

Attachment II

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 in the NYCA, Energy Limited Resources, Generators, Installed Capacity Marketers, Interruptible Load Resources or System Resources rated 1 MW or greater, other than entities purchasing Installed Capacity from External System Resources located in External Control Areas that have agreed to certain curtailment conditions (see below), and other than Special Case Resources which are subject to the information requirements of Section 5.12.8 of this Tariff, must: (i) provide information reasonably requested by the ISO including the name and location of Generators and Interruptible Load Resources; (ii) provide documentation to the ISO, of DMNC testing for the previous like Capability Period, or historical production data for the previous like Capability Period, no more than twelve (12) months old, except in the case of new Generators, or, in the case of Interruptible Load Resources, documentation of sustained disconnection for one (1) hour or longer that is no more than one (1) year old, in accordance with ISO Procedures; (iii) abide by the ISO Generator maintenance coordination procedures; (iv) provide the expected return date from any outages (including partial outages) to the ISO; (v) provide documentation demonstrating that it will not utilize the same Installed Capacity for more than one (1) buyer at the same time; (vi) if the resource is an Energy Limited Resource, Generator or System Resource it must commit that it will either schedule it in Day-Ahead Bilateral Transactions to supply Load within the NYCA or bid it into the Day-Ahead Energy Market, unless the Energy Limited Resource, Generator or System Resource is unable to do so due to a maintenance or forced outage or due to temperature related de-ratings; (vii) if the resource is an Interruptible Load Resource, it must commit that it will bid, at the price at which it is willing to be interrupted, in the Day-Ahead Market, for both Energy and Operating Reserves; (viii) abide by ISO Procedures; and (ix) prior to May 1, 2001, Installed Capacity Suppliers located east of the central-east constraint shall bid in the Day-Ahead and Real-Time Markets all capacity available for supplying 10-Minute NSR (unless the Generator is unable to meet its commitment because of a scheduled or forced outage), except for the generators described in subsections (a), (b), (c) and (d) below:

- (a) Generators providing Energy under existing contracts (including PURPA contracts) in which the power purchasers 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 existing must-take PURPA contracts 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;
- (b) 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) and/or topping or extraction turbine 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 365 MW of such units;
- (c) Existing intermittent (i.e., non-schedulable) renewable resource Generators within the NYCA, plus up to an additional 50 MW of such Generators; and
- (d) Units that have demonstrated to the NYISO that they are subject to environmental, contractual or other legal or physical requirements that would otherwise preclude them from providing 10-Minute NSR.

The ISO shall inform each potential Installed Capacity Supplier that is required to submit DMNC data of its approved DMNC ratings for the Summer Capability Period no later than February 15th, and for the Winter Capability Period no later than August 15th.

In the case of entities purchasing Installed Capacity from External System Resources located in External Control Areas that have agreed not to curtail the Installed Capacity or to afford it the same curtailment priority that they afford their own Control Area Load, the information submission requirements for certification as an Installed Capacity Supplier shall be established in the ISO Procedures.

Rate Schedule 4

Payments for Supplying Operating Reserves

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

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

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

The ISO shall satisfy at least fifty (50) percent of the applicable 10-Minute Reserve requirements with Spinning Reserve. If the ISO satisfies all of the 10-Minute Reserve

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

Procedure for Setting Prices for Reserves

The ISO's software design substitutes higher quality reserves in place of lower quality reserves, when doing so lowers the total bid cost, *i.e.*, when the marginal bid for the higher quality reserve is lower than the marginal bid for the lower quality reserve. To the extent, however, that reliability standards require the use of higher quality reserves, substitution cannot be made in the opposite direction. In addition, if the total requirements for operating reserves are such that the marginal unit of operating reserves is a unit of higher priced lower quality reserves (*e.g.*, 10-Minute NSR as compared to 10-Minute spinning reserves), then the market-clearing price for operating reserves will be set by the higher priced lower quality reserves.

Accordingly, the price of higher quality reserves will not clear at a price below the price of lower quality reserves. For example, the clearing price of 10-Minute spinning reserves will not be below the clearing price for 10-Minute NSR and the clearing price for 10-Minute NSR will not be below the clearing price for 30-Minute Reserves.

1.0 General Requirements

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

2.0 Spinning Reserve-Requirements and Responsibilities

2.1 Day-Ahead Market for Spinning Reserve

Suppliers offering Generator or Demand Side Resources to provide Spinning Reserve in the Day-Ahead commitment shall submit Availability Bids for each hour of the upcoming day. The ISO shall select Spinning Reserve Suppliers for each hour of the upcoming day through its Day-Ahead commitment, using Bids and/or schedules provided by the Suppliers, including Availability Bids by both Class A Unit and Class B Unit Suppliers, and Energy Bids by Class A Unit Suppliers. The ISO shall notify each Supplier of Spinning Reserve that has been selected in the Day-Ahead Schedule of the amount of Spinning Reserve it has been scheduled to provide. Suppliers of Spinning Reserve scheduled Day-Ahead shall either

provide Spinning Reserve or shall generate Energy when requested by the ISO to do so, in all hours for which they have been selected to provide Spinning Reserve.

2.2 Real-Time Market for Spinning Reserve

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

These real-time Availability Bids may differ from Availability Bids that were made by those Suppliers in the Day-Ahead commitment. If the ISO anticipates that it will require additional Spinning Reserves in an hour, it shall select additional Suppliers of Spinning Reserve from among those Suppliers that have submitted Real-Time Availability Bids to it for that hour. It shall make this selection with the objective of minimizing the cost of meeting Load and providing all necessary Ancillary Services in that hour. The ISO shall notify each Supplier of Spinning Reserve that has been selected in the Real-Time dispatch of the amount of Spinning Reserve it must provide. Any previously uncommitted Class A Unit whose Bid to provide Spinning Reserve is accepted by the ISO will be treated as a Generator on dispatch.

2.3 Suppliers' Responsibilities

All Generators selected by the ISO as Suppliers of Spinning Reserve must be located within the NYCA and must be under ISO Operational Control. All Suppliers of Spinning Reserves selected by the ISO shall ensure that their Generators maintain and deliver the

appropriate quantity of Energy when called upon by the ISO in all hours in which they have been selected to provide Spinning Reserve. Each Generator bidding to supply Spinning Reserve must be able to provide Energy consistent with the Reliability Rules and the ISO Procedures when called upon by the ISO and shall specify in its Bid the amount of time for which it can supply such Energy.

Class A Units may not use, contract to provide, or otherwise commit any Capacity that has been scheduled to operate or to provide Operating Reserves, in either the Day-Ahead commitment or any supplemental commitment conducted by the ISO. They also may not increase the Energy Bids made for the portions of those Generators that have been scheduled Day-Ahead to provide Spinning Reserve. They may enter into alternate sales arrangements utilizing any Capacity that has not been scheduled to operate or to provide Operating Reserves. Class B Units may not use, contract to provide or otherwise commit any Capacity that has been scheduled to provide Spinning Reserve, in either the Day-Ahead commitment or in any subsequent commitment by the ISO. Subject to the limitations on Installed Capacity Suppliers, if applicable, they may enter into alternate sales arrangements utilizing any Capacity that has not been scheduled to provide Spinning Reserve.

2.4 Spinning Reserve Service in Real-Time Operation

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

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

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

Suppliers offering Generators to provide 10-Minute NSR and/or 30-Minute Reserve in the Day-Ahead commitment shall submit Availability Bids for each hour of the upcoming day. For Suppliers located east of the central-east constraint, Day-Ahead Availability Bids to provide 10-Minute NSR for each hour shall be limited to the incremental costs associated with the provision of 10-Minute NSR, not to exceed: (i) for the period between November 1, 2000 and December 31, 2000, \$15/MW in each hour; and (ii) for the period between January 1, 2001 and April 30, 2001, \$30/MW in each hour. The ISO shall select Suppliers of 10-Minute NSR and 30-Minute Reserve for each hour of the upcoming day through the Day-Ahead commitment, using Bids and/or schedules provided by the Suppliers. The ISO shall notify each Supplier of 10-Minute NSR and/or 30-Minute Reserve that has been selected in the Day-Ahead schedule of the amount of 10-Minute NSR and/or 30-Minute Reserve it has been scheduled to provide.

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

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

During the day, Suppliers that have not been scheduled to provide 10-Minute NSR or 30-Minute Reserve and which still have Capacity that has not been committed for use in any other way may submit Availability Bids to provide 10-Minute NSR and/or 30-Minute Reserve to the ISO. These real-time Availability Bids may differ from Availability Bids that were made by those

Suppliers in the Day-Ahead commitment, except that for Suppliers located east of the central-east constraint, real-time Availability Bids to provide 10-Minute NSR for each hour shall be limited to the incremental costs associated with the provision of 10-Minute NSR, not to exceed: (i) for the period between November 1, 2000 and December 31, 2000, \$15/MW in each hour; and (ii) for the period between January 1, 2001 and April 30, 2001, \$30/MW in each hour. If the ISO anticipates that additional Suppliers of 10-Minute NSR or 30-Minute Reserve are needed in an hour, it shall select additional Suppliers of 10-Minute NSR or 30-Minute Reserve from among those Suppliers that have supplied real-time Availability Bids

to it for that hour. It shall make this selection with the objective of minimizing the cost of meeting Load and providing all necessary Ancillary Services in that hour.

The ISO may perform multiple selections of Suppliers of 10-Minute NSR or 30-Minute Reserve for any given hour. Suppliers bidding to supply 10-Minute NSR or 30-Minute Reserve that have not already been scheduled to provide 10-Minute NSR or 30-Minute Reserve may change their real-time Bids from one hour to the next, except that for Suppliers located east of the central-east constraint, real-time Availability Bids to provide 10-Minute NSR for each hour shall be limited to the incremental costs associated with the provision of 10-Minute NSR, not to exceed: (i) for the period between November 1, 2000 and December 31, 2000, \$15/MW in each hour; and (ii) for the period between January 1, 2001 and April 30, 2001, \$30/MW in each hour. The ISO shall notify each Supplier of 10-Minute NSR or 30-Minute Reserve that has been scheduled in the real-time dispatch of the amount of 10-Minute NSR or 30-Minute Reserve it must provide. Any Supplier whose Bid to provide 10-Minute NSR or 30-Minute Reserve is accepted by the ISO in the real-time dispatch must make its Generators available for dispatch by the ISO.

3.3 Suppliers' Responsibilities

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

maximum amount by which the operator of that Control Area will change the DNI from that Control Area into the NYCA within ten (10) minutes of the initiation of a reserve pick-up by the ISO. Likewise, the amount of 30-Minute

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

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

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

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

4.0 Payments to Suppliers of Spinning Reserve

Locational Day-Ahead Availability Payments

Each Supplier which the ISO has scheduled Day-Ahead to provide Spinning Reserve shall be paid the Day-Ahead Availability price for Spinning Reserve in each hour, multiplied by the amount of Spinning Reserve that Supplier is scheduled to provide in each hour. The Day-Ahead Availability price for Spinning Reserve for each hour shall be equal to the highest Availability Bid of any resource scheduled in the Day-Ahead Market to meet any of the reserve requirements satisfied by reserves meeting the requirements applicable to Spinning Reserve at that location. Day-Ahead Availability prices will be calculated for Spinning Reserve located: (i) east of central-east, excluding Long Island; (ii) Long Island; and (iii) west of central east. When there are no binding locational reserve constraints between these three locations, the Day-Ahead Availability price for Spinning Reserve shall be the same in each of the three locations. When there are binding locational reserve constraints, separate Day-Ahead Availability prices may be paid to Spinning Reserve Suppliers in each of the three locations. The manner in which these separate payments are calculated shall be consistent with the examples set forth at pp. 1-4 of Attachment IV to the ISO's "Combined Compliance Filing and Report," submitted in Dockets ER00-1969-000, *et al.* on September 1, 2000 (as corrected on September 8, 2000), which is incorporated by reference herein. Whenever a Long Island locational reserve constraint is binding in the Day-Ahead Market, the amount paid to resources providing Spinning Reserve, per MW of Spinning Reserve scheduled applicable to the Long Island Spinning Reserve requirement, will not exceed the east of central-east, excluding Long Island Day-Ahead Spinning Reserve Availability price.

Locational Real-Time Availability Payments

Subject to the limitation in Section 4.3 below, each Supplier selected to provide more Spinning

Reserve in an hour than it was scheduled Day-Ahead to provide in that hour shall be paid the

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Availability price for Spinning Reserve at its location, multiplied by the amount of Spinning Reserve that Supplier provided that was in excess of the amount scheduled to be provided Day-Ahead, if any. The ISO shall calculate separate real-time Availability prices for Spinning Reserve for each hour. The real-time Availability price for Spinning Reserve for each hour shall be equal to the highest Availability Bid of any resource scheduled in the hour-ahead market to meet any of the reserve requirements applicable to Spinning Reserve at that location that is providing more Spinning Reserve in that hour than it had been scheduled to provide in that hour in the Day-Ahead schedule. Real-time Availability prices will be calculated for Spinning Reserve located: (i) east of central-east but not on Long Island; (ii) Long Island; and (iii) west of central-east. When there are no binding locational reserve constraints between these three locations, the real-time Availability price for Spinning Reserve shall be the same in each of the three locations. When there are binding locational reserve constraints, separate Availability prices may be paid to Spinning Reserve Suppliers in each of the three locations. The manner in which these separate payments are calculated shall be consistent with the examples set forth at pp. 1-4 of Attachment IV to the ISO's "Combined Compliance Filing and Report," submitted in Docket Nos. ER00-1969-000, *et al.* on September 1, 2000 (as corrected on September 8, 2000), which is incorporated by reference herein. Whenever a Long Island locational reserve constraint is binding in the hour-ahead market, the amount paid to resources providing Spinning Reserve, per MW of Spinning Reserve scheduled applicable to the Long Island Spinning Reserve requirement, will not exceed the east of central-east excluding Long Island real-time Spinning Reserve Availability price.

Acceptance of any Spinning Reserve Bid in the real-time Market shall not affect the availability price for Spinning Reserve that was determined Day-Ahead.

Locational Lost Opportunity Cost Payments

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

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

where:

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

LOC will be calculated on a locational basis. Suppliers with Class B Units scheduled for Spinning Reserve shall not receive LOC payments for Capacity that was not available to be scheduled to generate Energy.

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FERC Electric Tariff No. 2
Sched. 4

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Superseding Original Sheet No, 145A

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Other Payments

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

As provided in Article 4 of the Tariff, each Generator providing Spinning Reserves shall also be compensated by the ISO if its Bid Production Cost to provide the Energy and Ancillary Services the ISO has scheduled it to supply in the Day-Ahead Market, including start-up costs, minimum Load costs, and Availability Bids exceeds the revenues it receives from the sale of Energy at LBMP prices, and ancillary services, including real-time opportunity costs for ancillary services scheduled Day-Ahead. On any day that Long Island reserve constraints are binding, the NYISO reserves the right to allocate to Long Island customers the net incremental bid production cost guarantee charges for Long Island units that have been committed for either Energy or Operating Reserves, if it is determined that a Long Island Reserve constraint caused those units to be committed.

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

Locational Day-Ahead Availability Payments

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

Bid of any resource scheduled in the Day-Ahead Market to meet any of the reserve

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requirements satisfied by reserves meeting the requirements applicable to 10-Minute NSR at that location. Day-Ahead Availability prices will be calculated for 10-Minute NSR located: (i) east of central-east excluding Long Island; (ii) Long Island; and (iii) west of central-east. When there are no binding locational reserve constraints between these three locations, the Day-Ahead Availability price for 10-Minute NSR shall be the same in each of the three locations. When there are binding locational reserve constraints, separate Day-Ahead Availability prices may be paid to 10-Minute NSR Suppliers in each of the three locations. The manner in which these separate payments are calculated shall be consistent with the examples set forth at pp. 1-4 of Attachment IV to the ISO's "Combined Compliance Filing and Report," submitted in Docket Nos. ER00-1969-000, *et al.* on September 1, 2000 (as corrected on September 8, 2000), which is incorporated by reference herein. Whenever the Long Island locational ten minute total or 30 minute total reserve constraints are binding in the Day-Ahead Market, the amount paid to 10-Minute NSR Suppliers, per MW of 10-Minute NSR scheduled applicable to the Long Island ten minute total reserve requirement, will not exceed the east of central-east excluding Long Island Day-Ahead 10-Minute NSR Availability price.

Locational Real-Time Availability Payments

Each Supplier that provides more 10-Minute NSR than it was scheduled Day-Ahead to provide in that hour shall be paid the real-time Availability price for 10-Minute NSR at its location, multiplied by the amount of 10-Minute NSR that Supplier provided that was in excess of the amount scheduled to be

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provided Day-Ahead, if any. The ISO shall calculate separate real-time Availability prices for 10-Minute NSR for each hour. The real-time Availability price for 10-Minute NSR for each hour shall be equal to the highest Availability Bid of any resource scheduled in the real-time Market to meet any of the reserve requirement satisfied by reserves requirements applicable to 10-Minute NSR at that location that is providing more 10-Minute NSR in that hour than it had been scheduled to provide in that hour in the Day-Ahead schedule. Real-time Availability prices will be calculated for 10-Minute NSR located: (i) east of central-east excluding Long Island; (ii) Long Island; and (iii) west of central-east. When there are no binding locational reserve constraints between these three locations, the real-time Availability price for Spinning Reserve shall be the same in each of the three locations. When there are binding locational reserve constraints, separate real-time Availability prices may be paid to 10-Minute NSR Suppliers in each of the three locations. The manner in which these separate payments are calculated shall be consistent with the examples set forth at pp. 1-4 of Attachment IV to the ISO's "Combined Compliance Filing and Report," submitted in Docket Nos. ER00-1969-000, *et al.* on September 1, 2000 (as corrected on September 8, 2000), which is incorporated by reference herein. Whenever the Long Island locational ten minute total or 30 minute total reserve constraints are binding in the hour-ahead market, the amount paid to 10-Minute NSR Suppliers, per MW of 10-Minute NSR scheduled applicable to the Long Island ten minute total reserve requirement, will not exceed the east of central-east excluding Long Island real-time 10-Minute NSR Availability price.

Acceptance of any Supplier's Bid to supply 10-Minute NSR in the real-time Market shall not affect the Availability price for 10-Minute NSR that was determined Day-Ahead.

Locational Lost Opportunity Cost Payments

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

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

where:

- I = the interval duration;
- B_i = Energy Bid by Generator i at the level at which it is dispatched. For units scheduled to provide 10-Minute NSR Day-Ahead and hour-ahead, the Bid is the higher of the Day-Ahead or real-time Bid. For unites scheduled only hour-ahead, it is the real-time Energy Bid. If Bids less than zero are submitted, B_i shall be equal to zero.
- P_i = For the interval and for unites scheduled to provide reserve both Day-Ahead and hour-ahead, this shall be the Day-Ahead LBMP at Generator's location unless the resultant LOC is less than or equal to zero, in which case it shall be the Real-Time LBMP at the Generator location. For the interval and for units scheduled to provide reserve hour-ahead, this shall be Real-Time LBMP at Generator's location.

Other Payments

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

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

4.2 Payments to Suppliers of 30-Minute Reserve

Locational Day-Ahead Availability Payments

Each Supplier scheduled Day-Ahead to provide 30-Minute Reserve shall be paid the Day-Ahead Availability price for 30-Minute Reserve at its location in each hour, multiplied by the amount of 30-Minute Reserve that the Supplier is scheduled to provide in each hour. The Day-Ahead Availability price for 30-Minute Reserve for each hour shall be equal to the highest Availability Bid of any resource scheduled in the Day-Ahead Market to meet any of the reserve requirements satisfied by reserves meeting the requirements applicable to 30-Minute Reserve at that location. Day-Ahead Availability prices will be calculated for 30-Minute Reserves located: (i) east of central-east excluding Long Island; (ii) Long Island; and (iii) west of central-east. When there are no binding locational reserve constraints between these three locations, the Day-Ahead Availability price for 30-Minute Reserve shall be the same in each of the three locations. When there are binding locational reserve constraints, separate Day-Ahead Availability prices may be paid to 30-Minute Reserve Suppliers in each of the three locations. The manner in which these separate payments are calculated shall be consistent with the examples set forth at pp. 1-4 of Attachment IV of the ISO's "Combined Compliance Filing and Report," submitted in Docket Nos. ER00-1969-000, *et al.*, on September 1, 2000 (as corrected on September 8, 2000), which is incorporated by reference herein. Whenever the Long Island locational 30 minute total reserve

constraint is binding in the Day-Ahead Market, the

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amount paid to resources providing 30-Minute Reserve, per MW of 30-Minute Reserve scheduled applicable to the Long Island 30 minute total reserve requirement, will not exceed the east of central east excluding Long Island Day-Ahead 30-Minute Reserve Availability price.

Locational Real-Time Availability Payments

Each Supplier selected to provide more 30-Minute Reserve than it was scheduled Day-Ahead to provide in each hour shall be paid the real-time Availability price for 30-Minute Reserve at its location, multiplied by the amount of 30-Minute Reserve that the Supplier provided that was in excess of the amount scheduled to be provided Day-Ahead, if any. The ISO shall calculate separate real-time Availability prices for 30-Minute Reserve for each hour. The real-time Availability price for 30-Minute Reserve for each hour shall be equal to the highest Availability Bid of any resource scheduled in the Real-Time Market to meet any of the reserve requirement satisfied by reserves meeting the requirements applicable to 30-Minute reserves at that location that is providing more 30-Minute Reserve in that hour than it had been scheduled to provide in that hour in the Day-Ahead schedule. Real-time Availability prices will be calculated for 30-Minute Reserves located: (i) east of central-east excluding Long Island; (ii) Long Island; and (iii) west of central-east. When there are no binding locational reserve constraints between these three locations, the real-time Availability price for 30-Minute Reserve shall be the same in each of the three locations. When there are binding locational reserve constraints, separate real-time Availability prices may be paid to 30-Minute Reserve Suppliers in each of the three locations. The manner in which these separate payments are calculated shall be consistent with the examples set forth at pp. 1-4 of Attachment IV to the ISO's "Combined Compliance Filing and Report," submitted in Docket Nos. ER00-1969-000, *et al.* on September 1, 2000 (as corrected on September 8, 2000), which is

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incorporated by reference herein. Whenever the

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Long Island locational 30 minute total reserve constraint is binding in the Day-Ahead Market, the amount paid to resources providing 30-Minute Reserve, per MW of 30-Minute Reserve scheduled applicable to the Long Island 30 minute total reserve requirement, will not exceed the east of central-east excluding Long Island Day-Ahead 30-Minute Reserve Availability price.

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

Other Payments

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

4.3 Exceptions

Notwithstanding anything to the contrary in this Rate Schedule, no payments shall be made to any Supplier providing Operating Reserves for reserves provided by that Supplier in excess of the amount of Operating Reserves scheduled by the ISO either Day-Ahead or

in any subsequent schedule. The market clearing price paid to Suppliers of any category of Operating Reserve shall not be determined by any Bid to supply Operating Reserve that has not been accepted by the ISO.

5.0 Failure to Provide Operating Reserves

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

If a Supplier scheduled Day-Ahead to provide Operating Reserves trips off-line and consequently is unable to provide Spinning Reserve, or if the amount of Operating Reserves a Supplier is scheduled to provide is decreased due to a reduction in that Supplier's Capacity, it shall be charged the Real-Time Availability price at its location (or the Day-Ahead Availability price, if there is no Real-Time Availability price) in each hour for the relevant category of Operating Reserves applied to the reduction in the amount of Operating Reserves it was scheduled Day-Ahead to provide at that location.

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

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

during any activation of that Supplier during that 24-hour billing period by the applicable Availability payments and Lost Opportunity Cost payments, if applicable, that the Supplier would otherwise have received.

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

6.0 Self-Supply

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

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

SCHEDULE 5

OPERATING RESERVE SERVICE

The ISO must offer this service when the Transmission Service is used to serve Load within the NYCA. The Transmission Customer must either purchase this service from the ISO or make alternative comparable arrangements to satisfy its Operating Reserve Service obligation. The amount of, and charges for, Operating Reserve Service are set forth below. The ISO shall establish the following Operating Reserves in accordance with the ISO Procedures and the Reliability Rules: (1) Spinning Reserve (10-Minute Synchronized Reserve); (ii) 10-Minute Non-Synchronized Reserve; and (iii) 30-Minute Reserve. The ISO shall maintain Operating Reserves in accordance with the ISO Procedures and the Reliability Rules. The ISO shall monitor the level of Operating Reserves utilizing the security monitoring program. Transmission Customers, Transmission Owners and Suppliers shall supply all data required for the proper operation of the security monitoring program.

The NYSRC shall establish the criteria for determining the required levels of Operating Reserves. The NYSRC shall be responsible to evaluate the adequacy of the criteria for determining the required level of Operating Reserves and shall modify such criteria from time to time as required. Operating Reserves are classified as follows:

- (1) Spinning Reserve: Operating Reserves provided by generation facilities and Interruptible

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Load Resources located within the NYCA that are already synchronized to the NYS Power System and can respond to instructions to change output level within ten (10) minutes;

- (2) 10-Minute Non-Synchronized Reserve (“10_Minute NSR”): Operating Reserves provided by generation facilities that can be started, synchronized and loaded within ten (10) minutes;

and

- (3) 30-Minute Reserve: Operating Reserves provided by generation facilities and Interruptible Load Resources that can respond to instructions to change output level within thirty (30) minutes.

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The ISO shall satisfy at least fifty (50) percent of the applicable 10-Minute Reserve requirements with Spinning Reserve. If the ISO satisfies all of the 10-Minute Reserve requirement through Spinning Reserve, it does not have to maintain 10-Minute NSR. The ISO shall establish additional categories of Operating Reserves if necessary to ensure reliability.

1.0 General Requirements

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

2.0 Operating Reserves Charges

Each Transmission Customer engaging in an Export and each LSE shall pay a monthly Operating Reserves charge equal to the sum of the hourly charges for the month. The ISO shall calculate, and the LSE or Transmission Customer shall pay, the hourly charge equal to the product of (A) cost to the ISO of providing all Operating Reserves less any revenues from penalties collected during each hour and (B) the ratio of (i) the LSE's Load or the Transmission Customer's scheduled Export to (ii) the sum of all Load in the NYCA and all scheduled Exports during that hour. The cost to the ISO of providing Operating Reserves are described in Rate Schedule 4 of the ISO Services Tariff.

3.0 Self-Supply

Transmission Customers, including LSEs, may provide for Self-Supply of Operating Reserve by placing generation facilities supplying any one of the Operating Reserves under ISO

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Operational Control. The generation facilities must meet ISO rules for acceptability. The amount that any such customer will be charged for Operating Reserves Services will be reduced by the market value of the services provided by the specified generation facilities as determined in the ISO Services Tariff. In addition, Transmission Customers, including LSEs, may enter into Day-Ahead Bilateral financial transactions, *e.g.*, contracts-for-differences, in order to hedge against price volatility in the Operating Reserves markets.

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