

NYISO Business Issues Committee

Agenda Item #8
September 9, 2003

Transmission Owners' Proposal for Revising the Procedures for Using Load Forecasts to Calculate Installed Capacity Requirements

- I. The ISO tariff will be revised so that the total installed capacity requirement for LSEs serving load in a given transmission district (TD) would be based on that TD's adjusted share of NYCA load in the hour in which load in the NYCA is highest (after adding back in any reduction in load associated with all demand reduction programs that are considered by the NYSRC when it calculates the installed reserve margin for the NYCA).
 - A. These demand reduction programs include Special Case Resources (SCRs), the Emergency Demand Response Program (EDRP) and voltage reduction, as the reduction in load associated with each of these programs can be monitored by the ISO, and hence can be added back to hourly load by the ISO. These demand reductions do not include certain demand reduction programs operated by individual TOs.
 - B. The tariff will continue to base locational installed capacity requirements on the hour in which load in that locality is the highest (after adding back in any reduction in load resulting from all demand reduction programs that are considered by the ISO when it calculates locational installed capacity requirements as a percentage of peak load, as well as any reduction in load associated with demand reduction programs initiated by a TO serving that locality).
 - C. This proposal focuses on the determination of total installed capacity requirements for each TD and locational installed capacity requirements for each locality, not the allocation of the costs of meeting those requirements among LSEs in each TD or locality. Additional modifications to either the tariff or ISO procedures will likely be necessary to address the determination of the responsibility of each LSE to pay for installed capacity to meet the total installed capacity requirement and any applicable locational installed capacity requirement.
- II. The ISO will collect peak load data from the TOs and from other Entities with Load Reporting Responsibilities (ELRRs). Elements of the methodology currently used to adjust actual loads within each TD for the purpose of developing installed capacity requirements will be modified to ensure consistency among the data reported to the ISO by the TOs and ELRRs.
 - A. The ISO will inform all TOs and ELRRs of the NYCA peak load hour to be used in the calculation of the total installed capacity requirement, as well as the locality peak load hour to be used in the calculation of each locational installed capacity

requirement. The locality peak load hours might or might not be the same as the NYCA peak load hour.

- B. Each TO will use its current procedures to measure load within its TD (and locality, if applicable), excluding areas served by ELRRs. Each TO will notify the ISO whether the load it is reporting for its TD (or locality, when applicable) includes transmission losses occurring within the portion of its TD that is not served by ELRRs. Each ELRR will notify the ISO if the load it is reporting includes transmission losses occurring within the area served by that ELRR.
 - C. Each TO will report weather-normalized loads to the ISO for the NYCA peak load hour for the portion of its TD not served by ELRRs. Each TO whose TD includes a locality will also report weather-normalized loads to the ISO for the locality peak load hour for the portion of its locality not served by ELRRs. Each ELRR will report to the ISO its load within each TD for the NYCA peak load hour and within each locality for each locality peak load hour, informing the ISO whether those loads have been weather-normalized.
 - 1. In all respects, TOs and ELRRs will be free to use their own procedures for weather normalization, with one exception: All weather normalizations by TOs or ELRRs will be performed using at least a 50th percentile projection (e.g., loads will be adjusted so that there no more than a 50% chance that actual load in a future year—assuming no load growth—would be higher, if all relevant variables except the weather are held constant).
 - D. TOs and ELRRs will not adjust the loads that they report to the ISO to add back in any reduction in load that results from the activation of SCRs, the EDRP or voltage reduction.
- III. The ISO will modify the load data for each TO and ELRR for the NYCA peak load hour, and will use these modified data to calculate the total installed capacity requirement for LSEs within each TD.
- A. The ISO will determine an adjusted actual peak load for each TD, which will be used for the purposes of calculating total installed capacity requirements, as follows:
 - 1. In cases in which an ELRR has reported a load that is not weather-normalized, the ISO will weather-normalize that ELRR's load within each TD by multiplying the load reported by that ELRR inside that TD by the ratio of (1) the weather-normalized load reported by the TO in the NYCA peak load hour serving that TD for the portion of that TD not served by ELRRs to (2) the actual load reported by the TO in the NYCA peak load hour for the portion of that TD not served by ELRRs.
 - 2. The ISO will then adjust the weather-normalized loads for each TO and ELRR to ensure that transmission losses are allocated to each TD in proportion to load in that TD.

- The ISO will determine the transmission losses occurring within the portion of each TD that is not served by ELRRs and within each area within a TD that is served by an ELRR, using a statewide load flow, for the NYCA peak load hour.
- It will then weather-normalize those transmission losses using a 50th percentile criterion, so that transmission losses in each of these areas reflect the median level of transmission losses that would have been expected to occur in that area on a peak day, holding constant all variables other than weather, and adjust for these transmission losses as follows:
 - In cases in which a TO indicated that the weather-normalized peak hour loads it reported for the portion of a TD not served by ELRRs included transmission losses, the ISO will deduct weather-normalized transmission losses in the portion of that TD not served by ELRRs from the weather-normalized load reported by that TO.
 - In cases in which an ELRR indicated that the peak hour loads it reported for the area it serves included transmission losses, the ISO will deduct weather-normalized transmission losses in the area served by that ELRR from the weather-normalized load for the area served by that ELRR.
 - In cases in which a TO or ELRR indicated that the peak hour loads it reported did not include transmission losses, no deduction is necessary.
 - The result will be the weather-normalized lossless peak load for each TO or ELRR.¹
- The ISO will then sum the weather-normalized lossless peak loads for the TO serving a TD and the weather-normalized lossless peak loads within that TD for all ELRRs serving load in that TD. The result will be the weather-normalized lossless peak load for that TD.
- The ISO will then add a share of the weather-normalized transmission losses occurring within the NYCA during the NYCA peak load hour,

¹ The load is “lossless” in that it does not include transmission losses. It will still include distribution losses. The ISO will need to coordinate with each TO or ELRR that indicated that the peak hour loads it reported did not include transmission losses to ensure that metering points used by the ISO and the TO or ELRR to define transmission and distribution losses are classified consistently. This will ensure that all losses occurring within each TD are classified either (1) as transmission losses—in which case they will be allocated among all TOs and ELRRs using the procedures described herein—or (2) as distribution losses, in which case they will be included in the load that is used to determine the installed capacity requirement for LSEs in that TD. In the event that there are inconsistencies between these metering points and these inconsistencies cannot readily be resolved, it will be necessary to develop procedures to account for these inconsistencies.

determined using the procedures described above, to the weather-normalized lossless peak load for each TD. Each TD's share of these transmission losses shall be proportional to that TD's weather-normalized lossless peak load.

3. The ISO will also add an adjustment to the load in each TD for the NYCA peak hour, which will reflect any reduction in load in that TD in that hour that resulted from the activation of demand reduction programs that are considered by the NYSRC when it calculates the installed reserve margin for the NYCA (e.g., SCRs, the EDRP program, voltage reduction).
- B. The adjusted actual peak load will be used, in combination with regional load growth factors provided by the TO for that TD and the installed reserve margin, to determine the installed capacity requirement for LSEs in each TD.
- IV. The ISO will apply similar—but not identical—modifications to the load data for each TO and ELRR within each locality for each locality peak load hour, which it will use to calculate the locational installed capacity requirement for LSEs within each locality.²
- A. The ISO will determine the adjusted actual peak load for each locality, which will then be used for the purposes of calculating the locational installed capacity requirement for that locality, as follows:
1. In cases in which an ELRR has reported a load that is not weather-normalized, the ISO will weather-normalize that ELRR's load within each locality by multiplying the load reported by that ELRR inside that locality by the ratio of (1) the weather-normalized load in that locality's peak load hour reported by the TO serving that locality for the portion of the locality not served by ELRRs to (2) the actual load in that locality's peak load hour reported by the TO serving that locality for the portion of that locality not served by ELRRs.
 2. Next, the ISO will sum the weather-normalized loads for the portion of the locality not served by ELRRs and the weather-normalized loads for the portion of the locality served by ELRRs.
 3. The ISO will also add an adjustment to the load in each locality for each locality's peak load hour. These adjustments will reflect any reduction in load in that locality in that hour that resulted from the activation of demand reduction programs that are considered by the ISO when it calculates locational installed capacity requirements as a percentage of peak load (e.g., SCRs, the EDRP program, voltage reduction), but will not include any reduction in load associated with demand reduction programs initiated by a TO serving that locality.
 - An exception applies if such a demand reduction program is being terminated by a TO and will not be active in the upcoming capability year. In that case, the reduction in load associated with that program will be added back to the locality peak load.

² Note that localities and TDs may not be identical.

4. The ISO will not make any adjustment to incorporate transmission losses occurring within a locality in the measure of adjusted actual peak load for that locality, since the procedures used by all TOs and ELRRs serving loads in each currently existing locality to measure loads in each locality already implicitly include intra-locality transmission losses.
- B. The adjusted actual peak loads for each locality will be used, in combination with regional load growth factors provided by the TO for that locality and the locational installed capacity requirements as a percentage of peak load developed by the ISO, to determine the installed capacity requirement for LSEs in each locality.
 - C. The difference between the total installed capacity requirement for LSEs in each locality and the locational installed capacity requirement for LSEs in that locality can be purchased from installed capacity providers located anywhere within the NYCA (or outside the NYCA, if sufficient external ICAP import rights are available).
- V. The ISO will develop criteria to use in reviewing the data supplied by the TOs that are used to develop installed capacity requirements according to the procedures described above, and will have the authority (subject to the outcome of dispute resolution procedures) to override those data when those criteria are not met and no other accommodation can be reached.
- A. The ISO will develop criteria for assessing the weather normalization of loads performed by each TO or ELRR. In the event that the weather normalization procedures used by one or more TOs and ELRRs yields results that fail to meet those criteria:
 1. The ISO shall inform the affected TOs and ELRRs of this finding, and the ISO and each affected TO or ELRR will attempt to agree on an appropriate method for weather normalization loads for that TO or ELRR.
 2. If the ISO and one or more of the affected TOs or ELRRs cannot agree on a weather-normalization procedure, the ISO may choose to use an alternative method for weather-normalizing load data in place of the weather-normalized data provided by that TO or ELRR when calculating installed capacity requirements.
 - The affected TO or ELRR may choose to appeal this decision, in which case the dispute shall be resolved using the Expedited Dispute Resolution Procedures described in the Services Tariff.
 - These procedures shall determine the appropriate method for performing weather normalization for that TO or ELRR's load, using a 50th percentile projection.
 3. If the ISO agrees to use weather-normalization procedures for the loads for one or more TOs and ELRRs that are not consistent with the criteria specified in the Load Forecasting Manual, any other market participant may elect to dispute that decision, in which case the dispute shall be resolved using the Expedited Dispute Resolution Procedures described in the Services Tariff.

- B. Current procedures for evaluating regional load growth factors provided by the TOs will remain in place. The ISO has developed criteria for assessing the regional load growth factors provided by each TO. In the event that the regional load growth factors provided by one or more TOs fail to meet those criteria:
1. The ISO informs the affected TOs of this finding, and the ISO and each affected TO will attempt to determine the most appropriate regional load growth factors to use for that TD.
 2. If the ISO and an affected TO cannot agree on regional load growth factors, the ISO may choose to use alternative regional load growth factors in place of the regional load growth factors provided by that TO when calculating installed capacity requirements.
 - The affected TO may choose to appeal this decision, in which case the dispute shall be resolved using the Expedited Dispute Resolution Procedures described in the Services Tariff.
 3. If the ISO agrees to use regional load growth factors for the loads for one or more TOs and ELRRs that are not consistent with those criteria, any other market participant may elect to dispute that decision, in which case the dispute shall be resolved using the Expedited Dispute Resolution Procedures described in the Services Tariff.
- VI. The ISO will post the results and all pertinent details of its calculations of adjusted actual peak loads and installed capacity requirements using the procedures described above, and will notify all market participants of this posting via the TIE server, in time to permit market participants to review and appeal those calculations.
- A. If any market participant disagrees with the ISO's application of the procedures for determining transmission losses in each TD and allocating those transmission losses among loads or for adjusting loads to account for reductions in load resulting from the activation of SCRs, the EDRP program or voltage reduction, or with the ISO's performance of any other portion of the procedures described above for determining installed capacity requirements (other than disputes concerning weather normalization and regional load growth factors, which are covered in section V above), it may choose to dispute these calculations with the ISO.
- B. If the ISO and the market participant(s) cannot agree, the calculation performed by the ISO shall be used, unless the market participant chooses to have the dispute resolved using the Expedited Dispute Resolution Procedures described in the Services Tariff.

Example Illustrating Calculation of Total Installed Capacity Requirement

<i>Calculation of Total Installed Capacity Requirement</i>	TD 1	TD 2	TD 3	TD 4	NYCA
1 Actual Peak Load Reported by TO Serving TD	9100	5500	9688.6	5320	
2 Weather-Normalized Load Reported by TO Serving TD	9000	5400	9650	5200	
3 Does This Load Include Transmission Losses?	N	Y	Y	Y	
4 Loads Within TD Reported by ELRRs	1000	0	502	0	
5 Are ELRR Loads Weather-Normalized?	Y	NA	N	NA	
6 Do These Loads Include Transmission Losses?	N	NA	Y	NA	
7 Weather-Normalized Loads Within TD for ELRRs	1000	0	500	0	
8 ISO Weather-Normalized Estimate of Transmission Losses During Peak Hour in Portion of TD Not Served by ELRRs	710	400	140	200	1450
9 ISO Estimate of Losses Included in Weather-Normalized Load Reported by TO Serving TD	0	400	140	200	
10 Weather-Normalized Lossless Peak Load for TO	9000	5000	9510	5000	
11 ISO Weather-Normalized Estimate of Transmission Losses During Peak Hour in Areas of TD Served by ELRRs	40	0	10	0	50
12 ISO Estimate of Losses Included in Weather-Normalized Load for ELRRs in TD	0	0	10	0	
13 Weather-Normalized Lossless Peak Load for ELRRs in TD	1000	0	490	0	
14 Weather-Normalized Lossless Peak Load for TD	10000	5000	10000	5000	30000
15 ISO Allocation of Losses to TD	500	250	500	250	1500
16 Load Reduction Due to SCR, EDRP and Voltage Reduction	100	50	50	0	200
17 Adjusted Actual Peak Load for TD	10600	5300	10550	5250	31700
18 Regional Load Growth Factor for TD	2.0%	0.0%	1.0%	0.5%	
19 Forecasted Peak Load for TD	10812.0	5300.0	10655.5	5276.3	
20 Installed Reserve Margin for NYCA (as a % of NYCA Peak Load)					18%
21 Total Installed Capacity Requirement	12758.2	6254.0	12573.5	6226.0	37811.6

Explanation of Calculations for Total Installed Capacity Requirement

[1] through [6]: provided by TO or ELRR

[7] = [4] unless [5] = "N", in which case [7] = [4] * [2] / [1]

[8]: provided by ISO

[9] = [8] unless [3] = "N", in which case [9] = 0

[10] = [2] - [9]

[11]: provided by ISO

[12] = [11] unless [6] = "N", in which case [12] = 0

[13] = [7] - [12]

[14] = [10] + [13]

[15] = ([14] / sum of [14] for all TOs) * sum of [8] and [11] for all TOs

[16]: provided by ISO

[17] = [14] + [15] + [16]

[18]: determined through RLGf process

[19] = [17] * (1 + [18])

[20]: determined by NYSRC

[21] = [19] * (1 + [20])

Example Illustrating Calculation of Locational Installed Capacity Requirement

	Locality 1 (inside TD 3)	Locality 2 (same as TD 4)
Calculation of Locational Installed Capacity Requirements		
1 Actual Peak Load Reported by TO Serving Locality	8952.3	5320
2 Weather-Normalized Load Reported by TO serving Locality	8820	5200
3 Loads Within TD Reported by ELRRs	406	0
4 Are ELRR Loads Weather-Normalized?	N	NA
5 Weather-Normalized Loads Within Locality for ELRRs	400	0
6 Total Weather-Normalized Load Within Locality	9220	5200
7 Load Reduction Due to SCR, EDRP and Voltage Reduction	45	0
8 Adjusted Actual Peak Load for Locality	9265	5200
9 Regional Load Growth Factor for Locality	1.0%	0.5%
10 Forecasted Peak Load for Locality	9357.7	5226.0
11 Installed Reserve Requirement for Locality (as a % of Locality Peak Load)	80%	95%
12 Locational Installed Capacity Requirement	7486.1	4964.7
13 Difference Between Total and Locational ICAP Requirements for TD Containing Locality	5087.4	1261.3

Explanation of Calculations for Locational Installed Capacity Requirement

[1] through [4]: provided by TO or ELRR

[5] = [3] unless [4] = "N", in which case [5] = [3] * [2] / [1]

[6] = [2] + [5]

[7]: provided by ISO

[8] = [6] + [7]

[9]: determined through RLG process

[10] = [8] * (1 + [9])

[11]: determined by ISO

[12] = [10] * [11]