NEW YORK INDEPENDENT SYSTEM OPERATOR

MANUAL 6

Load Forecasting Manual

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Revision History

Version	Date	Revisions
4.1	Mm/dd/yyyy	
4.0	04/30/2010	**Global** ➢ Completely revised content. ➢ Updated tariff citations to reflect section renumbering secondary to e-Tariff implementation. ➢ Reformatted per new template to standardize presentation. ➢ Implemented minor stylistic changes. **Revision History Table** ➢ Changed column headings as follows: • "Revision" changed to "Version." • "Changes" changed to "Revisions."
3.0	08/09/2006	**Complete rewrite of manual**
2.0	05/14/2001	**Unavailable**
1.0	09/23/1999	**Initial Release**

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1. OVERVIEW

The ISO's Business Issues Committee (BIC) is responsible for the establishment of procedures related to the efficient and non-discriminatory operation of electricity markets centrally coordinated by the ISO, including procedures related to bidding and settlements and the calculation of market prices. (BIC By-Laws, 9.01.1.)

The Load Forecasting Task Force (LFTF) has been designated by the Installed Capacity Working Group of the BIC to prepare and present load forecasts used in the Installed Capacity markets for the New York Control Area (NYCA) and for those Transmission Districts ~~(TD)~~ with a Locational Minimum Installed Capacity Requirement. The LFTF's methods and procedures for preparing load forecasts are described in this *Load Forecasting Manual*. The LFTF does not prepare the Installed Reserve Margin~~,~~ (IRM), the Equivalent Demand Forced Outage Rate, or the percentages of the Locational Minimum Installed Capacity Requirements.

1.1 Purpose and Scope

This manual has two main purposes.

The first purpose is to set forth the data reporting, weather-normalization methodology, and load forecasting methodology requirements that are prescribed in the *NYISO Market Administration and Control Area Services Tariff* (*Services Tariff*) Sections 5.10 and 5.11 and used in the calculation of the NYCA Installed Capacity ("ICAP") forecast ~~(ICAP).~~ The load forecasts used in the calculation of the ISO's Installed Capacity requirements will be referred to herein as *ICAP Market Load Forecasts*.

The second purpose is to set forth the data submissions required by the ISO to prepare the ICAP Market Load Forecasts and its filings to NPCC, NERC, FERC, and other reliability and regulatory bodies.

1.2 ICAP Forecast for the New York Control Area and ICAP Forecast for Localities

Prior to each Capability Year, the ISO determines the forecast peak load for the NYCA (as referred to in *NYISO Services Tariff* Section 5.11.1, "NYCA peak Load") and for each Locality. The NYCA forecasted peak load for each Capability Year is based on the highest Adjusted Actual Load for the NYCA in the immediately preceding Capability Year. The NYCA Adjusted Actual Load is calculated by adjusting the coincident peak for the entire Control Area. The forecasted peak load for each Locality is based on the highest Adjusted Actual Load in each Locality, calculated using the Locality's noncoincident peak load. That is, each Locality's actual peak load may be noncoincident with the NYCA actual peak load.

Adjusted Actual Load is defined in *NYISO Services Tariff* Section 2.1. That definition sets forth adjustments to Actual Load.

When computing the Adjusted Actual Load for the NYCA or a Locality, the load reductions resulting from dispatchable load management programs of Load Serving Entities (LSEs), Curtailment Service Providers (CSPs), or Responsible Interface Providers (RIPs)

that are not otherwise accounted for by the Transmission Owners (TOs) and Municipal Electric Systems [also referred to in the *NYISO Services Tariff* as Municipal Electric Utilities (MES)] through the components of their respective Adjusted Actual Load computations are also included.

The ICAP Market Load Forecast for the NYCA is computed by 1) taking ~~as~~ the product of (a) the Adjusted Actual Load ~~Actual Adjusted Load~~ of each Transmission District and MES that is coincident with the NYCA peak and (b) one plus the Regional Load Growth Factor (1 + RLGF) applicable to each Transmission District and MES, and 2) summing these ~~. The~~ individual Transmission District and MES peak forecasts~~. are added to obtain the ICAP Market Load Forecast for the NYCA.~~

The ICAP Market Load Forecast for each Locality is similarly obtained by 1) taking the product of (a) the ~~multiplying the~~ noncoincident Adjusted Actual Load ~~Actual Adjusted Load~~ of each Transmission District and MES in the Locality by b) one plus the Regional Load Growth Factor (1 + RLGF) applicable to each Transmission District and MES in the Locality, and 2) summing these individual Transmission District and MES Locality peak forecasts.~~the(1 + RLGF) specific to its Transmission District~~.

2. DATA, WEATHER-NORMALIZATION, AND LOAD FORECASTING METHODOLOGY SUBMISSION REQUIREMENTS FOR THE NYCA ICAP MARKET LOAD FORECAST

This section describes the following:

1. Notification procedures to be followed by the ISO
2. Data submission requirements for TOs and MESs
3. The procedures the ISO follows for
   - Evaluating the TO and MES submitted actual and weather-normalized loads at the time of the NYCA peak hour (and Locality peaks)
   - Calculating NYCA Weather-Normalized Load + Losses (WNL+L) at the NYCA peak hour for the Capability Year during which the calculation is being performed
   - Accounting for the impacts of Behind-the-Meter Net Generation (BTM:NG) Resources
   - Calculating a Weather Normalization Factor for each individual BTM:NG Resource
   - Calculating the Transmission District Weather Normalization Factor (TDWNF)
   - Evaluating TO and MES Regional Load Growth Factors (RLGFs)
   - Calculating the forecasted NYCA ICAP peak and each TO, MES and ~~MES~~BTM:NG Resource load at the same one hour on the same date as the forecasted NYCA peak.
   - Calculating the Locality peak forecast of all TO~~s~~, MES and BTM:NG Resource loads located in each of the Localities at their peak dates and times.

2.1 Notification Procedures to be Followed by the ISO

The *Capability Year Peak* for purposes of this section of the *Load Forecasting Manual* is defined to be the highest hourly load that occurs ~~from May 1 to August 31, inclusive.~~in a Summer Capability Period and the immediately following Winter Capability Period. Typically, the NYCA peak occurs before September 1 and this information and data will be posted by September 1 consistent with the Schedule below. In the event that the highest hourly load for the NYCA or a Locality peak occurs after September 1, an updated Schedule will be provided to the members of the Load Forecasting Taskforce (LFTF).

Information and data provided to members of the LFTF will include:

1. ***ICAP Market Load Forecast Schedule:*** ~~The~~Each year, the ISO will release a ~~schedule (~~Schedule~~)~~ by September 1~~ of every year~~ that will list the dates by which data and analyses are to be completed and submitted to the ISO.
2. ***Capability Year Peak and Date and Hour of Occurrence:*** The ISO will provide these data points to the TOs and MESs by September 1.
3. ***EDRP, DADRP, DSASP, and SCR Performance during the NYCA Peak Hour:*** The ISO will provide these data points by October ~~15.~~ 30.
4. ***BTM:NG Resource Load Data***: The ISO will provide the Peak Proxy Load~~se~~ data points by ~~in~~ October 30~~November.~~
4.5. ***Evaluation of TO and MES Weather-Normalized Loads:*** ~~In~~ The ISO will provide these data points in November~~, in accordance with the Schedule~~.
5.6. ***Evaluation of TO and MES RLGFs:*** ~~In~~ The ISO will provide these data points in December~~, in accordance with the Schedule~~.
6.7. ***Preliminary ICAP Market Load Forecast:*** ~~In~~ The ISO will provide these data points in December~~, as determined in the Schedule~~.
7.8. ***Final ICAP Market Load Forecast:*** ~~In~~The ISO will provide these data points, including ~~additional data~~the ACHL for BTM:NG Resources- in December~~, as determined in the Schedule~~.

2.2 Data Submission Requirements for TOs, MESs, LSEs, CSPs, RIPs, and ~~RIPs~~BTM:NG Resources

TOs and MESs shall submit to the ISO:

1. Hourly loads for each quarter-year (first quarter is January – March, etc.) within 90 days after the quarter's end;
2. Actual load during the hour and on the date of the NYCA peak, and including a statement of whether or not transmission losses are included~~.~~;
3. The weather-normalized load during the hour and on the date of the NYCA peak, in accordance with Section 2.2.3;
4. The previous five years' values for Subsections 2.2.2 and 2.2.3 of this manual;
5. The MW impact of Emergency Operating Procedures (EOPs) and load modifiers operating during the hour and on the date of the NYCA peak;
6. The actual and weather-normalized Locality noncoincident peak load ~~For~~ for each TO~~s~~ and MES with Locational Minimum Unforced Capacity Requirements, ~~the actual and weather-normalized Locality noncoincident peak load~~;
7. Regional Load Growth Factors.

LSEs, CSPs, and RIP~~s~~S shall submit to the ISO and to the TO providing transmission service to the respective load, the load reduction resulting from the LSE's, CSP's, or RIP's own dispatchable load management programs that were in effect during the hour and on the date of the NYCA peak and during the hour and on the date of the Locality peak.

The due dates for items required by Subsections 2.2.2 through 02.2.79 of this manual will be set forth in the Schedule.

BTM:NG Resources are subject to particular eligibility rules and qualifications, and special reporting requirements, as described in ICAP Manual Section 4.15. BTM:NG Resources whose Generators are expected to be unavailable for the next capability year, or that do not enter the market for the first time (i.e., "new" resources) by August 1 of the current Capability Year, -may be excluded from the forecasts described in this manual.

2.2.1 Hourly Loads

TO and MES hourly loads are necessary for verification of the load at the time of the NYCA peak and for other purposes as described in Section 2.3 of this manual. Data may be submitted in any electronic format acceptable to the ISO.

2.2.2 Actual Load at the Time of the NYCA Peak

TOs and MESs shall provide their load in MW during the hour and on the date of the NYCA peak for the current Capability Year together with a statement stating whether this load includes transmission losses.

2.2.3 Weather-Normalized Load at the Time of the NYCA Peak and Supporting Material

TOs and MESs shall provide the weather-normalized load corresponding to their actual load (provided pursuant to Section 2.2.2 of this manual). TOs and MESs may calculate their weather-normalized load using their own procedures. However, the design criteria employed by each TO and MES shall be such that it at ensures, at a maximum, a 0.50 probability of occurrence on an annual basis. The design criterion is sometimes referred to by specifying the number of years in which it is expected that the design criterion will be exceeded. A "1-in-2" criterion means that the actual peak day weather conditions are expected to exceed design once in every two years. A "1-in-3" criterion means that the actual peak day weather conditions are expected to exceed design once in every three years. The probability of occurrence for a "1-in-2" criterion is 50% while for a "1-in-3" criterion it is 33 1/3%. The probabilities of these criteria are 0.50 or less.

TOs and MESs shall provide the following supporting material:

1. A written description of the method used to derive the weather-normalized load from the actual load.
2. If a statistical model is used, the model, its statistics, and the data from which weather-normalized load was derived.
3. A description of and supporting data for the design conditions used in calculating the weather-normalized load.

2.2.4 Actual and Weather-Normalized Load at the Time of the NYCA Peak for the Five Preceding Years

TOs and MESs shall provide historical values of the actual and weather-normalized loads for each of the five Capability Years preceding each ICAP forecast. This data is used by the ISO to evaluate Regional Load Growth Factors provided by TOs and MESs. If requested, the TOs and MESs shall provide supporting documentation. Results submitted by a TO or MES in respect of an ICAP forecast for a previous Capability Year need not be resubmitted unless the TO or MES has revised actual or weather-normalized data or resulting computation of its actual or weather-normalized load.

2.2.5 MW Impact of EOPs and Load Modifiers Operating at, and MW Reductions from Programs Achieved During the Time of the NYCA Peak

TOs and MESs shall provide the MW reduction achieved by Emergency Operating Procedures (EOPs) and Load modifiers during the hour and on the date of the NYCA peak. TOs and MESs shall provide supporting documentation if requested by the ISO.

LSEs, CSPs, and RIPs that activate resources in their own dispatchable load management programs during the hour and on the date of either the NYCA peak or a Locality peak shall report to the ISO and the TO providing transmission service to the respective load, the MW reduction achieved by these resources at the time of each peak. LSEs, CSPs, and RIPS shall provide supporting documentation to the ISO and the respective TO if requested.

TOs, MESs, LSEs, CSPs, and RIPs shall compare the MW reduction from Demand Side Resources and their other respective dispatchable load management programs with those of the ISO's SCR, DADRP, DSASP, and EDRP programs to ensure that impacts are properly accounted for.

The ISO shall verify data submitted by LSEs, CSPs, and RIPs on MW reductions achieved from programs that the ISO uses in computing the NYCA Adjusted Actual Load. Each TO and MES shall verify the data submitted by LSEs, CSPs, and RIPs on MW reductions achieved from programs that the TO or MES uses in computing the Transmission District Adjusted Actual Load. Each TO and MES shall submit such verified data to the ISO and any revisions or updates to the data. TOs and MESs shall provide supporting documentation if requested by the ISO.

2.2.6 Behind-the-Meter Net Generation Resources

A BTM:NG Resource, as defined in the NYISO's Services Tariff, is 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. BTM:NG Resources must also have a minimum Average Coincident Host Load ("ACHL") of 1 MW.

If the Average Coincident Host Load of the BTM:NG Resource is less than 1 MW, the Resource is not eligible to participate in the NYISO's markets as a BTM:NG Resource until its ACHL reaches at least 1 MW. The facility's net injection of power into the NYCA must be at least 1 MW to qualify as a BTM:NG Resource.

BTM:NG Resources will provide actual hourly loads to the NYISO in accordance with the procedures defined in ICAP Manual Section 4.15. The NYISO will provide the following load data for BTM:NG Resources in accordance with Section 2.1 of this Manual:

1. The Peak Proxy Load, which is the average of the Resource's actual Host Load during its top 20 Load hours that occur during the highest 40 one-hour NYCA peak loads for the current Capability Year.
2. The ACHL that is applicable for the current Capability Year for each BTM:NG Resource, which is the Peak Proxy Load Value multiplied by ~~the weather normalization factor (~~1+ WNF calculated for each BTM:NG Resource~~)~~ and ~~the regional load growth factor (~~1+RLGF~~)~~, pursuant to Services Tariff section 5.12.6.1.2.1.
3. The actual BTM:NG Resource Load, aggregated by Transmission District, at the date and hour of the NYCA peak
4. The actual BTM:NG Resource Load, aggregated by Transmission District, at the date and hour of each Locality peak

~~2.2.6~~2.2.7 Actual and Weather-Normalized Locality Peaks

TOs and MESs may have Locality peaks that occur at a different time than the NYCA peak hour. If that is the case, they shall also provide the data required by Subsections 2.2.2 through 2.2.5 of this manual for the hour of their Locality peak.

2.2.8 Weather Normalization Factor

The NYISO will calculate a Weather Normalization Factor (WNF) for each BTM:NG Resource and for each Transmission District (TDWNF) ~~and report this ese factors~~. If a WNF for a BTM:NG Resource cannot be calculated by the NYISO the applicable TDWNF will be used in the calculation of ACHL described in section 2.2.6 above. The TDWNF will be calculated ~~-~~after determining the Adjusted Actual Load in a Transmission District. The TDWNF is calculated by subtracting Actual Load Less Losses (LLL) from the

Adjusted Actual Load and dividing it by the Adjusted Actual Load. The NYISO will report this as (1 + TDWNF).

The (1 + WNF) for each BTM:NG Resource is determined as follows:

1. Find the average of the top twenty load hours, selected from the top forty load hours of the NYCA: MW_Avg_Actual = Sum(top 20 loads) / 20.
2. Calculate the difference between the temperature or heat index in the Transmission District at the time of the NYCA coincident peak and the design temperature for the Transmission District: Delta_T = (T_Design – T_Actual)
3. For each of the top twenty load hours, select the corresponding temperature or heat index for the ~~t~~Transmission ~~d~~District. Then find the slope of the line corresponding to these twenty order pairs of load and temperature. This slope is referred to as Beta, in units of MW per degree. Beta must be greater than zero. If Beta is negative, then assign Beta a value of 0.
4. Calculate the weather adjustment Delta_MW for the BTM:NG Resource as the product of Delta_T and Beta: Delta_MW = Beta * Delta_T
5. The weather-adjusted load for the BTM:NG Resource is the sum of the MW_Avg load and the weather adjustment: MW_adj = MW_Avg_Actual + Delta_MW
6. Bulk power system losses for the BTM:NG loads are accounted for by multiplying the weather adjusted load by the factor (1 + TDWNF):

   MW_adj,TD = MW_adj * (1 + TDWNF)
7. The (1 + WNF) for each BTM:NG resource is the ratio of the MW_Adj,TD load from step 6 and the MW_Avg Actual load from step 1:

   (1 + WNF) = MW_Adj,TD / MW_Avg_Actual

2.2.9 Regional Load Growth Factors ("RLGFs")

~~Actual Load.The WNF is the percent change of the Adjusted Actual Load with respect to the Actual Load Less Losses (LLL). The NYISO will report this as (1 + TDWNF).~~

~~Regional Load Growth Factors (("RLGFs)")~~

Each TO and MES shall provide RLGFs to the ISO. An RLGF is the ~~ratio~~ reflects the difference ~~ofpercent change~~ in its projected load during the hour and on the date of the NYCA peak for the next Capability Year to the ~~weather-normalized actual load~~ Adjusted Actual Load during the hour and on the date of the NYCA peak in the current Capability Year. ~~RLGFs~~RLGF shall be provided on the date set forth in the Schedule. The forecast for

the next Capability Year is obtained by multiplying the Adjusted Actual Load in a Transmission District by (1 + RLGF) for that Transmission District.

2.3 Procedures for Determining the ISO ICAP Market Load Forecast

This section describes procedures the ISO will follow to produce the ICAP Market Load Forecast for the each Capability Year. The following analyses will be performed.

1. Reconciliation of Transmission District loads at NYCA Peak
2. Calculation of TO and MES Load Less Losses (LLL)
3. Accounting for BTM:NG Resources
~~3.~~4. Deduction of Station Power
~~4.~~5. Evaluation of TO and MES Weather-normalized Load and Losses
~~5.~~6. Allocation of Weather-normalized Losses to TOs and MESs
~~6.~~7. Evaluation of TO and MES RLGFs
~~7.~~8. Forecast of TO and MES loads at time of predicted NYCA Peak
~~8.~~9. Forecast of Locality peaks

2.3.1 Reconciliation of Transmission District Load at Time of NYCA Peak

TOs and MESs submit their above-described load data for the time and date of the NYCA peak in accordance with Subsection 2.2.2 of this manual. The ISO will calculate Transmission District ~~(TD)~~ loads by adding TO and appropriate MES loads. The ISO will compare the Transmission District peak loads reported by the TOs and MESs to Transmission District billing loads with the ISO Decision Support System (DSS). The ISO will make adjustments necessary to account consistently for losses, Load modifiers, EOPs, SCRs, DADRP, EDRP, and DSASP reductions from dispatchable demand resource programs of LSEs, CSPs, and RIPs not otherwise accounted for.

The ISO will also add back to the Transmission District loads the following data for Demand Side Resources participating in the NYISO's EDRP and SCR program:

Load reductions resulting from activation of the SCR Program and EDRP during the Transmission District and NYCA peaks;

The output of any Local Generators that participate in NYISO's SCR Program operating during the date and time of the Transmission District and NYCA peaks when the NYISO has not activated its Demand Response programs; and

Load reductions of EDRP resources and SCRs resulting from activation of Transmission Owner-administered retail demand response programs occurring during the Transmission District and NYCA peaks. Load reductions achieved by resources participating only in the Transmission Owner-administered demand response programs will not be added back.

The ISO will perform a reconciliation of Transmission District peak load prior to weather normalization as follows. If the Transmission District loads calculated from data submitted to the ISO does not match the ISO's calculations of Transmission District load, the ISO will discuss and try to resolve the difference with the TO, MES, LSEs, CSPs, or RIPS, as appropriate. If the unresolved difference in Transmission District load is less than 1%, the ISO will accept the Transmission District peak load reported by the TO or MES. If the unresolved difference exceeds 1%, the ISO will determine the appropriate Transmission District load and submit it for comment to the Load Forecasting Task Force. In its discretion, the ISO may also submit it for comment to the ICAP Working Group.

2.3.2 Calculation of TO and MES Load Less Losses (LLL)

Losses will be obtained from the ISO DSS for each Transmission District. In cases where TOs reported their peak load inclusive of losses, the LLL will be calculated by deducting the ISO DSS losses from the reported peak load. ~~In cases where the TO reported peak load does not include losses, no loss deduction is necessary.~~ MES loads are reported net of losses.

2.3.3 Accounting for BTM:NG Resources

The load of a BTMNG resource that obtains power from an LSE or TO during the NYCA peak will be deducted from the actual load of the LSE or TO, even if the Resource does not offer Net-ICAP into the market (e.g., when BTM:NG Resources offer only Energy to the wholesale markets).

However, if by August 1st of the current Capability Year a BTM:NG Resource elects, pursuant to ISO Procedures, not to participate as a BTM:NG Resource in the upcoming Capability Year, the ACHL of a BTM:NG Resource for the current Capability Year will be added to the actual load and Adjusted Actual Load of the LSE or TO in which the BTM:NG Resource is located. This adjustment shall be made after accounting for any BTM:NG Resource load served by a TO or LSE.

~~2.3.3~~2.3.4 Deduction of Station Power

Station Power delivered that is not being self-supplied pursuant to Section 4.~~7~~2.3 of the ~~*NYISO Services Tariff*~~ICAP Manual shall be deducted by TOs and MESs in calculating LLL. The Generator to which the deduction pertains and the amount of the deduction shall be reported to the ISO.

~~2.3.4~~2.3.5 Evaluation of TO and MES Weather-Normalized Load and Losses

The ISO shall also adjust Transmission District actual peak loads for the effects of weather and will produce its own estimate of the weather-normalized load for each TO ~~and MES~~. These estimates will be produced using models and design criteria the ISO develops. The ISO will compare its own estimates with those submitted by the TOs ~~and MESs~~ according to Subsection 2.2.3 of this manual using two comparisons:

- If the adjustments to the actual load calculated by the ISO and a TO ~~or MES~~ pursuant to Section 2.3 of this manual differ by 25% or less, the ISO will accept the submitted estimate;

Or

- If the weather-normalized adjusted load calculated by the ISO differs from that calculated by the TO or MES by 1% or less, the ISO will accept the submitted estimate.

If the differences between the ISO and TO or MES calculations of both the actual load and the weather normalized exceed the above thresholds, the ISO and TO or MES will investigate and attempt to reconcile it.

If it is not possible to reconcile the difference within a period of time that comports with the development of the respective peak load forecast, the ISO will use its own estimate of the weather-normalized load for that TO. The TO may dispute the ISO's decision to substitute its weather-normalized load for the TO's, pursuant to the Expedited Dispute Resolution Procedures specified in the *NYISO Services Tariff*, Section 5.16.

If an MES does not submit a weather-normalized load, the ISO will calculate one for it by applying the ratio of (a) the weather-normalized to actual load of the TO in whose Transmission District the MES is located to (b) the MES actual load.

Transmission District l~~L~~osses will be weather-normalized for each TO and ~~-~~ all other Load Serving Entities, Municipal Energy Systems and BTM:NG Resources in the Transmission District ~~MES~~ using the same proportion of weather-normalized load to actual load as was determined for the primary TO in that TD~~or MES load~~.

~~2.3.5~~2.3.6 Allocation of Weather-Normalized Losses to TOs and MESs

The total of all TO and MES weather-normalized loads will be calculated by the ISO. The sum of the calculation is the NYCA weather-normalized peak load less losses (W/N LLL). The total of all weather-normalized losses will be calculated by adding all TO weather-normalized losses.

Total weather-normalized losses will be allocated to each TO and MES according to the ratio of its W/N LLL to the NYCA W/N LLL. The result will be the weather-normalized load plus losses (W/N L+L) for each TO and MES.

The sum of all TO and MES W/N L+Ls will be the NYCA ~~weather-normalized peak load~~Adjusted Actual Load for the Capability Year.

Each TO and MES W/N L+L will be the basis upon which its RLGF will be applied by the ISO to calculate respective TO or MES forecasted load coincident with the NYCA peak in the next Capability Year.

~~2.3.6~~2.3.7 Evaluation of TO and MES Regional Load Growth Factors

The ISO will evaluate Capability Year RLGFs using the following criterion:

1. *Criterion 1: Index of Recent Historical Peak Load Growth* – RLGFs should be within a range of historical year-to-year growth rates of actual adjusted peak load (AAPL) experienced in the previous five Capability Years.
2. *Criterion 2: Index of the Ratio of Peak Load Growth to Economic Growth* – The ISO will clearly outline for all Market Participants (MPs) the economic parameters it will use in developing these relationships no less than fifteen calendar days before the date the TOs and MESs are required to submit RLGFs.
   a. The ratio of (i) the annual historic growth in the TO or MES load at the time of NYCA peak, reflected in the RLGFs for the respective historic period, to (ii) annual growth in economic indicators, as provided to the ISO by its economic forecasting consultant. The ISO shall calculate the ratio for each TO for the previous five Capability Years.
   b. The ratio of each predicted RLGF to the predicted growth in economic indicators, as provided to the ISO by its economic forecasting consultant, shall be calculated by the ISO for the current Capability Year.
   c. The ratios calculated in ~~2.a.~~(a) should be consistent with the ratios calculated in ~~2.b.~~(b), such that it is possible for an RLGF to satisfy both criteria. The selection of indicators and criteria for deciding consistency between ~~2.a~~(a) and ~~2.b~~(b) are to be determined by the LFTF.
3. *Criterion 3: Projections performed by ISO* – The ISO will develop independent projections of RLGFs and use them in evaluating the RLGFs submitted by the TOs and MESs pursuant to Subsection 0~~2.2.7~~9 of this manual. The ISO will post on the ISO website for all MPs the assumptions and methodologies used to develop its projected RLGFs for each Transmission District.

The ISO will develop a range for each of the three criteria above. The ranges for Criterion 1 and Criterion 2 shall be based upon the second highest and the second lowest of the five annual growth rates calculated for each Criterion. If the ISO determines that a TO or MES forecast is not within the established range for at least two of the three criteria above, the ISO and the TO or MES will attempt to reconcile and explain the difference. If the difference cannot be reconciled, the ISO will inform the TO or MES of that fact and that it intends to substitute its RLGF for the submitted one. The TO or MES may dispute the ISO's decision to substitute the ISO RLGF, pursuant to the Expedited Dispute Resolution Procedures specified in the *NYISO Services Tariff* Section 5.16.

The RLGF for a BTM:NG Resource will be that of the Transmission District in which it is located.

If, as a result of the deliberations between the ISO and TO required under Section 5.16.1 of the *NYISO Services Tariff*, the ISO decides to accept a TO forecast that does not fall within the range provided for at least two out of three above criteria, any MP may dispute that decision pursuant to the Expedited Dispute Resolution Procedures specified in the *NYISO Services Tariff,* Section 5.16 (available from the NYISO Web site at the following URL: http://www.nyiso.com/public/markets_operations/documents/tariffs/index.jsp).

The only RLGFs which may be disputed under the Expedited Dispute Resolution Procedures are those developed by the TO or MES and the ISO.

~~2.3.7~~2.3.8 Installed Capacity Market Forecast of TO, MES, and ~~MES~~BTM:NG Resource Load at Time of Predicted NYCA Peak

The ISO will calculate a forecast of each TO and MES load during the hour and on the date of the forecast NYCA peak for the next Capability Year as the product of (a) the W/N L+L for each TO and MES, as determined in Section 2.3.6~~2.3.5~~ of this manual, and (b) the RLGF determined for the respective TO or MES, calculated in Section 2.3.7~~2.3.6~~ of this manual.

The sum of the TO and MES peak forecast loads during the hour and on the date of the NYCA peak will be the NYCA Installed Capacity peak forecast for the Capability Year.

BTM:NG Resource Load is not considered in the calculation of the ICAP Market forecast because the Resource is required to satisfy all of its Host Load, and therefore contributes 0 MW to the Load at the time of the NYCA Peak. This exclusion of BTM:NG Resource Host Load from the ICAP Market forecast is different from the treatment of BTM:NG Resource Host Load for the purposes of determining the Installed Reserve Margin.

~~2.3.8~~2.3.9 Forecast of Locality Peaks

To determine LSE Locational Unforced Capacity Requirements, Locality peaks forecasts need to be determined. The ISO shall determine the forecast of the peaks for the Localities as follows:

1. Each TO and MES in a Locality will provide an actual and weather-normalized peak for its Load in the Locality.
2. The adjustments to actual load shall include Load reductions due to dispatchable load management programs and BTM:NG Resources, as follows:
    a. The ISO will add back to the Locality Peak load the following data for ~~A~~any SCRs, DADRP, EDRP, or DSASP resources:~~or other EOPs invoked by the ISO shall be included in any adjustments to the TO's or MES's actual peak Load within the Locality.~~
        i. Load reductions resulting from activation of the SCR Program and EDRP during the Locality peak;

ii. The output of any Local Generators that participate in NYISO ~~Demand Response~~SCR programs operating during the date and time of the Locality peak when the NYISO has not activated its Demand Response programs; and

iii. Load reductions of EDRP resources and SCRs resulting from activation of Transmission Owner-administered retail demand response programs occurring during the Locality peaks. Load reductions achieved by resources participating only in the Transmission Owner-administered demand response programs will not be added back.

~~a.~~b. The TO or MES shall adjust its actual Locality Peak for the verified load reductions of EOPs or dispatchable load management programs of any LSE or RIP in its Transmission District, if these impacts were submitted in accordance with Section 2.2.5 of this manual.

~~b.~~c. The TO or MES shall adjust its actual Locality peak for the load reductions of EOPs and dispatchable load management programs that it implemented.

d. The load of a BTM:NG Resource that obtains power from an LSE or TO during the Locality peak will be deducted from the actual load of the LSE or TO, even if they do not have Net-ICAP to offer in to the market (e.g., when BTM:NG Resources offer only Energy to the wholesale markets).

3. The TO or MES Losses in the Locality shall be weather-normalized, but should not be otherwise adjusted in relation to Losses elsewhere in the NYCA.

4. The TO shall determine its Adjusted Actual Peak Load (AAPL) within the Locality by accounting for the ~~affects~~effects of weather on Loads and Losses, and after adjusting for reductions of dispatchable load management programs as set forth in this Subsection 2.3.9~~2.3.8~~, item.2.

5. The ISO shall also adjust actual Locality peak loads for the effects of weather normalization and will produce its own estimate of the weather-normalized load for each TO and MES. These estimates will be produced using models and design criteria the ISO develops.

6. The ISO shall then review each TO's and MES's AAPL for the Locality. In the event of a difference that exceeds both one percent (1%) of the AAPL and twenty-five percent (25%) of the adjustment, the ISO and TO or MES will investigate and attempt to reconcile the difference. If it is not possible to reconcile the difference within a period of time that comports with the development of the respective peak load forecast, the ISO will use its own estimate of the AAPL for the Locality peak. The TO or MES may dispute the ISO's decision to use its AAPL, pursuant to the Expedited Dispute Resolution Procedures specified in the *NYISO Services Tariff*, Section 5.16.

7. The TO will use the RLGF for the Transmission District in which the Locality is located, as determined in Section 2.3.72.3.6.
8. The Locality Peak forecast shall be calculated as the product of the AAPL in the Locality and the applicable RLGF.

2.4 Load Forecasts for Installed Reserve Margin Study and for Locational Capacity Requirements Study

In addition to the ICAP Market Forecast described in Section 2.3 of this Load Forecasting Manual, the NYISO produces two load forecasts which include the ACHL and the Load and Generation attributes of each BTM:NG Resource. The first load forecast is prepared for use in the Installed Reserve Margin (IRM) Study conducted by the New York State Reliability Council. The second load forecast provides an update to the first, and is for use in the Locational Capacity Requirements (LCR) Study conducted by the NYISO. The load forecasts produced for those two Studies will include the ACHL of each BTM:NG Resource for the most recent Capability Year availablecurrent Capability Year. -Including the Load and Generation attributes for these Resources will ensure that their impact is accurately represented in the studies.