend/ Holiday (Other HB07-22) | VSG-31 |
| Night (HB00,06,23) | VSG-32 |
| Night (HB01-05) | VSG-33 |

Where:

Summer = May, June, July, and August

Winter = December, January, and February

Rest-of-Year = March, April, September, October, and November

Weekend = Saturday and Sunday

Holiday = NERC-defined holidays

HB = Hour Beginning x:00

**Virtual Load Groups**

| **Summer** | **Virtual Load Group For Each Load Zone** |
|---|---|
| HB07–09 | VLG-1 |
| HB10–11 | VLG-2 |
| HB12-13 | VLG-3 |
| HB14-17 | VLG-4 |
| HB18-20 | VLG-5 |
| HB21-22 | VLG-6 |

| | |
|---|---|
| Weekend/ Holiday (HB13-19) | VLG-7 |
| Weekend/ Holiday (Other HB07-22) | VLG-8 |
| Night (HB00,23) | VLG-9 |
| Night (HB01-06) | VLG-10 |
| **Winter** | |
| HB07–09 | VLG-11 |
| HB10–12 | VLG-12 |
| HB13–15 | VLG-13 |
| HB16-17 | VLG-14 |
| HB18-20 | VLG-15 |
| HB21-22 | VLG-16 |
| Weekend/ Holiday (HB16–20) | VLG-17 |
| Weekend/ Holiday (Other HB07-22) | VLG-18 |
| Night (HB02-04) | VLG-19 |
| Night (Other HB23-06) | VLG-20 |
| **Rest-of-Year** | |
| HB07–10 | VLG-21 |
| HB11–14 | VLG-22 |
| HB15–19 | VLG-23 |
| HB20-22 | VLG-24 |
| Weekend/ Holiday (HB17–20) | VLG-25 |
| Weekend/ Holiday (Other HB07-22) | VLG-26 |
| Night (HB00,06,23) | VLG-27 |
| Night (HB01-05) | VLG-28 |

Where:

| | | |
|---|---|---|
| Summer | = | May, June, July, and August |
| Winter | = | December, January, and February |
| Rest-of-Year | = | March, April, September, October, and November |
| Weekend | = | Saturday and Sunday |
| Holiday | = | NERC-defined holidays |
| HB | = | Hour Beginning x:00 |

#### 26.4.2.7 DADRP Component

The DADRP Component shall be equal to the product of: (i) the Demand Reduction Provider's monthly average of MWh of accepted Demand Reduction Bids during the prior summer Capability Period or, where the Demand Reduction Provider does not have a history of accepted Demand Reduction bids, a projected monthly average of the Demand Reduction Provider's accepted Demand Reduction bids; (ii) the average Day-Ahead LBMP at the NYISO Reference Bus during the prior summer Capability Period; (iii) twenty percent (20%); and (iv) a factor of four (4). The ISO shall adjust the amount of Unsecured Credit and/or collateral that a Demand Reduction Provider is required to provide whenever the DADRP Component increases or decreases by ten percent (10%) or more.

#### 26.4.2.8 DSASP Component

The DSASP Component is calculated every two months based on the Demand Side Resource's Operating Capacity available for the scheduling of such services, the delta between the Day-Ahead and hourly market clearing prices for such products in the like two-month period of the previous year, and the location of the Demand Side Resource. Resources located East of Central-East shall pay the Eastern reserves credit support requirement and Resources located West of Central-East shall pay the Western reserves credit support requirement. The DSASP Component shall be equal to:

(a) For Demand Side Resources eligible to offer only Operating Reserves, the product of (i) the maximum hourly Operating Capacity (MW) for which the Demand Side Resource may be scheduled to provide Operating Reserves, (ii) the amount of Eastern or Western reserves credit support, as appropriate, in $/MW per day, and (iii) three (3) days.

Where:

| | | |
|---|---|---|
| The amount of Eastern reserves credit support ($/MW/day) for each two-month period | = | Eastern Price Differential for the same two-month period in the previous year * the higher of two (2) or the maximum number of daily Reserve Activations for the same two-month period in the previous year |
| The amount of Western reserves credit support ($/MW/day) for each two-month period | = | Western Price Differential for the same two-month period in the previous year * the higher of two (2) or the maximum number of daily Reserve Activations for the same two-month period in the previous year |
| Two-month periods: | = | January and February<br>March and April<br>May and June<br>July and August<br>September and October<br>November and December |
| $MCP_{SRh}$ | = | Hourly, time-weighted Market Clearing Price for Spinning Reserves |
| Eastern Price Differential | = | The hourly differential at the 97th percentile of all hourly differentials between the Day-Ahead and Real-Time MCPSRh for Eastern Spinning Reserves for hours in the two-month period of the previous year when the Real-Time MCPSRh for Eastern Spinning Reserves exceeded the Day-Ahead MCPSRh for Eastern Spinning Reserves |
| Western Price Differential | = | The hourly differential at the 97th percentile of all hourly differentials between the Day-Ahead and Real-Time MCPsSRh for Western Spinning Reserves for hours in the two-month period of the previous year when the Real-Time MCPSRh for Western Spinning Reserves exceeded the Day-Ahead MCPSRh for Western Spinning Reserves |
| Reserve Activations | = | The number of reserve activations at the 97th percentile of daily reserve activations for days in each two month period of the previous year that had reserve activations. |

(b) For Demand Side Resources eligible to offer only Regulation Service, or Operating Reserves and Regulation Service, the product of (i) the maximum hourly Operating Capacity (MW) for which the Demand Side Resource may be scheduled to provide Regulation Service and Operating Reserves, (ii) the amount of regulation credit support, as appropriate, in $/MW per day, and (iii) three (3) days.

Where:

| | | |
|---|---|---|
| The amount of regulation credit support ($/MW/day) for each two-month period | = | Price Differential for the same two-month period in the previous year * 24 hours |
| Two-month periods: | = | January and February<br>March and April<br>May and June<br>July and August<br>September and October<br>November and December |
| $MCP_{Regh}$ | = | Hourly, time-weighted Market Clearing Price for Regulation Services |
| Price Differential | = | The hourly differential at the 97th percentile of all hourly differentials between the Day-Ahead and Hour-Ahead MCPRegh for hours in the two-month period of the previous year when the Real-Time MCP exceeded the Day-Ahead MCP |

**26.4.2.9 Projected True-Up Exposure Component**

The Projected True-Up Exposure Component shall apply to any Customer whose average percentage credit exposure to the NYISO is greater than ten percent of the initial invoice settlements for the four-month true-ups over the most recent period, not to exceed four months, for which the Customer has been invoiced by the NYISO. Customers subject to the Projected True-Up Exposure Component shall be required to provide secured credit to satisfy the requirement. The Projected True-Up Exposure Component shall be determined according to the following formula:

$$PTE = \left[\sum_{N4} (\text{4 month settlement - associated initial settlement})\right] + \left[\sum_{N8} (\text{Final bill close-out settlement - associated 4 month settlement})\right]$$

Where:

| | | |
|---|---|---|
| PTE | = | The amount of secured credit support required for the Projected True-Up Exposure Component |
| N4 | = | Each month in the most recent four-month period with a 4 month settlement |
| N8 | = | Each month in the most recent eight-month period with a final bill close-out settlement |

**26.4.2.10 Former RMR Generator Component**

The Former RMR Generator Component shall apply to any Customer that is the financially responsible party under the ISO Tariffs for a former RMR Generator or former Interim Service Provider that is subject to a Monthly Repayment Obligation. The Former RMR Generator Component will apply until either (a) the Monthly Repayment Obligation associated with the former RMR Generator or former Interim Service Provider is paid in full, or (b) the former RMR Generator or former Interim Service Provider is not subject to a Monthly Repayment Obligation. Customers subject to the Former RMR Generator Component shall be required to provide collateral to satisfy the requirement.

The Former RMR Generator Component shall be calculated as follows:

$$\sum_{G \in S} MRO_G \times Term_G$$

$S$ = the set of former RMR Generators and former Interim Service Providers for which Customer is the financially responsible party under the ISO Tariffs

$G$ = a former RMR Generator or former Interim Service Provider in set S

$MRO_G$ = the Monthly Repayment Obligation (as defined in Section 15.8.7 of Rate Schedule 8 to the Services Tariff) for Generator *G*

$Term_G$ = the lesser of 8 or the number of months remaining in the repayment term that the ISO determines in accordance with Rate Schedule 8 to the Services Tariff for Generator *G*

**26.4.3 Calculation of Bidding Requirement**

The Bidding Requirement shall be an amount equal to the sum of:

(i) the amount of bidding authorization that the Customer has requested for use in or during, as appropriate, an upcoming ISO-administered TCC auction, which shall at least cover the sum of all positive bids to purchase TCCs, plus the absolute value of the sum of all negative offers to sell TCCs; *provided, however,* that the amount of credit required for each TCC that the Customer bids to purchase, whether positive, negative, or zero shall not be less than (a) $3,000 per MW for two-year TCCs, (b) $1,500 per MW for one-year TCCs, (c) $2,000 per MW for six-month TCCs, (d) $1,800 per MW for five-month TCCs, (e) $1,500 per MW for four-month TCCs, (f) $1,200 per MW for three-month TCCs, (g) $900 per MW for two-month TCCs, and (h) $600 per MW for one-month TCCs;

(ii) the remaining amount that the Customer owes following an upcoming Centralized TCC Auction as a result of purchasing a Fixed Price TCC;

(iii) the amount of bidding authorization that the Customer has requested for use in an upcoming ISO-administered ICAP auction; and

(iv) five (5) days prior to any ICAP Spot Market Auction, the amount that the Customer may be required to pay for UCAP in the auction, calculated as follows:

$$\sum_{L \in S} \left[ (ICPM_L * 1000 * \ Deficiency_L) + (ICPM_L * 1000 * (ZDOMW_L * -1)) + \left( ICPM_L * 1000 * \left( \frac{ZCP_L - 1}{2} \right) * \ RQT_L \right) \right]$$

Where:

| | |
|---|---|
| $S$ | equals a set containing the following locations: each Locality and Rest of State, |
| $L$ | equals a location in the set $S$, |
| $ICPM_L$ | equals the lesser of $UBRP_L$ or $LM_L$, |
| $UBRP_L$ | equals the UCAP based reference point (in $/kW-Month) for location $L$, as determined on the ICAP Demand Curve for that location (or for NYCA, if $L$ is Rest of State) for the applicable Obligation Procurement Period, |
| $LM_L$ | equals (1) for any Locality $L$ that is contained within another Locality $X$, the greater of $CPM_L$ or $CPM_X$, or (2) for any other Locality or Rest of State, $CPM_L$, |
| $CPM_L$ | equals for location $L$, (1 + $Margin_L$ )*$MCP_L$ , |
| $CPM_X$ | equals for location $X$, (1 + $Margin_X$ )*$MCP_X$ , |
| $Margin_L$ | equals 25% if location $L$ is New York City and 100% if location $L$ is G-J Locality, Long Island or Rest of State, |
| $MCP_L$ | equals the Market-Clearing Price for location $L$ in the most recent Monthly Auction that established such a price for the month covered by the ICAP Spot Market Auction, measured in dollars per kilowatt-month, |
| $Deficiency_L$ | equals the number of megawatts of Unforced Capacity that are to be procured in location $L$ on behalf of that Customer in the ICAP Spot Market Auction in order to cover any deficiency for that Customer that exists in that location after the certification deadline for that ICAP Spot Market Auction less any deficiency calculated for that Customer for any Localities contained within location $L$, such value not to be less than zero, |
| $ZDOMW_L$ | equals the number of megawatts of unsold Unforced Capacity in location $L$ that the Customer committed as zero dollar offered megawatts for that ICAP Spot Market Auction, |
| $ZCP_L$ | equals the percentage determined in accordance with Services Tariff Section 5.14.1.2 for the applicable ICAP Demand Curves as established at the $0.00 point for the appropriate Capability Year, and |
| $RQT_L$ | equals (1) if $L$ is New York City or Long Island, that Customer's share of the Locational Minimum Unforced Capacity Requirement for location $L$ or (2) if $L$ is |

G-J Locality, that Customer's share of the Locational Minimum Unforced Capacity Requirement for the G-J Locality that remains after reducing this amount by its share of the Locational Minimum Unforced Capacity Requirements for New York City or, (3) if *L* is Rest of State, that Customer's share of the NYCA Minimum Unforced Capacity Requirement that remains after reducing this amount by (a) its share of the Locational Minimum Unforced Capacity Requirements for New York City and Long Island and (b) that Customer's share of the Locational Minimum Unforced Capacity Requirement for the G-J Locality remaining after accounting for New York City, as calculated in (2) above; such value not to be less than zero.

## 30.4 Market Monitoring Unit

### 30.4.1 Mission of the Market Monitoring Unit

The Market Monitoring Unit's goals are (1) to ensure that the markets administered by the ISO function efficiently and appropriately, and (2) to protect both consumers and participants in the markets administered by the ISO by identifying and reporting Market Violations, market design flaws and market power abuses to the Commission in accordance with Sections 30.4.5.3 and 30.4.5.4 below.

### 30.4.2 Retention and Oversight of the Market Monitoring Unit

The Board shall retain a consulting or other professional services firm, or other similar entity, to advise it on the matters encompassed by Attachment O and to carry out the responsibilities that are assigned to the Market Monitoring Unit in Attachment O. The Market Monitoring Unit selected by the Board shall have experience and expertise appropriate to the analysis of competitive conditions in markets for electric capacity, energy and ancillary services, and financial instruments such as TCCs, and to such other responsibilities as are assigned to the Market Monitoring Unit under Attachment O, and must also have sufficient resources and personnel to be able to perform the Core Functions and other assigned functions.

The Market Monitoring Unit shall be accountable to the non-management members of the Board, and shall serve at the pleasure of the non-management members of the Board.

### 30.4.3 Market Monitoring Unit Ethics Standards

The Market Monitoring Unit, including all persons employed thereby, shall comply at all times with the ethics standards set forth below. The Market Monitoring Unit ethics standards set forth below shall apply in place of the standards set forth in the ISO's OATT Attachment F Code of Conduct, and/or the more general policies and standards that apply to consultants retained by the ISO.

30.4.3.1 The Market Monitoring Unit and its employees must have no material affiliation with any Market Party or Affiliate of any Market Party.

30.4.3.2 The Market Monitoring Unit and its employees must not serve as an officer, employee, or partner of a Market Party.

30.4.3.3 The Market Monitoring Unit and its employees must have no material financial interest in any Market Party or Affiliate of a Market Party. Ownership of mutual funds by Market Monitoring Units and their employees that contain investments in Market Parties or their Affiliates is permitted so long as: (a) the fund is publicly traded; (b) the fund's prospectus does not indicate the objective or practice of concentrating its investment in Market Parties or their Affiliates; and (c) the Market Monitoring Unit/Market Monitoring Unit employee does not exercise or have the ability to exercise control over the financial interests held by the fund.

30.4.3.4 The Market Monitoring Unit and its employees are prohibited from engaging in transactions in the markets administered by the ISO, other than in the performance of duties under the ISO's Tariffs. This provision shall not, however, prevent the Market Monitoring Unit, or its employees, from purchasing electricity, power and Energy as retail customers for their own account and consumption.

30.4.3.5 The Market Monitoring Unit and its employees must not be compensated, other than by the ISO, for any expert witness testimony or other commercial services, in connection with any legal or regulatory proceeding or commercial transaction relating to the ISO or to the markets that the ISO administers.

30.4.3.6 The Market Monitoring Unit and its employees may not accept anything that is of more than *de minimis* value from a Market Party.

30.4.3.7 The Market Monitoring Unit and its employees must advise the Board in the event they seek employment with a Market Party, and must disqualify themselves from participating in any matter that could have an effect on the financial interests of that Market Party until the outcome of the matter is determined.

30.4.3.8 If the Market Monitoring Unit or any of its employees provide services to entities other than the ISO, the Market Monitoring Unit shall provide to the ISO's Board, and shall regularly update, a list of such entities and services. When the Market Monitoring Unit issues an opinion, report or recommendation to, for or addressing the ISO or the markets it administers that relates to, or could reasonably be expected to affect, an entity (other than the ISO) to which the Market Monitoring Unit or its employees provide services, the Market Monitoring Unit shall inform the ISO's Board of the opinion, report or recommendation it has issued, and that its opinion, report or recommendation relates to, or could reasonably be expected to affect, an entity to which the Market Monitoring Unit or its employees provide services.

**30.4.4 Duties of the Market Monitoring Unit**

The Market Monitoring Unit shall advise the Board, shall perform the Core Functions specified in Section 30.4.5 of Attachment O, and shall have such other duties and responsibilities as are specified in Attachment O. The Market Monitoring Unit may, at any time, bring any matter to the attention of the Board that the Market Monitoring Unit may deem necessary or appropriate for achieving the purposes, objectives and effective implementation of Attachment O.

The Market Monitoring Unit shall not participate in the administration of the ISO's Tariffs, except for performing its duties under Attachment O. The Market Monitoring Unit shall not be responsible for performing purely administrative duties, such as enforcement of late fees or Market Party reporting obligations, that are not specified in Attachment O. The Market Monitoring Unit may (i) provide, or assist the ISO's efforts to develop, the inputs required to conduct mitigation, and (ii) assist the ISO's efforts to conduct "retrospective" mitigation (*see* Order 719 at PP. 369, 375) that does not change bids or offers (including physical bid or offer parameters) at or before the time such bids or offers (including physical bid or offer parameters) are considered in the ISO's market solution.

**30.4.5 Core Market Monitoring Functions**

The Market Monitoring Unit shall be responsible for performing the following Core Functions:

30.4.5.1 Evaluate existing and proposed market rules, tariff provisions and market design elements and recommend proposed rule and tariff changes to the ISO, to the Commission's Office of Energy Market Regulation staff, and to other interested entities, including the New York Public Service Commission, and participants in the ISO's stakeholder governance process. Provided that:

30.4.5.1.1 The Market Monitoring Unit is not responsible for systematic review of every tariff and market rule; its role is monitoring, not audit.

30.4.5.1.2 The Market Monitoring Unit is not to effectuate its proposed market design itself.

30.4.5.1.3 The Market Monitoring Unit's role in recommending proposed rule and Tariff changes is advisory in nature, unless a Tariff provision specifically concerns actions to be undertaken by the Market Monitoring Unit itself.

30.4.5.1.4 The Market Monitoring Unit must limit distribution of issues or concerns it identifies, and its recommendations to the ISO and to Commission staff in the event it believes broader dissemination could lead to exploitation. Limited distributions should include an explanation of why further dissemination should be avoided at that time.

30.4.5.2 Review and report on the performance of the wholesale markets to the ISO, the Commission, and other interested entities such as the New York Public Service Commission and participants in its stakeholder governance process on at least a quarterly basis, and issue a more comprehensive annual state of the market report. The Market Monitoring Unit may issue additional reports as necessary.

30.4.5.2.1 In order to perform the Core Functions, the Market Monitoring Unit shall perform daily monitoring of the markets that the ISO administers. The Market Monitoring Unit's daily monitoring shall include monitoring of virtual bidding.

30.4.5.2.2 The Market Monitoring Unit shall submit drafts of each of its reports to the ISO for review and comment sufficiently in advance of the report's issuance to provide an effective opportunity for review and comment by the ISO. The Market Monitoring Unit may disregard any suggestions with which it disagrees. The ISO may not alter the reports prepared by the Market Monitoring Unit, nor dictate the Market Monitoring Unit's conclusions.

30.4.5.3 Identify and notify the Commission staff of instances in which a Market Party's or the ISO's behavior may require investigation, including, but not limited to, suspected Market Violations.

30.4.5.3.1 Except as provided in Section 30.4.5.3.2 below, in compliance with § 35.28(g)(3)(iv) of the Commission's regulations (or any successor provisions thereto) the Market Monitoring Unit shall submit a non-public referral to the Commission in all instances where it has obtained sufficient credible information to believe a Market Violation has occurred. Once the Market Monitoring Unit has obtained sufficient credible information to warrant referral to the Commission, the Market Monitoring Unit shall immediately refer the matter to the Commission and desist from further investigation of independent action related to the alleged Market Violation, except at the express direction of the Commission or Commission staff. The Market Monitoring Unit may continue to monitor for repeated instances of the reported activity by the same or other entities and shall respond to requests from the Commission for additional information in connection with the alleged Market Violation it has referred.

30.4.5.3.2 The Market Monitoring Unit is not required to refer the actions (or failures to act) listed in this Section 30.4.5.3.2 to the Commission as Market Violations, because they have: (i) already been reported by the ISO as a Market Problem under Section 3.5.1 of the ISO Services Tariff; and/or (ii) because they pertain to actions or failures that: (a) are expressly set forth in the ISO's Tariffs; (b) involve objectively identifiable behavior; and (c) trigger a sanction or other consequence that is expressly set forth in the ISO Tariffs and that is ultimately appealable to the Commission. The actions (or failures to act) that are exempt from mandatory referral to the Commission are:

30.4.5.3.2.1 failure to meet a Contract or Non-Contract CRIS MW Commitment pursuant to Sections 25.7.11.1.1 and 25.7.11.1.2 of Attachment S to the ISO OATT that results in a charge or other a sanction under Section 25.7.11.1.3 of Attachment S of the ISO OATT;

30.4.5.3.2.2 Black Start performance that results in reduction or forfeitures of payments under Rate Schedule 5 to the ISO Services Tariff;

30.4.5.3.2.3 any failure by the ISO to meet the deadlines for completing System Impact Studies, or any failure by a Transmission Owner to meet the deadlines for completing Facilities Studies, under Sections 3.7 and 4.5 of the ISO OATT that results in the filing of a notice and/or the imposition of sanctions under those provisions;

30.4.5.3.2.4 failure of a Market Party to comply with the ISO's creditworthiness requirements set forth in Attachment K of the ISO Services tariff, or other action, that triggers sanctions under Section 7.5 of the ISO Services Tariff or Section 2.7.5 of the ISO OATT, specifically: (i) failure of a Market Party to make timely payment under Section 7.2.2 of the ISO Services Tariff or Section 2.7.3.2 of the ISO OATT that triggers a sanction under Sections 7.5.3(i) or 7.5.3(iv) of the ISO Services Tariff, or Sections 2.7.5.3(i), 2.7.5.3(iv), or 2.7.5.4 of the ISO OATT; (ii) failure of a Market Party to comply with a demand for additional credit support under Section 26.6 of Attachment K of the ISO Services Tariff that triggers a sanction under Section 7.5.3(i) of the ISO Services Tariff or Section 2.7.5.3(i) of the ISO OATT; (iii) failure of a Market Party to cure a default in another ISO/RTO market under Sections 7.5.3(iii) of the ISO Services Tariff, or Section 2.7.5.3(iii) of the ISO OATT that triggers a sanction under either of those tariff provisions; (iv) failure of a Market Party that has entered into a Prepayment Agreement with the ISO under Appendix K-1 to Attachment K to the ISO Services Tariff to make payment in accordance with the terms of the Prepayment Agreement that triggers a sanction under the Prepayment Agreement or 7.5.3(i) of the ISO Services Tariff; and (v) failure of a Market Party to make timely payment on two occasions within a rolling twelve month period under Section 7.5.3(iv) of the ISO Services Tariff, or Section 2.7.5.3(iv) of the ISO OATT that triggers a sanction under either of those provisions.

30.4.5.3.2.5 bidding in a manner that results in a penalty under Section 23.4.3.3.4 of the Market Mitigation Measures.

30.4.5.3.2.6 submission of inaccurate fuel type information into the Day-Ahead Market that results in a penalty under Section 23.4.3.3.3.3 of the Market Mitigation Measures.

30.4.5.3.2.7 submission of inaccurate fuel type and/or fuel price information into the Real-Time Market that results in a penalty under Section 23.4.3.3.3.4 of the Market Mitigation Measures.

To the extent the above list enumerates specific Tariff provisions, the exclusions specified above shall also apply to re-numbered and/or successor provisions thereto. The Market Monitoring Unit is not precluded from referring any of the activities listed above to the

Commission.

30.4.5.4 Identify and notify the Commission staff of perceived market design flaws that could be effectively remedied by rule or tariff changes.

30.4.5.4.1 In compliance with § 35.28(g)(3)(v) of the Commission's regulations (or any successor provisions thereto) the Market Monitoring Unit shall submit a referral to the Commission when the Market Monitoring Unit has reason to believe that a market design flaw exists, that the Market Monitoring Unit believes could effectively be remedied by rule or tariff changes.

30.4.5.4.1.1 If the Market Monitoring Unit believes broader dissemination of the possible market design flaw, and its recommendation could lead to exploitation, the Market Monitoring Unit shall limit distribution of its referral to the ISO and to the Commission. The referral shall explain why further dissemination should be avoided.

30.4.5.4.1.2 Following referral of a possible market design flaw, the Market Monitoring Unit shall continue to provide to the Commission additional information regarding the perceived market design flaw, its effects on the market, any additional or modified observations concerning the Market Monitoring Unit's proposed market rule or tariff change, any recommendations made by the Market Monitoring Unit to the ISO, its stakeholders, Market Parties or state public service commissions regarding the perceived market design flaw, and any actions taken by the ISO regarding the perceived market design flaw.

### 30.4.6 Market Monitoring Unit Responsibilities Set Forth Elsewhere in the ISO's Tariffs

#### 30.4.6.1 Supremacy of (Attachment O)

Provisions addressing the Market Monitoring Unit, its responsibilities and its authority, have been centralized in Attachment O. However, provisions that address the Market Monitoring Unit can also be found in the Market Mitigation Measures that are set forth in Attachment H to the ISO Services Tariff, and elsewhere in the ISO's Tariffs. In the event of any inconsistency between the provisions of Attachment O and any other provision of the ISO OATT, the ISO Services Tariff, or any of their attachments and schedules, with regard to the Market Monitoring Unit, its responsibilities and its authority, the provisions of Attachment O shall control.

#### 30.4.6.2 Market Monitoring Unit responsibilities set forth in the Market Mitigation Measures

30.4.6.2.1 The ISO and its Market Monitoring Unit shall monitor the markets the ISO administers for conduct that the ISO or the Market Monitoring Unit determine constitutes an abuse of market power but that does not trigger the thresholds specified in the Market Mitigation Measures for the imposition of mitigation measures by the ISO. If the ISO identifies or is made aware of any such conduct, and in particular conduct exceeding the thresholds for presumptive market effects specified in Section 23.3.2.3 of the Market Mitigation Measures, it shall make a filing under § 205 of the Federal Power Act, 16 U.S.C. § 824d (1999) ("§ 205") with the Commission requesting authorization to apply appropriate mitigation measures. Any such filing shall identify the particular conduct the ISO believes warrants mitigation, shall propose a specific mitigation measure for the conduct, shall incorporate or address the recommendation of its Market Monitoring Unit, and shall set forth the ISO's justification for imposing that mitigation measure. The Market Monitoring Unit's reporting obligations are specified in Sections 30.4.5.3 and 30.4.5.4 of Attachment O. *See* Market Mitigation Measures Section 23.1.2.

30.4.6.2.2 The ISO and the Market Monitoring Unit shall monitor the ISO Administered Markets for other categories of conduct, whether by a single firm or by multiple firms acting in concert, that have material effects on prices or guarantee payments in an ISO Administered Market. *See* Market Mitigation Measures Section 23.2.4.4.

30.4.6.2.3 If (i) the ISO determines, following consultation with the Market Party and review by the Market Monitoring Unit, that the Market Party or its representative has, over a time period of at least one week, submitted inaccurate fuel type or fuel price information that was, taken as a whole, biased in the Market Party's favor, *then* the ISO shall cease using the fuel type and fuel price information submitted to the ISO's Market Information System along with the Generator's or the Aggregation's Bid(s) to develop reference levels for the affected Generator(s) or Aggregation(s) in the relevant (Day-Ahead or real-time) market for the durations specified in Sections 23.3.1.4.6.9.1, 23.3.1.4.6.9.2, and 23.3.1.4.6.9.3 of the Mitigation Measures. *See* Section 23.3.1.4.6.9 of the Market Mitigation Measures

30.4.6.2.4 When it has the capability to do so, the ISO shall determine the effect on prices or guarantee payments of questioned conduct through the use of sensitivity analyses performed using the ISO's SCUC, RTC and RTD computer models, and such other computer modeling or analytic methods as the ISO shall deem appropriate following consultation with its Market Monitoring Unit. *See* Market Mitigation Measures Section 23.3.2.2.1.

30.4.6.2.5 Pending development of the capability to use automated market models, the ISO, following consultation with its Market Monitoring Unit, shall determine the effect on prices or guarantee payments of questioned conduct using the best available data and such models and methods as they shall deem appropriate. *See* Market Mitigation Measures Section 23.3.2.2.2.

30.4.6.2.6 If through the application of an appropriate index or screen or other monitoring of market conditions, conduct is identified that (i) exceeds an applicable threshold, and (ii) has a material effect, as specified above, on one or more prices or guarantee payments in an ISO Administered Market, the ISO shall, as and to the extent specified in Attachment O or in Section 23.3.3.2 of the Market Mitigation Measures, contact the Market Party engaging in the identified conduct to request an explanation of the conduct. If a Market Party anticipates submitting bids in a market administered by the ISO that will exceed the thresholds specified in Section 23.3.1 of the Market Mitigation Measures for identifying conduct inconsistent with competition, the Market Party may contact the ISO to provide an explanation of any legitimate basis for any such changes in the Market Party's bids. If a Market Party's explanation of the reasons for its bidding indicates to the satisfaction of the ISO that the questioned conduct is consistent with competitive behavior, no further action will be taken. Market

Parties shall ensure that the information they submit to the ISO, including but not limited to fuel price, fuel type and opportunity cost information, is accurate. Except as set forth in Section 23.3.1.4.6.8 of the Market Mitigation Measures, the ISO may not retroactively revise a reference level to reflect additional fuel costs if a Market Party or its representative did not timely submit accurate fuel cost information. Except as set forth in Section 23.3.1.4.8.9 of the Market Mitigation Measures, the ISO may not retroactively revise a reference level to reflect accurate opportunity costs if a Market Party or its representative did not timely submit accurate opportunity cost information. Unsupported speculation by a Market Party does not present a valid basis for the ISO to determine that Bids that a Market Party submitted are consistent with competitive behavior, or to determine that submitted costs are appropriate for inclusion in the ISO's development of reference levels. Consistent with Sections 30.6.2.2 and 30.6.3.2 of the Plan, the Market Party shall retain the documents and information supporting its Bids and the costs it proposes to include in reference levels. A preliminary determination by the ISO shall be provided to the Market Monitoring Unit for its review and comment, and the ISO shall consider the Market Monitoring Unit's recommendations before the ISO issues its decision or determination to the Market Party. Upon request, the ISO shall consult with a Market Party or its representative with respect to the information and analysis used to determine reference levels under Section 23.3.1.4 of the Market Mitigation Measures for that Market Party's Generator(s) or Aggregation(s). If cost data or other information submitted by a Market Party indicates to the satisfaction of the ISO that the reference levels for that Market Party's Generator(s) or Aggregation(s) should be changed, revised reference levels shall be proposed by the ISO, communicated to the Market Monitoring Unit for its review and comment and, following the ISO's consideration of any recommendation that the Market Monitoring Unit is able to timely provide, communicated to the Market Party, and implemented by the ISO as soon as practicable. Changes to reference levels addressed pursuant to the terms of Section 23.3.3.1.4 of the Market Mitigation Measures shall be implemented on a going-forward basis commencing no earlier than the date that the Market Party's consultation request is received. *See* Market Mitigation Measures Sections 23.3.3.1.1 through 23.3.3.1.5.

30.4.6.2.7 With regard to a Market Party's request for consultation that satisfies the requirements of Sections 23.3.3.3.1.4 and 23.3.3.3.1.7 of the Market Mitigation Measures, and consistent with the duties assigned to the ISO in Section 23.3.3.3.1.7.1 of the Market Mitigation Measures, a preliminary determination by the ISO regarding the Market Party's consultation request shall be provided to the Market Monitoring Unit for its review and the ISO shall consider the Market Monitoring Unit's recommendations in reaching its decision. *See* Market Mitigation Measures Section 23.3.3.3.1.7.1 and 23.3.3.3.1.7.2.

30.4.6.2.8 Review pursuant to Market Mitigation Measures Section 23.4.5.4.3

(a) Reasonably in advance of the deadline for submitting offers in an External Reconfiguration Market and in accordance with the deadlines specified in ISO Procedures, the Responsible Market Party for External Sale UCAP may request the ISO to provide a projection of ICAP Spot Auction clearing prices for a Mitigated Capacity Zone over the Comparison Period for the External Reconfiguration Market. Prior to completing its projection of ICAP Spot Auction clearing prices for a Mitigated Capacity Zone over the Comparison Period for the External Reconfiguration Market, the ISO shall consult with the Market Monitoring Unit regarding such price projection. *See* Market Mitigation Measures Section 23.4.5.4.3(a).

(b) At least fifteen Business Days in advance of the opening of the ICAP Spot Market Auction, the Responsible Market Party for a Behind-the-Meter Net Generation Resource may request the ISO to make a determination regarding physical withholding that the sale of Net Unforced Capacity in a Mitigated Capacity Zone to its Host Load does not constitute physical withholding. Prior to reaching its decision on such a request, the ISO shall provide its preliminary determination to the Market Monitoring Unit for review and comment. *See* Market Mitigation Measures Section 23.4.5.4.3(b).

30.4.6.2.9 Prior to reaching its decision regarding whether the presumption of control of Unforced Capacity has been rebutted, the ISO shall provide its preliminary determination to the Market Monitoring Unit for review and comment. *See* Market Mitigation Measures Section 23.4.5.5.

30.4.6.2.10 Any proposal or decision by a Market Participant to retire or otherwise remove an Installed Capacity Supplier from a Mitigated Capacity Zone Unforced Capacity market, or to de-rate the amount of Installed Capacity available from such supplier, may be subject to audit and review by the ISO if the ISO determines that such action could reasonably be expected to affect Market-Clearing Prices in one or more ICAP Spot Market Auctions for a Mitigated Capacity Zone subsequent to such action; provided, however, no audit and review shall be necessary if the Installed Capacity Supplier is a Generator that is being retired or removed from a Mitigated Capacity Zone as the result of a Forced Outage that began on or after the effective date of the amendments to Section 23.4.5.6.1 of this Services Tariff that was determined by the ISO to be a Catastrophic Failure.

The ISO's audit or review of any proposal or decision by a Market Participant to retire or otherwise remove an Installed Capacity Supplier from a Mitigated Capacity Zone Unforced Capacity market, or to de-rate the amount of Installed Capacity available from such supplier (including a review the ISO conducts at the request of a Market Participant before it submits a proposal or makes a decision or a review the NYISO conducts in conjunction with the Short-Term Reliability Process), will consider the rationale offered by the Market Participant to support its proposal or decision. Such an audit or review shall assess whether the Market Participant's proposal or decision has a legitimate economic justification, which may include the economics of complying with regulatory requirements, or is based on an effort to withhold Installed Capacity physically in order to affect prices. The ISO's audit or review is conducted based on the expectation that a Market Participant's decision to retire or otherwise remove an Installed Capacity Supplier from a Mitigated Capacity Zone, or to de-rate the amount of Installed Capacity available from such supplier, accounts for the information available to that Market Participant at (or before) the time its decision is made on the "decision date" (*see, e.g.*, Sections 23.4.5.6.4.2.1 and 23.4.5.6.4.2.2.1 of this Services Tariff) specified by the Market Participant. A Market Participant may offer publicly available information and other information available to the Market Participant to support its proposal or decision.

The ISO shall provide the preliminary results of its audit or review to the Market Monitoring Unit for its review and comment. *See* Market Mitigation Measures Section 23.4.5.6.

30.4.6.2.11 Any reclassification of a an Installed Capacity Supplier that is a Generator in a Mitigated Capacity Zone from a Forced Outage that began on or after the effective date of Section 23.4.5.6.2 of this Services Tariff to an ICAP Ineligible Forced Outage by a Market Participant or otherwise, pursuant to the terms of Section 5.18.2.1 of this Services Tariff, may be subject to audit and review by the ISO if the ISO determines that such reclassification could reasonably be expected to affect the Market-Clearing Price in one or more ICAP Spot Market Auctions for a Mitigated Capacity Zone in which the Generator(s) that is the subject of the reclassification is located, subsequent to such action; provided, however, if the Market Participant's Generator experienced the Forced Outage as a result of a Catastrophic Failure, the reclassification of a Generator in a Mitigated Capacity Zone from a Forced Outage to an ICAP Ineligible Forced Outage shall not be subject to audit and review pursuant to Section 23.4.5.6.2 of this Services Tariff.

The audit and review pursuant to the above paragraph shall assess whether the reclassification of the Generator in a Mitigated Capacity Zone from a Forced Outage to an ICAP Ineligible Forced Outage had a legitimate economic justification or is based on an effort to withhold Installed Capacity physically in order to affect prices. A Market Participant may offer publicly available information and other information available to the Market Participant to justify the reclassification.

The ISO shall provide the preliminary results of its audit or review to the Market Monitoring Unit for its review and comment.

The audit and review pursuant to Section 23.4.5.6.2.1 of this Services Tariff shall be deferred by the ISO beyond the time period established in ISO Procedures for the audit and review until the ISO's receipt of data pursuant to Section 23.4.5.6.2.2 if the Generator was in a Forced Outage for at least 180 days before the reclassification and one or more Exceptional Circumstances delayed the acquisition of data necessary for the ISO's audit and review. If, at the time the ISO acquires the necessary data, the Market Participant has Commenced Repair of the Generator, or the Generator is determined by the ISO to have had a Catastrophic Failure, the Market Participant shall not be subject to an audit and review pursuant to Section 23.4.5.6.2.1 of this Services Tariff. The ISO shall provide the preliminary results of its audit or review to the Market Monitoring Unit for its review and comment.

30.4.6.2.12 The ISO shall consult with the Market Monitoring Unit when it is determining pursuant to Section 23.4.5.6.4.2.2 of this Services Tariff whether there is a point in the process of deactivating a Generator after which the deactivation process will become, essentially and practicably, irreversible.

30.4.6.2.13 When evaluating an Examined Facility or NCZ Examined Project pursuant to Section 23.4.5.7 of the Market Mitigation Measures, the ISO shall seek comment from the Market Monitoring Unit on matters relating to the determination of price projections, cost calculations, and the methodology the ISO will use to project net Energy and Ancillary Services for each UDR project, and the inputs used to perform the calculation the ISO's draft list of recommended Exempt Renewable Technologies and the basis for the recommendation; requests pursuant to Section 23.4.5.7.14.1.2(e)(C) regarding whether a "contract" (as defined in Section 23.4.5.7.14.2(e) would make it ineligible to obtain or (if previously granted) retain a Self Supply Exemption. As required by Section 23.4.5.7 of Attachment H to this Services Tariff, the Market Monitoring Unit shall prepare a written report discussing factors that affect the ISO's mitigation exemption and Offer Floor determinations, and confirming whether the ISO's Offer Floor and exemption determinations and calculations conducted pursuant to Sections 23.4.5.7.2 and 23.4.5.7.6, the NYISO's determination of eligible or ineligible for an exemption pursuant to Section 23.4.5.7.9, 23.4.5.7.13, and 23.4.5.7.14 were conducted in accordance with the terms of the Services Tariff, and if not, identifying the flaws inherent in the ISO's approach. This report shall be presented concurrent with the ISO's posting of its mitigation exemption and Offer Floor determinations. Pursuant to Section 23.4.5.7.8 of the Market Mitigation Measures, the ISO shall also consult with the Market Monitoring Unit when evaluating whether any existing or proposed Generator or UDR project in a Mitigated Capacity Zone, except New York City, has Commenced Construction, and determinations of whether it shall be exempted from an Offer Floor under that Section. Prior to the ISO making an exemption determination pursuant to Section 23.4.5.7.8, the Market Monitoring Unit shall provide the ISO a written opinion and recommendation. The Market Monitoring Unit shall also provide a public report on its assessment of an ISO determination that an existing or proposed Generator or UDR project is exempt from an Offer Floor under Section 23.4.5.7.8. *See* Market Mitigation Measures Section 23.4.5.7.

30.4.6.2.14 RMR Generator Energy and Ancillary Service Market Participation Rules.

If a new operating constraint arises while a Generator that is required to comply with the bidding requirements in Section 30.6 of the ISO Services Tariff is an Interim Service Provider that prevents the Market Party from offering all or a portion of the Generator's capability via an ISO-committed flexible Bid, the Market Party shall promptly inform the ISO of the change, shall provide all documentation requested by the ISO or by the Market Monitoring Unit, and shall permit the ISO and/or the Market Monitoring Unit to inspect the affected Generator (including all requested plant records) on five days prior notice. *See* Market Mitigation Measures Section 23.6.1.1.3.

The ISO, in consultation with the Market Monitoring Unit, may review and update an Interim Service Provider's reference levels. The Generator Owner may propose updates to its Interim Service Provider's reference levels. The ISO shall make the ultimate determination with regard to each reference level. *See* Market Mitigation Measures Section 23.6.2.2.

In advance of the execution of an RMR Agreement, the ISO, in consultation with the Market Monitoring Unit and the Generator Owner, shall review and update the reference levels for each affected Generator. The ISO shall make the ultimate determination with regard to each reference level. *See* Market Mitigation Measures Section 23.6.2.3.

If a possible RMR Generator or Interim Service Provider faces operational constraints the ISO, in consultation with the Market Monitoring Unit and the Generator Owner, will develop reference levels that will permit the Generator to operate consistent with the identified constraints, while ensuring that the Generator will be available (a) to resolve the Reliability Need the Generator is being retained to address, and (b) for economic commitment when appropriate. *See* Market Mitigation Measures Section 23.6.2.3.1.

If a physical change to the RMR Generator occurs that alters the RMR Generator's capabilities (*e.g.*, damage to the generator or Capital Expenditures that alter an RMR Generator's capabilities), then the ISO shall determine revised reference levels in consultation with the Market Monitoring Unit and the Generator Owner. *See* Market Mitigation Measures Section 23.6.2.4.4.

The ISO and the Generator Owner, in consultation with the Market Monitoring Unit, may mutually agree to a reference level change that they expect will better reflect an RMR Generator's actual operating characteristics or variable costs. *See* Market Mitigation Measures Section 23.6.2.4.5.

**30.4.6.3 Market Monitoring Unit responsibilities set forth in the ISO Services Tariff**

30.4.6.3.1 The ICAP Demand Curve periodic review schedule and procedures shall provide an opportunity for the Market Monitoring Unit to review and comment on the draft request for proposals, the independent consultant's report, and the ISO's proposed ICAP Demand Curves. *See* ISO Services Tariff Sections 5.14.1.2.1.5 and 5.14.1.2.2.4.5.

30.4.6.3.2 The new capacity zone periodic review shall provide an opportunity for the Market Monitoring Unit to review and comment on the NCZ Study, and any proposed NCZ tariff revisions. See ISO Services Tariff Sections 5.16.1.3 and 5.16.4.

30.4.6.3.3 The capacity value study periodic review shall provide an opportunity for the Market Monitoring Unit to review and comment on the draft request for the proposals, the consultant's report, and the ISO's proposed Energy Duration Limitations and the associated Duration Adjustment Factors, and Peak Load Windows for Resources with Energy Duration Limitations. See ISO Services Tariff Section 5.12.14.3, Periodic Review of Capacity Value Study.

**30.4.6.4 Market Monitoring Unit responsibilities set forth in the Rate Schedules to the ISO Services Tariff.**

**30.4.6.4.1 Responsibilities related to the Regulation Service Demand Curve**

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 in Section 15.3.7 of Rate Schedule 3 to the ISO Services Tariff. 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 90 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.

After the first year the Regulation Service Demand Curve is in place, the ISO shall perform periodic reviews, subject to the scope requirement specified in Section 15.3.7 of Rate Schedule 3 to the ISO Services Tariff, 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. *See* Section 15.3.7 of Rate Schedule 3 to the ISO Services Tariff.

#### 30.4.6.4.2 Responsibilities related to the Operating Reserves Demand Curves and Scarcity Reserve Demand Curve

In order to respond to operational or reliability problems that arise in real-time, the ISO may procure any Operating Reserve product at a quantity and/or price point different than those specified in Section 15.4.7 of Rate Schedule 4 to the ISO Services Tariff. 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 in Section 15.4.7 of Rate Schedule 4 to the ISO Services Tariff in order to avoid future operational or reliability problems it may temporarily modify them for a period of up to 90 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.

After the first year the Operating Reserves Demand Curves are in place, the ISO shall perform periodic reviews, subject to the scope requirement specified in Section 15.4.7 of Rate Schedule 4 to the ISO Services Tariff, and the Market Monitoring Unit shall be given the opportunity to review and comment on the ISO's periodic reviews of the Operating Reserve Demand Curves and Scarcity Reserve Demand Curve.  *See* Section 15.4.7 of Rate Schedule 4 to the ISO Services Tariff.

**30.4.6.5 Market Monitoring Unit responsibilities set forth in the Attachments to the ISO Services Tariff (other than the Market Mitigation Measures).**

**30.4.6.5.1 Responsibilities related to Transmission Shortage Cost**

The ISO may periodically evaluate the Transmission Shortage Cost to determine whether it is necessary to modify the Transmission Shortage Cost to avoid future operational or reliability problems.  The ISO will consult with its Market Monitoring Unit after it conducts this evaluation.

If the ISO determines that it is necessary to modify the Transmission Shortage Cost in order to avoid future operational or reliability problems the resolution of which would otherwise require recurring operator intervention outside normal market scheduling procedures, in order to avoid among other reliability issues, a violation of NERC Interconnection Reliability Operating Limits or System Operating Limits, it may temporarily modify it for a period of up to 90 days, provided however the ISO shall file such change with the Commission pursuant to § 205 of the Federal Power Act within 45 days of such modification.  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 and shall explain the reasons for the change.  *See* Section 17.1.4 of Attachment B to the ISO Services Tariff.

**30.4.6.6 Market Monitoring Unit responsibilities set forth in the ISO OATT**

**30.4.6.7 Market Monitoring Unit responsibilities set forth in the Rate Schedules to the ISO OATT**

**30.4.6.8 Market Monitoring Unit responsibilities set forth in the Attachments to the ISO OATT**

**30.4.6.8.1 Responsibilities related to implementing new scheduling path prohibitions**

If the ISO, acting in consultation with its Market Monitoring Unit, identifies transmission scheduling paths that are being used to schedule External Transactions in a manner that is not consistent with the manner in which power is actually expected to flow, the ISO may submit a compliance filing in FERC Docket No. ER13-780 proposing to expand the list of prohibited scheduling paths included in Section 16.3.3.8 of the ISO OATT.  The ISO's compliance filing will include, or be accompanied by, a discussion of the Market Monitoring Unit's position regarding the ISO's proposal to add a new prohibited scheduling path or new prohibited scheduling paths.  The Market Monitoring Unit's position may be explained in the ISO's filing letter, be set forth in an accompanying affidavit, or be submitted by the Market Monitoring Unit as a companion filing or as comments on the ISO's compliance filing in Docket No. ER13-780. *See* Section 16.3.3.8 of Attachment J to the ISO OATT.

#### 30.4.6.8.2 Responsibilities related to the draft Reliability Needs Assessment

Following the Management Committee vote, the draft Reliability Needs Assessment (RNA), with working group, Operating Committee, and Management Committee input, will be forwarded to the ISO Board for review and action. Concurrently, the draft RNA will be provided to the Market Monitoring Unit for its review and consideration of whether market rules changes are necessary to address an identified failure, if any, in one of the ISO's competitive markets. *See* Section 31.2.3.2 of Attachment Y to the ISO OATT.

#### 30.4.6.8.3 Responsibilities related to the draft Comprehensive Reliability Plan

Following the Management Committee vote, the draft Comprehensive Reliability Plan (CRP), with working group, Operating Committee, and Management Committee input, will be forwarded to the ISO Board for review and action. Concurrently, the draft CRP will also be provided to the Market Monitoring Unit for its review and consideration of whether market rule changes are necessary to address an identified failure, if any, in one of the ISO's competitive markets. *See* Section 31.2.7.2 of Attachment Y to the ISO OATT.

#### 30.4.6.8.4 Responsibilities related to the draft System & Resource Outlook

Following the Management Committee vote, the draft System & Resource Outlook, with Business Issues Committee and Management Committee input, will be forwarded to the ISO Board for review and action. Concurrently, the draft System & Resource Outlook will be provided to the Market Monitoring Unit for its review and consideration. *See* Section 31.3.1.8.2 of Attachment Y to the ISO OATT.

#### 30.4.6.8.5 Responsibilities related to the draft Public Policy Transmission Planning Report

The ISO will provide the draft Public Policy Transmission Planning Report to the Market

Monitoring Unit for its review and consideration of any impact on the ISO-administered markets of regulated transmission solutions proposed to satisfy a Public Policy Transmission Need. *See* Sections 31.4.9 and 31.4.10.1 of Attachment Y to the ISO OATT. The Market Monitoring Unit's evaluation will be provided to the Management Committee before the Management Committee's advisory vote. *See* Section 31.4.10.1 of Attachment Y. Following the Management Committee vote, the draft Public Policy Transmission Planning Report, with Business Issues Committee and Management Committee input, will be forwarded to the ISO Board for review and action. Concurrent with the submission to the ISO Board of the draft Public Policy Transmission Planning Report, the Market Monitoring Unit's evaluation will be provided to the ISO Board. *See* Section 31.4.7 of Attachment Y to the ISO OATT.

**30.4.6.8.6 Responsibilities Related to Market Monitoring Unit Review of Reliability Must Run Costs and RMR Avoidable Cost Determinations**

The ISO shall seek comments from the Market Monitoring Unit on matters relating to the inputs and the calculations the ISO performed pursuant to Section 38.8 of Attachment FF of the ISO OATT. *See* Section 38.8.2 of Attachment FF of the ISO OATT.

The ISO shall seek comments from the Market Monitoring Unit on its review of Proposed Additional Costs and its determinations of Substantiated Additional Costs under Section 38.16 of Attachment FF of the ISO OATT. *See* Section 38.16.2.2 of Attachment FF of the ISO OATT.

Concurrent with the ISO or a Generator filing with the Commission an RMR Agreement pursuant to Sections 38.11.3, 38.11.4 or 38.11.5 of Attachment FF to the ISO OATT, the Market Monitoring Unit shall publish a report. The report shall review the ISO's determination of the highest net present value offer (or more than one offer) to provide RMR service in accordance with Sections 38.8, 38.9 and 38.10 of Attachment FF to the ISO OATT. In the event that cost alone did not provide for a clear delineation between two or more RMR Service Offers, the report shall also review the ISO's consideration of the Generator Owner's proposed changes to the *Form of Reliability Must Run Agreement* and the operational, performance and market impacts, and the size of the Generators. If the RMR Agreement contains RMR Avoidable Costs and an Availability and Performance Rate, the report shall also review the inputs to, and ISO's calculation of, the RMR Avoidable Costs and the Availability and Performance Rate. *See* Section 38.18.3 of Attachment FF to the ISO OATT.

#### 30.4.6.9 Market Monitoring Unit responsibilities set forth in other documents that have been formally filed with the Commission

#### 30.4.6.10 Market Monitoring Unit responsibilities set forth in the Form of Reliability Must Run Agreement, Appendix C to Attachment FF of the ISO OATT

The ISO and the Market Monitoring Unit shall monitor deviations from each RMR Generator's historic planned outage schedules. Owner shall promptly respond to ISO and Market Monitoring Unit requests for explanations, information and data regarding or supporting outage schedules. *See* Section 7.1.3 of the *Form of Reliability Must Run Agreement.*

The ISO and the Market Monitoring Unit shall monitor deviations from each RMR Generator's historic forced outage rate. Owner shall promptly respond to ISO and Market Monitoring Unit requests for explanations, information and data regarding or supporting forced outages, including the time required to return from a Forced Outage. *See* Section 7.2.2 of the *Form of Reliability Must Run Agreement.*

#### 30.4.6.11 Additional Market Monitoring Unit responsibilities related to Reliability Must Run Agreements

The Market Monitoring Unit shall review any Owner-Developed Rate that is filed with the Commission as described in Section 4.5 of the *Form of Reliability Must Run Agreement*. The

Market Monitoring Unit shall intervene and participate in Commission proceedings concerning such filings. It shall submit, as appropriate, comments or a protest in such a proceeding describing its review and informing the Commission of whether it has found a proposed Owner Developed Rate to be consistent with, or in excess of, an RMR Generator's full cost of service. The Market Monitoring Unit shall also inform the Commission of whether: (i) it believes the proposed Owner Developed Rate, including its terms and conditions of service, is or is not just and reasonable; and (ii) it has any other concerns with the proposed Owner Developed Rate.

**30.4.7 Availability of Data and Resources to Market Monitoring Unit**

30.4.7.1 The ISO shall ensure that the Market Monitoring Unit has sufficient access to ISO resources, personnel and market data to enable the Market Monitoring Unit to carry out its functions under Attachment O. Consistent with Section 30.6.1 of Attachment O, the Market Monitoring Unit shall have complete access to the ISO's databases of market information.

30.4.7.2 Any data created by the Market Monitoring Unit, including but not limited to reconfiguration of the ISO's data, will be kept within the exclusive control of the Market Monitoring Unit. The Market Monitoring Unit may share the data it creates, subject to the limitations on distribution of and obligation to protect the confidentiality of Protected Information that are contained in Attachment O, the ISO Services Tariff, and the ISO's Code of Conduct.

30.4.7.3 Where data outside the ISO's geographic footprint would be helpful to the Market Monitoring Unit in carrying out its duties, the Market Monitoring Unit should seek out that data (with assistance from the ISO, where appropriate).

## 30.6 Data Collection and Disclosure

### 30.6.1 Access to ISO Data and Information

For purposes of carrying out their responsibilities under Attachment O, the Market Monitoring Unit and MMA shall have access to, and shall endeavor primarily to rely upon (but shall not be limited to), data or other information gathered or generated by the ISO in the course of its operations. This data and information shall include, but not be limited to, data or information gathered or generated by the ISO in connection with its scheduling, commitment and dispatch of supply, its determination of Locational Based Marginal Pricing, its operation or administration of the New York State Transmission System, and data or other information produced by, or required to be provided to the ISO under its Tariffs, the New York Independent System Operator Agreement, the New York State Reliability Council Agreement, or any other relevant tariffs or agreements.

### 30.6.2 Data from Market Parties

#### 30.6.2.1 Data Requests

If the Market Monitoring Unit or MMA, determines that additional data or other information is required to accomplish the objectives of Attachment O or of the Market Mitigation Measures, the ISO may request the persons or entities possessing, having access to, or having the ability to generate or produce such data or other information to furnish it to the ISO or to its Market Monitoring Unit. Any such request shall be accompanied by an explanation of the need for such data or other information, a specification of the form or format in which the data is to be produced, and an acknowledgment of the obligation of the ISO and its Market Monitoring Unit to maintain the confidentiality of data or information appropriately designated as Protected Information by the party producing it.

A party receiving an information request from the ISO shall furnish all information, in the requested form or format, that is:  (i) included on the below list of categories of data or information that it may routinely request from a Market Party; or (ii) reasonably necessary to achieve the purposes or objectives of Attachment O, not readily available from some other source that is more convenient, less burdensome and less expensive, and not subject to an attorney-client or other generally recognized evidentiary doctrine of confidentiality or privilege.

The categories data or information that may be routinely requested shall be limited to data or information the routine provision of which would not be unduly burdensome or expensive, and which has been reasonably determined by the ISO, in consultation with its Market Monitoring Unit, to be likely to be relevant to the purposes and objectives of Attachment O or the Market Mitigation Measures.

**30.6.2.2 Categories of Data the ISO May Request from Market Parties**

The following categories of data or information may be obtained by the ISO from Market Parties in accordance with Attachment O.  Market Parties shall retain the following categories of data or information for the period specified in Section 30.6.3 of Attachment O.

30.6.2.2.1 Production costs – Data or information relating to the costs or operating a specified Electric Facility (for generating units such data or information shall include, but not be limited to, heat rates, start-up fuel requirements, fuel purchase costs, and operating and maintenance expenses) or data or information relating to the costs of providing load reductions from a specified facility participating as a Demand Side Resource in the ISO Energy, Operating Reserves or Regulation Service markets.

30.6.2.2.2 Opportunity costs – Data or information relating to a claim of opportunity costs, including, but not limited to, contracts or price quotes.

30.6.2.2.3 Logs – Data or information relating to the operating status of an Electric Facility, including, for generating units, generator logs showing the generating status of a specified unit or data or information relating to the operating status of a specified facility participating as a Demand Side Resource in the ISO Energy, Operating Reserves or Regulation Service markets. Such data or information shall include, but not be limited to, any information relating to the validity of a claimed forced outage or derating of a generating unit or other Electric Facility or a facility participating as a Demand Side Resource in the ISO Energy, Operating Reserves or Regulation Service markets.

30.6.2.2.4 Bidding or Capacity Agreements – Documents, data, or information relating to a Market Party or its Affiliate conveying to or receiving from another entity the ability: (i) to determine the bid/offer of (in any of the markets administered by the ISO); (ii) to determine the output level of; or (iii) to withhold; generation that is owned by another entity. At the request of the producing entity, the ISO may (but is not required to) permit the documents, data or information produced in response to the foregoing specification to be partially redacted, or the ISO may agree to other measures for the protection of confidential or commercially sensitive information, provided that the ISO receives the complete text of all provisions relating to the subjects specified in this Section 30.6.2.2.4

30.6.2.2.5 Other Cost and Risk Data Supporting Reference Levels or ICAP mitigation determinations or Going-Forward Costs – All data or information not specifically identified above that: (i) supports or relates to a Market Party's claimed, requested, or approved reference levels or Going-Forward Costs (as that term is defined in the Market Mitigation Measures) for a particular resource; or (ii) are necessary for the ISO to make a mitigation determination under Services Tariff Section 23.4.5.7, including data or information: (a) necessary to determine a Market Party's Unit Net CONE (as that term is defined in the Market Mitigation Measures) for a particular resource; or (b) required to evaluate a Market Party for a mitigation determination, including information from a Market Party's Affiliates, as appropriate.

30.6.2.2.6 Information Related to RMR Agreements -- All information that the NYISO is authorized to obtain under Appendix B to Attachment FF to the OATT.

30.6.2.2.7 Ownership and Control – Data or information identifying a Market Party's Affiliates.

**30.6.2.3 Enforcement of Data Requests**

30.6.2.3.1 A party receiving a request for data or information specified in Section 30.6.2.2 of Attachment O shall promptly provide it to the ISO, and may not contest the right of the ISO to obtain such data or information except to the extent that the party has a good faith basis to assert that the data or information is not included in any of the categories on the list.

30.6.2.3.2 If a party receiving a request for data or information not specified in Section 30.6.2.2 of Attachment O believes that production of the requested data or information would impose a substantial burden or expense, or would require the party to produce information that is not relevant to achieving the purposes or objectives of Attachment O, or would require the production of data or information of extraordinary commercial sensitivity, the party receiving the request shall promptly so notify the ISO, and the ISO shall review the request with the receiving party with a view toward determining whether, without unduly compromising the objectives of Attachment O, the request can be narrowed or otherwise modified to reduce the burden or expense of compliance, or special confidentiality protections are warranted, and if so shall so modify the request or the procedures for handling data or information produced in response to the request.

30.6.2.3.3 If the ISO determines that the requested information has not or will not be provided within a reasonable time, the ISO may invoke the dispute resolution provisions of the ISO Services Tariff to determine the ISO's right to obtain the requested information. The parties may agree to submit any such determination to binding arbitration and may seek expedited resolution, in accordance with the applicable dispute resolution procedures. The ISO may initiate judicial or regulatory proceedings at any time to compel the production of the requested information.

### 30.6.3 Data Retention

30.6.3.1 Section 30.6.3 of Attachment O sets forth requirements for the retention of market information by the ISO, by the Market Monitoring Unit and by Market Parties. The provisions of this data retention policy are binding on the ISO, on the Market Monitoring Unit and on Market Parties.

30.6.3.2 Except as specified herein, a Market Party shall retain the data and information specified in Section 30.6.2.2 of Attachment O for a period of six years from the date to which the data relates.

30.6.3.3 The ISO or its Market Monitoring Unit (as appropriate) shall retain for a period of six years from the date to which the data or information relates:

30.6.3.3.1 data or information required to be submitted to, or otherwise used by, the ISO in connection with the bidding, scheduling and dispatch of resources or loads in the New York energy, ancillary services, TCC or Installed Capacity (ICAP) markets;

30.6.3.3.2 data or information used or monitored by the ISO on system conditions in the New York Control Area, including but not limited to transmission constraints or planned or forced facility outages, that materially affect transmission congestion costs or market conditions in the New York energy, ancillary services or ICAP markets;

30.6.3.3.3 data or information collected by the ISO or by the Market Monitoring Unit (as appropriate) in the course of their implementation of Attachment O or the Market Mitigation Measures, on conditions in markets external to New York, or on fuel prices or other economic conditions that materially affect market conditions in the New York energy, ancillary services, TCC or ICAP markets;

30.6.3.3.4 data or information relating to the imposition of, or a decision not to impose, mitigation measures; and

30.6.3.3.5 such other data or information as the MMA or Market Monitoring Unit deem it necessary to collect in order to implement Attachment O or the Market Mitigation Measures.

30.6.3.4 The foregoing obligations to retain data or information shall not alter any data retention requirements that may otherwise be applicable to the ISO, to the Market Monitoring Unit, or to a Market Party; nor shall any such other data retention requirement alter the requirements specified above.

30.6.3.5 The ISO, Market Monitoring Unit or a Market Party may, at its option, purge or otherwise destroy any data or information that has been retained for the longest applicable period specified above, provided the retention of such data or information is not mandated by the FERC, the New York Public Service Commission, or other applicable requirement or obligation.

30.6.3.6 Compliance with the requirements specified herein for the retention of data or information shall not suspend or waive any statute of limitations or doctrine of laches, estoppel or waiver that may be applicable to any claim asserted against the ISO, the Market Monitoring Unit, or a Market Party.

### 30.6.4 Confidentiality

The Market Monitoring Unit and the ISO shall use all reasonable procedures necessary to protect and preserve the confidentiality of Protected Information, provided that such information is not available from public sources, is not otherwise subject to disclosure under any tariff or agreement administered by the ISO, and is properly designated as Protected Information. The ISO and the Market Monitoring Unit's obligation to protect and preserve the confidentiality of

Protected Information shall be of a continuing nature, and shall survive the rescission, termination or expiration of this Plan.

Except as may be required by subpoena or other compulsory process, or as authorized in the ISO's Tariffs and governing documents (including this Plan), the Market Monitoring Unit and the ISO shall not disclose Protected Information to any person or entity without the prior written consent of the party that the Protected Information pertains to. Upon receipt of a subpoena or other compulsory process for the disclosure of Protected Information, the ISO and/or the Market Monitoring Unit shall promptly notify the party that the Protected Information pertains to, and shall provide all reasonable assistance requested by the party to prevent or limit disclosure. Upon receipt of a subpoena or other compulsory process for the disclosure of Protected Information that was provided to the ISO or the Market Monitoring Unit pursuant to Section 30.6.6 below, the ISO or the Market Monitoring Unit, as appropriate, shall promptly notify the entity that provided the Protected Information and shall provide all reasonable assistance requested by that party to prevent or limit disclosure. Nothing in this Plan alters any existing statutory jurisdiction or authority to compel disclosure that may apply to the ISO, its Market Monitoring Unit, or to any other ISO, RTO, or market monitoring unit.

The ISO may, in consultation with the Market Monitoring Unit, adopt further or different procedures for the designation of information as Protected Information, or for the reasonable protection of Protected Information, after providing an opportunity for interested parties to review and comment on such procedures; provided, however, that such further or different procedures shall not permit the ISO or Market Monitoring Unit to disclose data or information that would be protected from disclosure under the procedures in place at the time the data or information was provided to the ISO or to the Market Monitoring Unit.

### 30.6.5 Collection and Availability of Information

30.6.5.1 The ISO and the Market Monitoring Unit shall regularly collect and maintain the information necessary for implementing Attachment O.

The ISO and the Market Monitoring Unit may provide Protected Information to each other as they determine necessary to carry out the purposes of this Plan.

30.6.5.2 The ISO, in consultation with the Market Monitoring Unit, shall make publicly available: (i) a description of the categories of data and information collected and maintained by the MMA and Market Monitoring Unit; (ii) such data or information as may be useful for the competitive or efficient functioning of any of the New York Electric Markets that can be made publicly available consistent with the confidentiality of Protected Information; and (iii) if and to the extent consistent with confidentiality requirements, such summaries, redactions, abstractions or other non-confidential compilations, versions or reports of Protected Information as may be useful for the competitive or efficient functioning of any of the New York Electric Markets. Any such proposed methods for creating non-confidential reports of such information shall only be adopted after provision of a reasonable opportunity for, and consideration of, the comments of Market Parties and other interested parties. All such proposed or adopted methods shall be set forth in the ISO Procedures, shall be made available through the ISO web site or comparable means, and shall be subject to review and approval by the Board.

30.6.5.3 Consistent with the foregoing requirements, the ISO and its Market Monitoring Unit shall make available, through the ISO web site or comparable means, such reports on the New York Electric Markets as they determine will, at reasonable cost, facilitate competition in those markets.

30.6.5.4 Any data or other information collected by the ISO relating to any of the New York Electric Markets shall be provided upon request, and without undue discrimination between requests, to a Market Party, other interested party, or an Interested Government Agency, provided: (i) such data or information is not Protected Information, or the party designating it as Protected Information has consented in writing to its disclosure; (ii) such information can be provided without undue burden or disruption to, or interference with the other duties and responsibilities of the ISO; and (iii) the requesting party, if other than an Interested Government Agency, provides appropriate guarantees of reimbursement of the costs to the ISO of compiling and disclosing the data or information. If the ISO determines that doing so would not be unduly burdensome or expensive, or inconsistent with maintaining the competitiveness or economic efficiency of any market, the ISO shall make data or information provided in accordance with this paragraph available to interested parties through the ISO web site or other appropriate means.

30.6.5.5 The New York Public Service Commission and any Other State Commission may make tailored requests to the Market Monitoring Unit for information related to general market trends and the performance of the New York Electric Markets. If the Market Monitoring Unit determines that such a request is not unduly burdensome, it shall provide the information sought, subject to the restrictions and limitations established in Sections 30.6.5.5.1, 30.6.5.5.2 and 30.6.5.5.4, below.

30.6.5.5.1 Except as provided in this Section 30.6.5.5.1, the Market Monitoring Unit shall not provide Protected Information to the New York Public Service Commission or to an Other State Commission in response to a request under Section 30.6.5.5 above. The Market Monitoring Unit may, but is not required to, provide Protected Information to the New York Public Service Commission or any Other State Commission when the party to which the requested Protected Information pertains has consented in writing to its disclosure. The Market Monitoring Unit may, but is not required to, provide Protected Information to the New York Public Service Commission or an Other State Commission if the general counsel/chief legal officer of the requesting state commission certifies, in writing, that: (i) the requested Protected Information will be protected from disclosure by law (and provides copies of the relevant laws, rules or regulations under which the requested Protected Information is protected from public disclosure); (ii) the requested Protected Information will be treated as confidential to the fullest extent of the laws of its state; (iii) the state commission will promptly notify the Market Monitoring Unit if it receives a request for disclosure of all or part of the Protected (iv) the state commission agrees to provide all reasonable and permissible assistance to prevent further disclosure of Protected Information provided by the Market Monitoring Unit to the state commission in response to a request governed by Section 30.6.5.5 of this Plan; and (v) the Protected Information will not be used for a state enforcement action.

The Market Monitoring Unit shall not provide Protected Information it received from another ISO or RTO, or from a market monitoring unit for another ISO or RTO, pursuant to the authority to share information granted by Section 30.6.6 of this Plan, in response to a request under Section 30.6.5.5 of this Plan. Instead, the Market Monitoring Unit shall identify to the requesting state commission the ISO, RTO or market monitoring unit that provided the information to the Market Monitoring Unit, so that the New York Public Service Commission or Other State Commission may request the Protected Information directly from its source in accordance with the provisions of the providing entity's tariffs, other governing documents, or an applicable law or rule.

30.6.5.5.2 Prior to disclosing Protected Information pertaining to a particular Market Party in response to a tailored request made under Section 30.6.5.5, the Market Monitoring Unit shall (1) notify the Market Party or Parties to which the Protected Information pertains of the request and describe the information that the Market Monitoring Unit proposes to disclose, and (2) allow the Market Party or Parties a reasonable time to object to the disclosure and to provide context to the Protected Information related to it. Providing the opportunity for Market Parties to object to disclosure, or to provide context to the information being produced shall not be permitted to unduly delay its release.

30.6.5.5.3 Section 30.6.5.5 of Attachment O pertains to requests by the New York Public Service Commission and Other State Commissions to the Market Monitoring Unit to provide information. Section 30.6.4 of Attachment O addresses how the Market Monitoring Unit responds to compulsory processes, such as subpoenas and court orders.

30.6.5.5.4 In responding to a request under Section 30.6.5.5 of Attachment O, the Market Monitoring Unit shall not knowingly provide information to the New York Public Service Commission, or to any Other State Commission, that is designed to aid a state enforcement action.

30.6.5.5.5 The New York Public Service Commission or any Other State Commission may petition FERC to require the ISO to release information that the Market Monitoring Unit is not required to release, or that the Market Monitoring Unit is proscribed from releasing, under this Section 30.6.5.5 of Attachment O.

30.6.5.6 The Market Monitoring Unit shall respond to information and data requests issued to it by the Commission or its staff. If the Commission or its staff, during the course of an investigation or otherwise, requests Protected Information from the Market Monitoring Unit that is otherwise required to be maintained in confidence, the Market Monitoring Unit shall provide the requested information to the Commission or its staff within the time provided for in the request for information. In providing the information to the FERC or its staff, the Market Monitoring Unit shall, consistent with any FERC rules or regulations that may provide for privileged treatment of that information, request that the information be treated as confidential and non-public by the FERC and its staff and that the information be withheld from public disclosure. The Market Monitoring Unit shall not be held liable for any losses, consequential or otherwise, resulting from the Market Monitoring Unit divulging such Protected Information pursuant to a request under this Section 30.6.5.6. After the Protected Information has been provided to the Commission or its staff, the Market Monitoring Unit shall immediately notify any affected Market Participant(s) when it becomes aware that a request for disclosure of such Protected Information has been received by the Commission or its staff, or a decision to disclose such Protected Information has been made by the Commission, at which time the Market Monitoring Unit and the affected Market Participant(s) may respond before such information would be made public, pursuant to the Commission's rules and regulations that may provide for privileged treatment of information provided to the Commission or its staff.

### 30.6.6 Sharing Information with Other ISOs/RTOs and Market Monitoring Units

30.6.6.1 The Market Monitoring Unit or the ISO may disclose Protected Information to another ISO or RTO or to another ISO or RTO's market monitoring unit (each a "Requesting Entity" in Section 30.6.6 of the Plan) if the Requesting Entity submits a written request stating that the requested Protected Information is necessary to an investigation or evaluation that the Requesting Entity is undertaking within the scope of its approved tariffs, other governing documents, or an applicable law or rule to determine (a) if market power is being, or has been, exercised, (b) if market manipulation is occurring or has occurred, or (c) if a market design flaw exists between interconnected markets, and either (i) demonstrates (by providing copies of the relevant documents, provisions, statutes, rules, orders, etc.) that its tariff or other governing document limits further disclosure of the Protected Information in a manner that satisfies all of the requirements set forth in Section 30.6.6.1.1, below, or (ii) executes a non-disclosure agreement with the ISO and/or the Market Monitoring Unit that incorporates all of the requirements set forth in Section 30.6.6.1.1 below, and provides a written certification that the Requesting Entity possesses legal authority to enter into the required non-disclosure agreement and to be bound by its terms.

30.6.6.1.1 The Requesting Entity's governing documents or non-disclosure agreement must:

(1) protect Protected Information that the ISO or the Market Monitoring Unit provides from disclosure, except where disclosure may be required by the FERC or by subpoena or other compulsory process;

(2) establish a legally enforceable obligation to treat Protected Information provided by the ISO or its Market Monitoring Unit as confidential. Such obligation must be of a continuing nature, and must survive the rescission, termination or expiration of the applicable tariff(s), other governing document(s) or non-disclosure agreement;

(3) require state commissions to request Protected Information provided by the ISO or its Market Monitoring Unit directly from the ISO or its Market Monitoring Unit, in a manner consistent with Section 30.6.5.5.1 of this Plan, and promptly inform the ISO or its Market Monitoring Unit of any requests received from a state commission for Protected Information provided by the ISO or its Market Monitoring Unit;

(4) require the Requesting Entity to promptly notify the ISO or its Market Monitoring Unit and seek appropriate relief to prevent or, if it is not possible to prevent, to

limit disclosure in the event that a subpoena or other compulsory process seeks to require disclosure of Protected Information provided by the ISO or its Market Monitoring Unit;

(5) require the Requesting Entity to promptly notify the ISO or its Market Monitoring Unit of any third party requests for additional disclosure of the Protected Information where Protected Information provided by the ISO or its Market Monitoring Unit has been disclosed to a court or regulatory body in response to a subpoena or other compulsory process, and to seek appropriate relief to prevent or limit further disclosure; and

(6) require the destruction of the Protected Information at the earlier of (i) five business days after a request from the ISO or its Market Monitoring Unit for the return of the Protected Information is received, or (ii) the conclusion or resolution of the investigation or evaluation.

30.6.6.2 The ISO or the Market Monitoring Unit may undertake a joint investigation with another ISO/RTO or with another ISO or RTO’s market monitoring unit to determine (a) if market power is being, or has been, exercised, (b) if market manipulation is occurring or has occurred, or (c) if a market design flaw exists in or between interconnected markets. In such a case, the ISO and the Market Monitoring Unit may disclose Protected Information to the other ISO/RTO or market monitoring unit as necessary to achieve the objectives of the investigation; provided that the ISO or Market Monitoring Unit first receives a written certification from the other ISO/RTO or market monitoring unit that its tariffs or other governing documents meet the standards set forth in this Section

30.6.6 or executes a non-disclosure agreement.

30.6.6.3 If the ISO discloses Protected Information to a Requesting Entity that is a jurisdictional ISO or RTO, the ISO shall also provide the Protected Information to the Requesting Entity's market monitoring unit as soon as the Requesting Entity's market monitoring unit satisfies the requirements of Section 30.6.6.1.1, above.

30.6.6.4 Protected Information provided by another ISO/RTO or market monitoring unit to the ISO or to the Market Monitoring Unit pursuant to the provisions of this Plan shall either be destroyed or returned to the entity that provided the Protected Information at the earlier of (i) five business days after receipt of a request from that entity for the return of the Protected, or (ii) the conclusion or resolution of the matter being investigated.