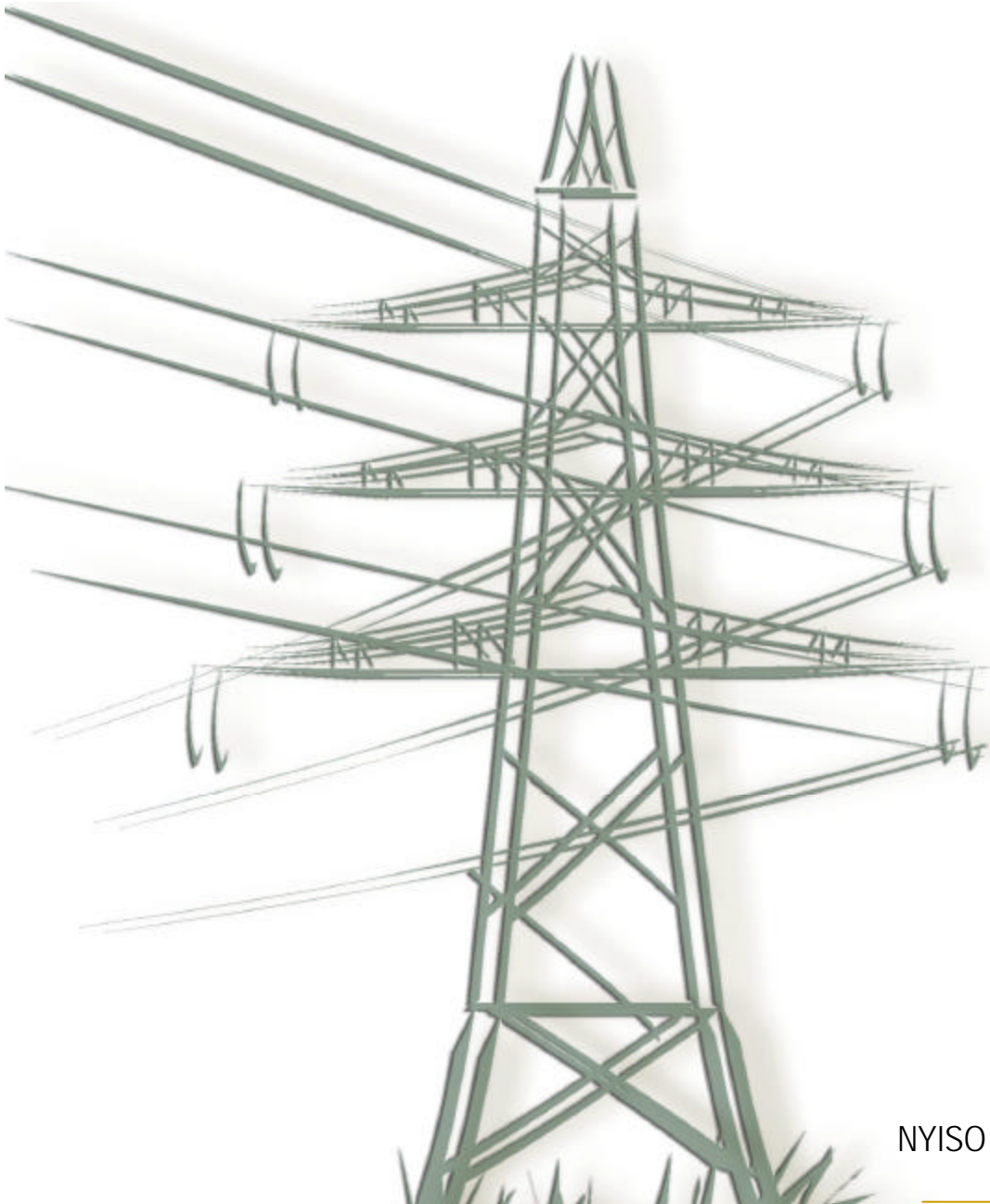




2000 TRANSMISSION PERFORMANCE REPORT



JULY 2001
prepared by
NYISO Operations Engineering



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NYISO 2000 Transmission Performance

Introduction

This report summarizes NYISO transmission utilization during 2000 and compares this with transmission use in 1997, 1998 and 1999. Data is presented in a general format using histograms, cumulative distribution plots, and box plots. Included are graphical depictions of power flows on:

- NYISO interfaces and OASIS Transmission paths, including all operating interfaces and selected planning interfaces.
- selected individual transmission lines
- energy schedules with external pools.

There are also sections on power transfer margins and simultaneously constraining interfaces. The power transfer margins show the difference between the active real time power transfer limit and the actual power flow on the interface. The analysis of simultaneously constraining interfaces tallies the number of hours two or more interfaces were within 100 MW of their respective operating limits. These analyses are included only for NY operating interfaces.

The analysis is based on NY historical real time data sampled in 5 minute (nominal) intervals. The power flow values in each of the charts are hourly averages of the scan data. The data is presented in three graphical formats; histograms (frequency bar charts), flow duration curves, and box plots (showing monthly average flows through time).

Conclusions

Average transmission utilization on most internal NYISO operating interfaces in 2000 was similar to levels observed in 1999. Central East and Total East interfaces are consistently operating near limits, however the margin to limit is lower in 2000 than in previous years.

The Open Access Same Time Information System (OASIS) transmission paths have been monitored since 1997. The flow data on these paths are presented in this report for informational purposes only.

Schedules and actual power flows between NYISO and external systems vary significantly. NY was importing from PJM about 85% of the time in 2000 compared to 70% of the time in 1999, 65% in 1998, and 74% in 1997. The highest exports to PJM occurred between May and August in 2000, a period during which the eastern systems experienced seasonal peak demand levels. During the summer months the average NY exports to PJM were lower in 2000 than in 1999.

Ontario-NY scheduled imports were also slightly higher in 2000 than in 1999. Exports to Ontario decreased both in magnitude and duration. NY exported to Ontario 10% of the time in 2000, compared with 25% in 1999.

Exports to ISO-NE increased in 2000, nearly 75% of the time, while imports from ISO-NE decreased to nearly zero (approximately 25% of the time).

Total East flows were approximately the same in 2000 as in 1999. Total East flows from 1997 through 2000 were not near limits. Total East power flows were above the previous limit of 5450 MW about 10% of the time in 2000, 3% of the time in 1999, 12 % of the time in 1998, and 40% of the time in 1997.

The table below compares minimum flows that occurred 75% of the time (above the lower quartile) and the percent of time the respective flows were within 200 MW of their active limits. For example, in 2000 the Total East flow was greater than 4800 MW 48% of the time and operated to within 200 MW of its active operating limits less than 1% of the time. Central East is operating closer to limits in 2000 than in 1999 or 1998.

| Year | Central East | | Total East | |
|-------------|-----------------------|----------------------------------|------------------------|----------------------------------|
| | Flow >75% of the time | % of time within 200 MW of limit | Flow > 75% of the time | % of time within 200 MW of limit |
| 2000 | 2021 MW | 68% | 4231 MW | < 1% |
| 1999 | 1697 MW | 26% | 3375 MW | 1% |
| 1998 | 1549 MW | 35% | 3493 MW | 3% |
| 1997 | 2285 MW | 85% | 4800 MW | 7% |

Moses South (Adirondack-Central Transmission Path) flows were significantly higher in 2000 than 1999. Flows were north less than 3% of the time.

Flows from HQ are higher in 2000 than in previous years. The amount of time there are imports is about 90% compared with 70% in 1999. Imports are below 1000 MW about 45% of the time and below 700 MW 40% of the time. Exports to HQ decreased to less than 10% of the time in 2000 from 29% in 1998. Flows were zero approximately 5% of the time.

Results

The three graphical formats, histograms, flow duration curves, and box plots, present the data in different ways to show statistical distribution and comparisons of flows from year to year. The following describes each of the graphical formats. An explanation of the transfer margin calculation is also included.

Histograms

These show the statistical distribution of flows over the observed operating range for the year. The data is presented for the current year (2000). The values along the ordinate are midpoints of a preselected range. For example, two consecutive midpoints of 300 and 600 represent all the flows with values of 300 MW \pm 150 and 600 MW \pm 150. The length of the bars represent the frequency, or the number of times a flow is within the range around the midpoint.

In the case of unrestricted operation on a facility there would be a random distribution of flows leading to a statistically normal distribution. In practical cases the distribution is skewed in one direction or there may be certain ranges that have "spikes". The flows may skew towards a certain level for several reasons: an economic optimum may exist for a while that inclines the flow to a certain value, an interface or facility may be operating at or near its limit, or a nearby facility may be limited and consequently limits the facility in question.

An example of spikes in the histogram is a transmission line out of service. The line may have a normal distribution of flows from 200 to 600 MW and a large spike at zero representing the time the facility was out of service. Unfortunately the raw data does not distinguish between O/S conditions or actual zero flow, although the latter is fairly uncommon for most facilities.

Flow Duration Curves

In a continuous monotonically decreasing curve, this shows the percentage of time a facility or interface was operating at or above a certain value in its observed operating range. The graphs include the current year, 2000, and the previous three years (1997, 1998, and 1999). Overlaying the curves for each year gives a visual comparison on how the utilization of the particular facility is changing.

Box Plots

Box and whisker plots give a through time graphic view of statistical distributions of data at each discrete time or time period. The plots in this report include four years of data, the current year (2000) and the previous three years (1997-1999). The time axis (abscissa) represents each month during the four year analysis period. The boxes and whiskers represent all the flows observed during a month.

The heavy solid line on the plots in this report connects the monthly average (MW flow) values. The "box" represents the inter-quartile range, in which 50% of the data values lie. The bar in the middle of the box is the (statistical) median. The median cuts the box into two parts, each contains 25% of the data values. The long vertical lines extending from the boxes, whiskers, represent the higher and lower 25% (quartiles) of the data values. These whiskers extend to the absolute minimum and maximum value observed in the respective time period (1 month in this case). The tick marks on the whiskers are placed at distance not exceeding 1.5 times the length of the box (inter-quartile range), from each edge of the box. This highlights extreme minimums and maximums that may have occurred and separates the extremes from the rest of the data values.

Transfer Margins

A supplementary section is included showing transfer margins on NYPP operating interfaces. The transfer margin is the MW transfer capability remaining from the instantaneous flow to the active transfer limit. These values are calculated by taking the active directional transfer limit and subtracting the real time flow at each (5 minute) scan.

$$\text{Transfer Margin} = \text{Transfer Limit}_{\text{directional}} - \text{ABS}(\text{Actual Flow})$$

The transfer margin is generally a positive number. A negative number would represent flow

exceeding the transfer limit. The plotted values are the hourly averages of the calculated differences. The transfer margins are presented in the same format as the flows and schedules (i.e., histograms, duration curves, and box plots).

It is important to keep in mind that the bars on the histograms represent the frequency of occurrence in a range around the midpoint. Using the Total East margin as an example, the histogram 2000 has midpoints at -100 and 300 MW. The bar at 300 means that Total East was operating within 400 MW of its active limit 1.70% of the time during 2000. The bar at -100 means that Total East was operating at levels potentially up to 100 MW above its active limit .22% of the time during 2000. Except in the case of unusually high overloads on an interface (i.e., spikes, contingencies), the margins are generally zero or greater.

There are two sets of charts for Central East Transfer Margins. One for pre-contingency flows and the second for post-contingency flows and limits. The Central East post-contingency transfer margin is calculated by taking the minimum margin, or difference, of the three post contingency voltage collapse limits and their respectively calculated post contingency flows.

Interfaces Simultaneously Constraining Transfers

The table in Appendix D summarizes the combinations of interfaces as they were simultaneously constraining during 1997, 1998, 1999, and 2000. Interfaces were considered constraining if the actual flow was within 100 MW of the respective interface's limit. This limit was the active transfer limit in the real-time system at the time of the sampling.

The results are summarized as hourly values derived from 5 minute real time samples. In the four year time period sampled, there were 100 unique combinations of NY operating interfaces that were constraining at various times. These combinations range from two to five interfaces at a time. Some of the combinations are recurring over each of the years, others occurred in only one year. Several combinations occurred only once.

For the circumstances analyzed, two or more interfaces were constraining from 2% to 38% of the time in a given year between 1997 and 2000. Only the Central East/Total East combination appeared regularly more than 5% of the time. Most of the rest of the simultaneous constraints occurred 3% of the time or less. This indicates the total percentage is an accumulation of many combinations, that may occur for a variety of reasons, rather than a few that may occur for some common phenomenon. Central East and Total East are closely related. If this combination is removed, the percentages are still significant. The annual totals with and without the Total East/Central East combination are summarized in the table below.

| Year | All Combinations | | Central East/Total East Excluded | |
|------|------------------|-----------------|----------------------------------|-----------------|
| | Hours | Percent of Year | Hours | Percent of Year |
| 1997 | 1378 | 15.7% | 643 | 7.3% |
| 1998 | 333 | 4.0% | 106 | 1.7% |
| 1999 | 382 | 4.0% | 360 | 3.8% |
| 2000 | 1921 | 22.0 % | 1874 | 21.4% |

Further restrictions are also likely by virtue of individual line constraints. The analysis presented here only used interface flow related data. Interfaces, or Transmission Paths (to use the new terminology) are often implicitly limited by a single element for some contingency (e.g., the loss of one Leeds-Pleasant Valley 345 kV circuit on the parallel Leeds-Pleasant Valley 345 kV circuit). This contingency will implicitly limit both Central East and UPNY-Con Ed. This is not reflected as an explicit interface limit and outside the context of this analysis. While the overall trend from 1997 to 2000 is decreased simultaneous interface limits, this may be due, in part, to Central East singularly limiting so frequently.

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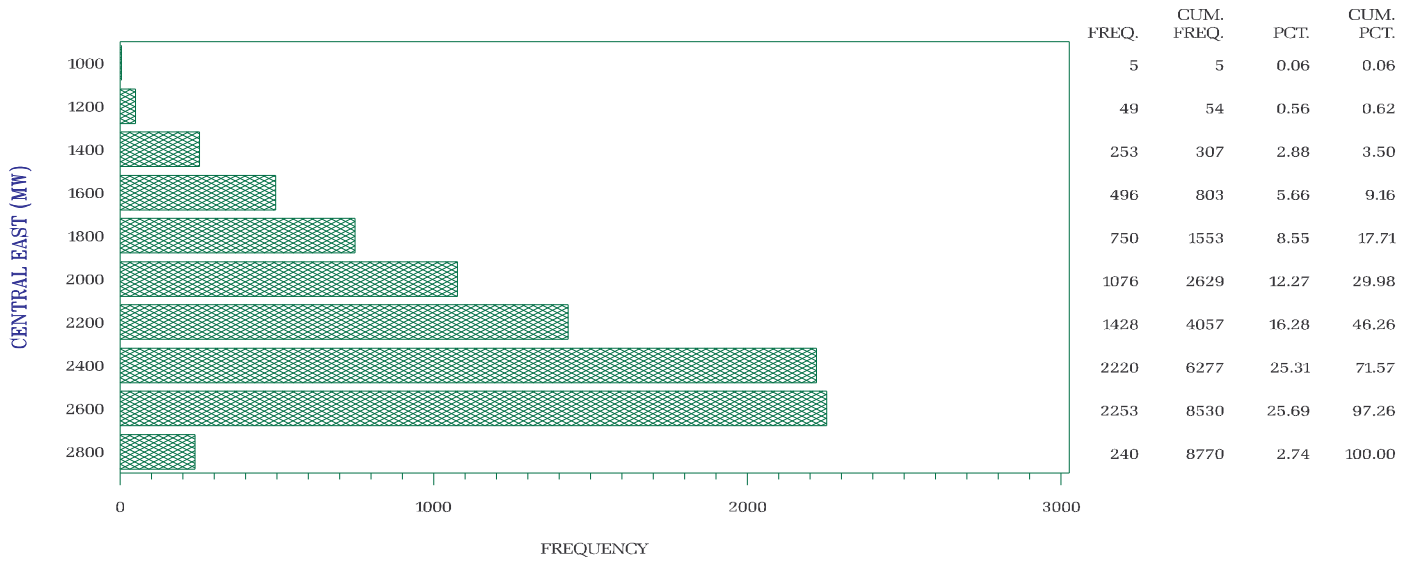
Appendix A – Power Flows

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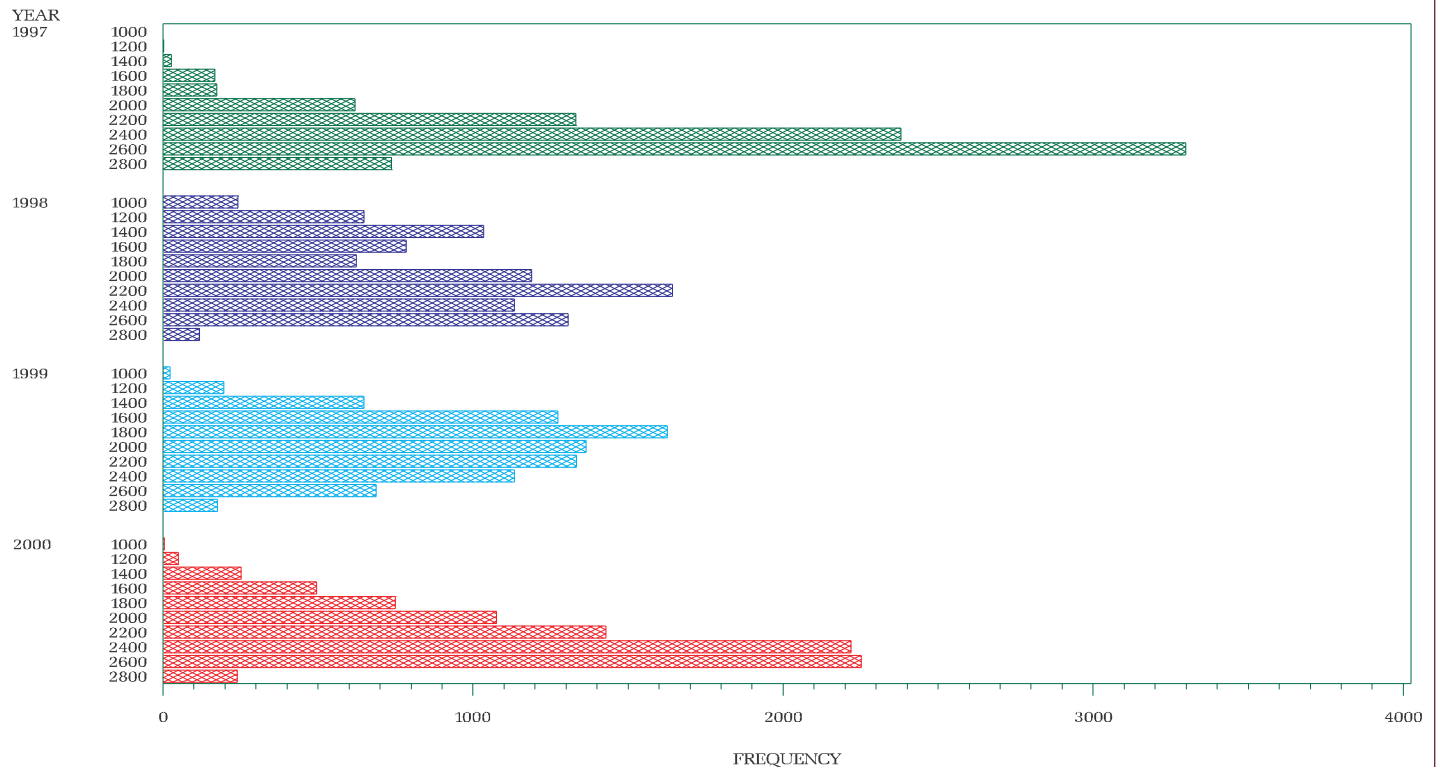
NYISO Transmission Use Statistics For January-December 2000

CENTRAL EAST



NYISO Transmission Use Statistics For January 1997-December 2000

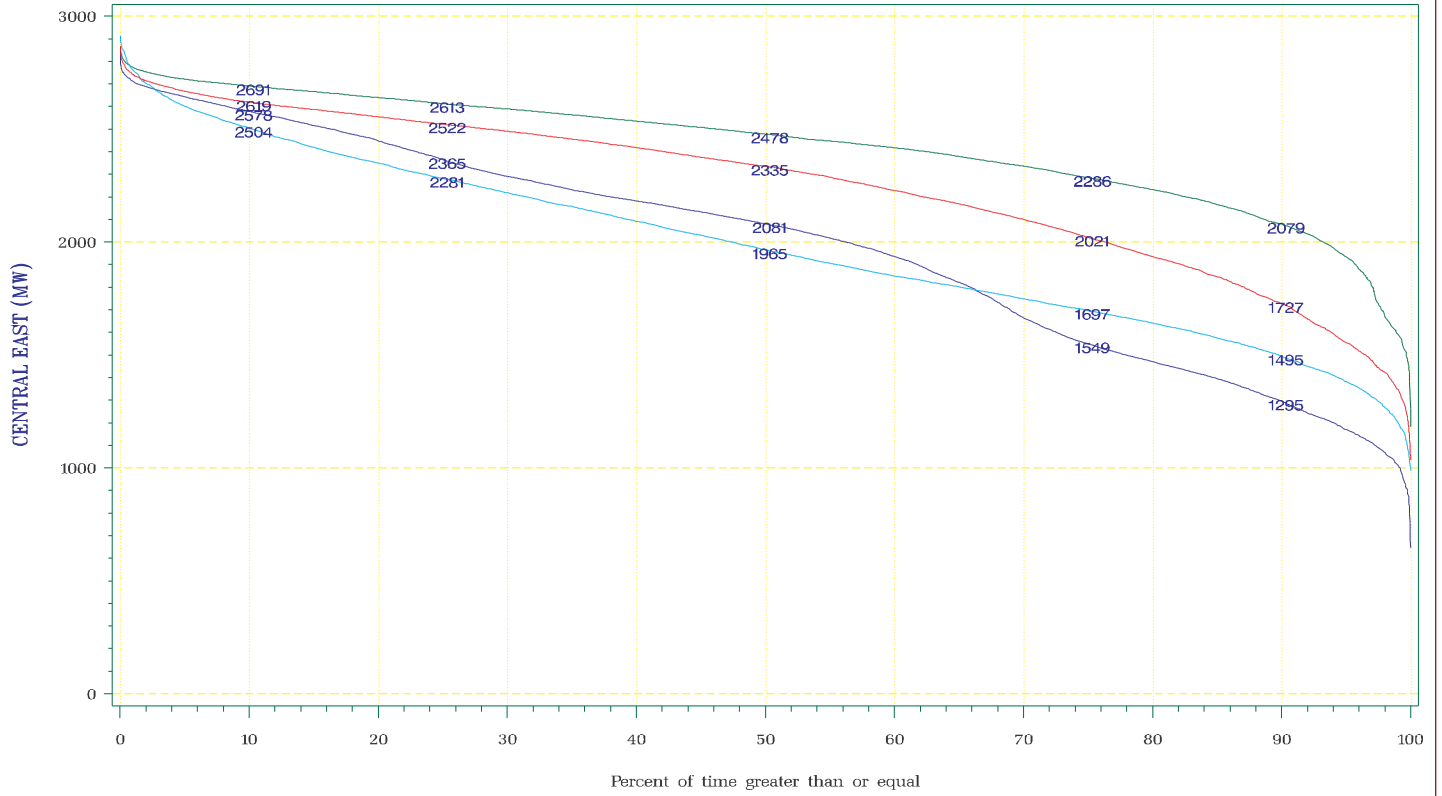
CENTRAL EAST



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

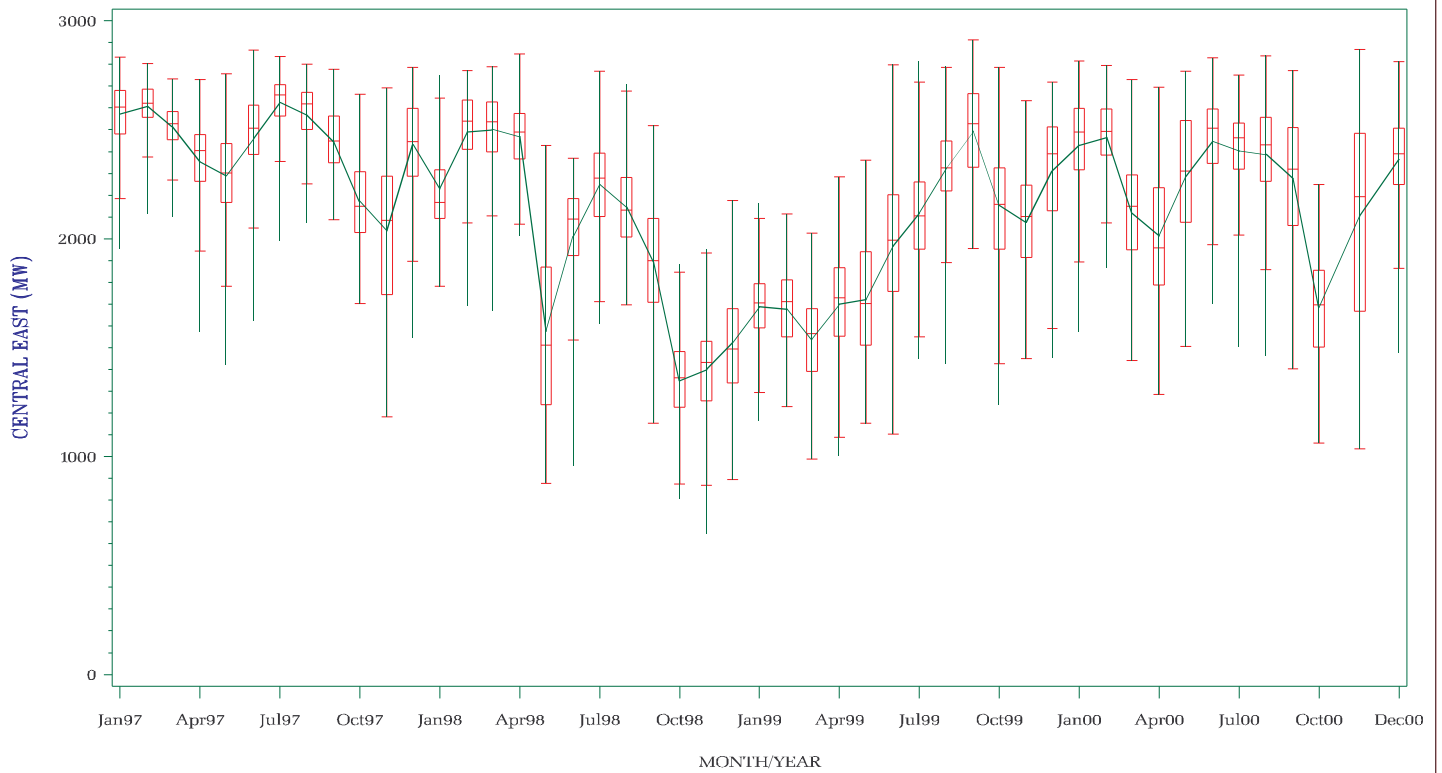
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1997 1998 1999 2000

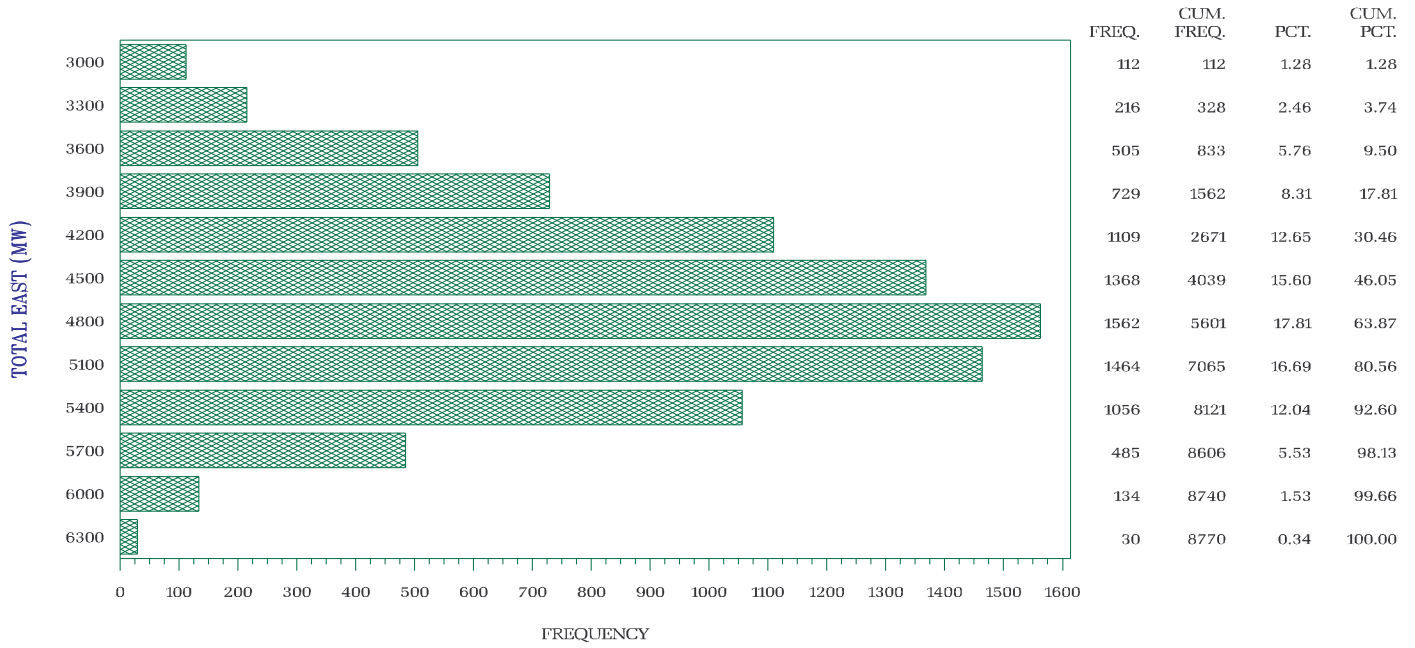
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

CENTRAL EAST



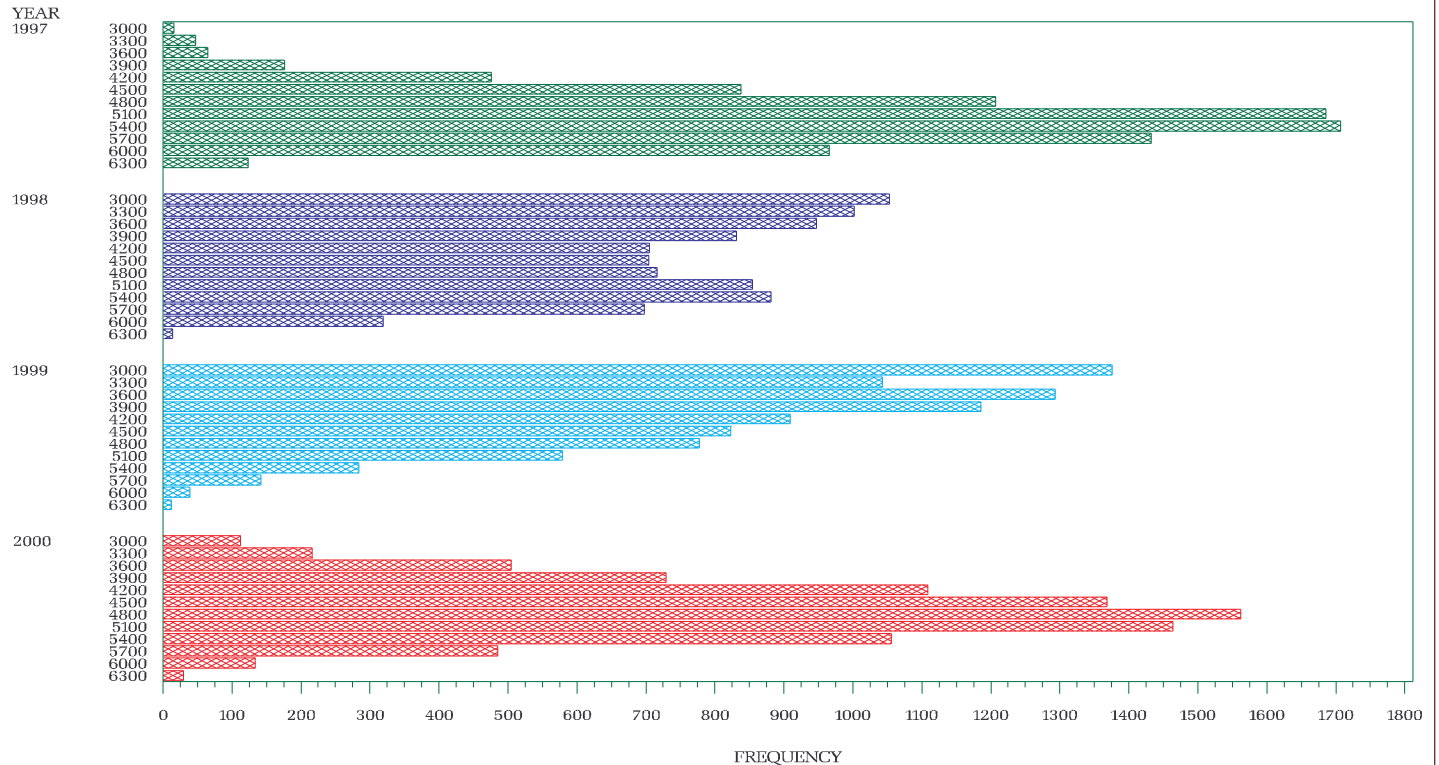
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TOTAL EAST



NYISO Transmission Use Statistics For January 1997-December 2000

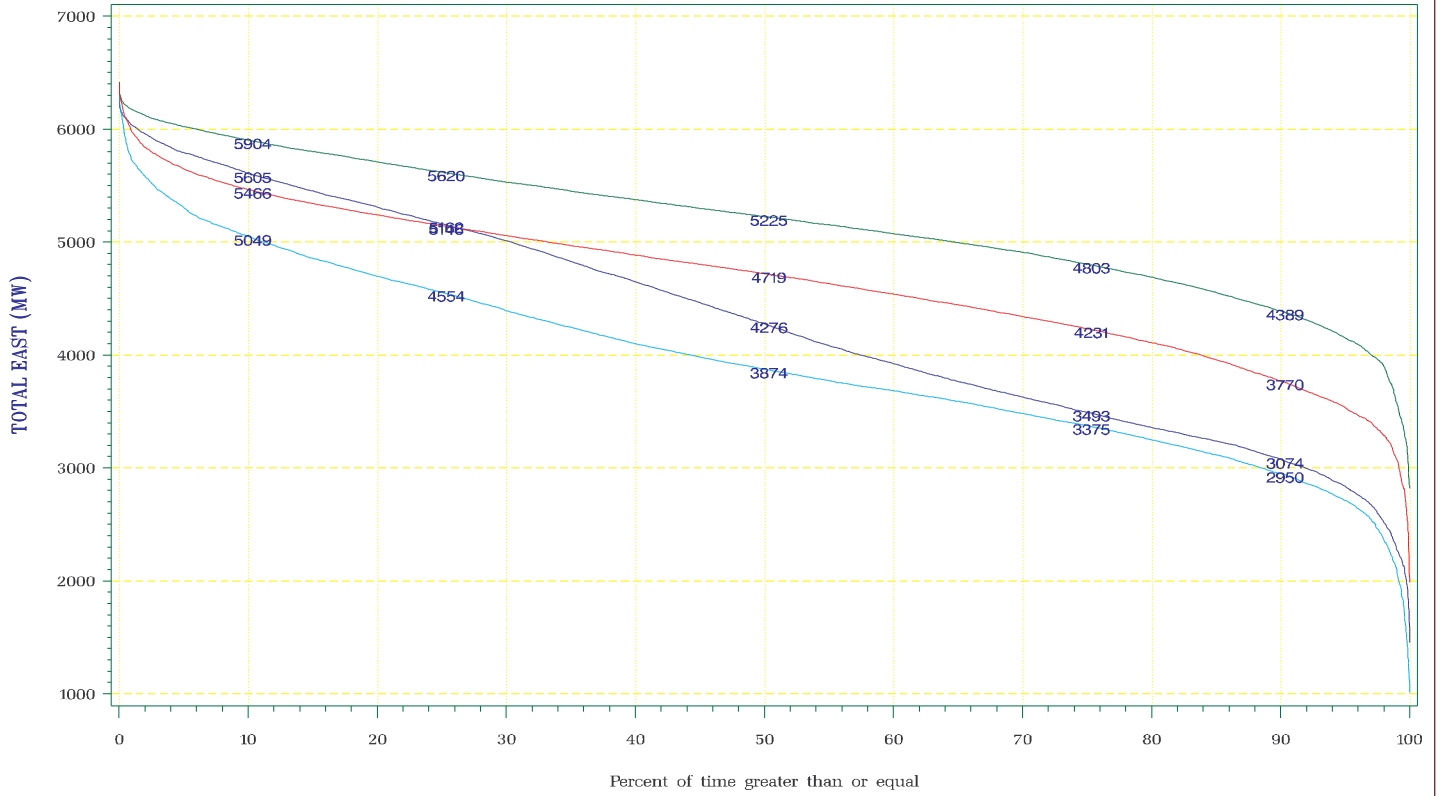
TOTAL EAST



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

TOTAL EAST



1997 1998 1999 2000

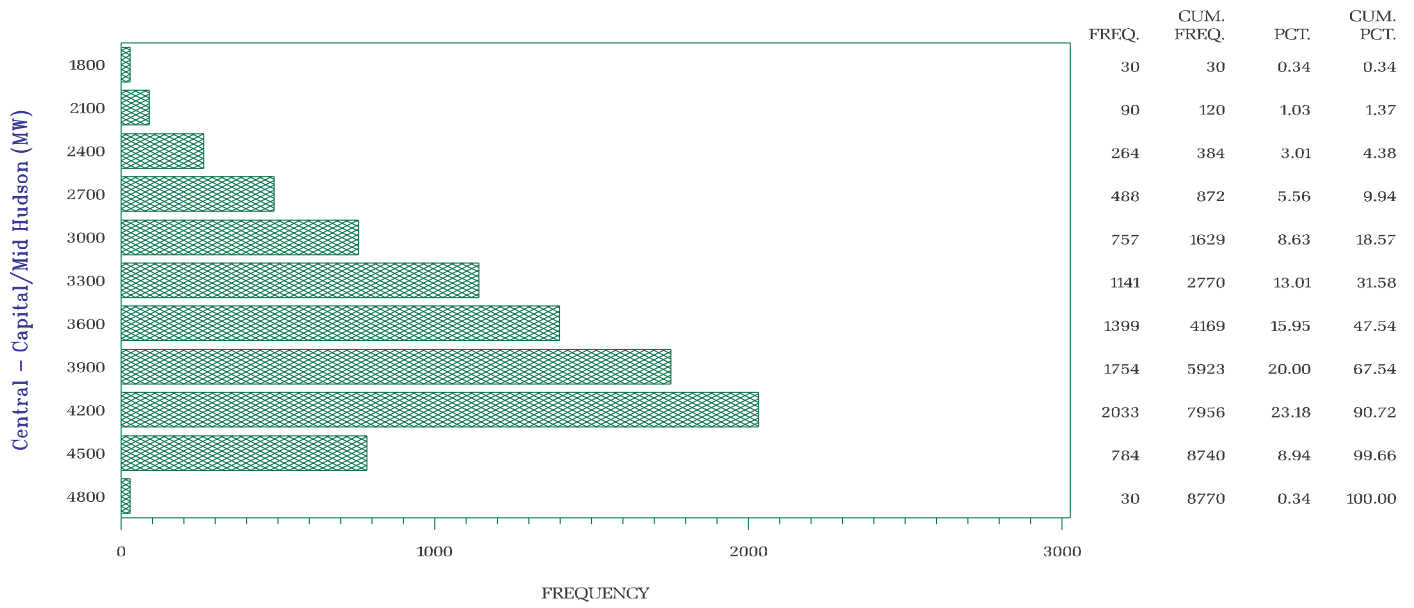
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TOTAL EAST



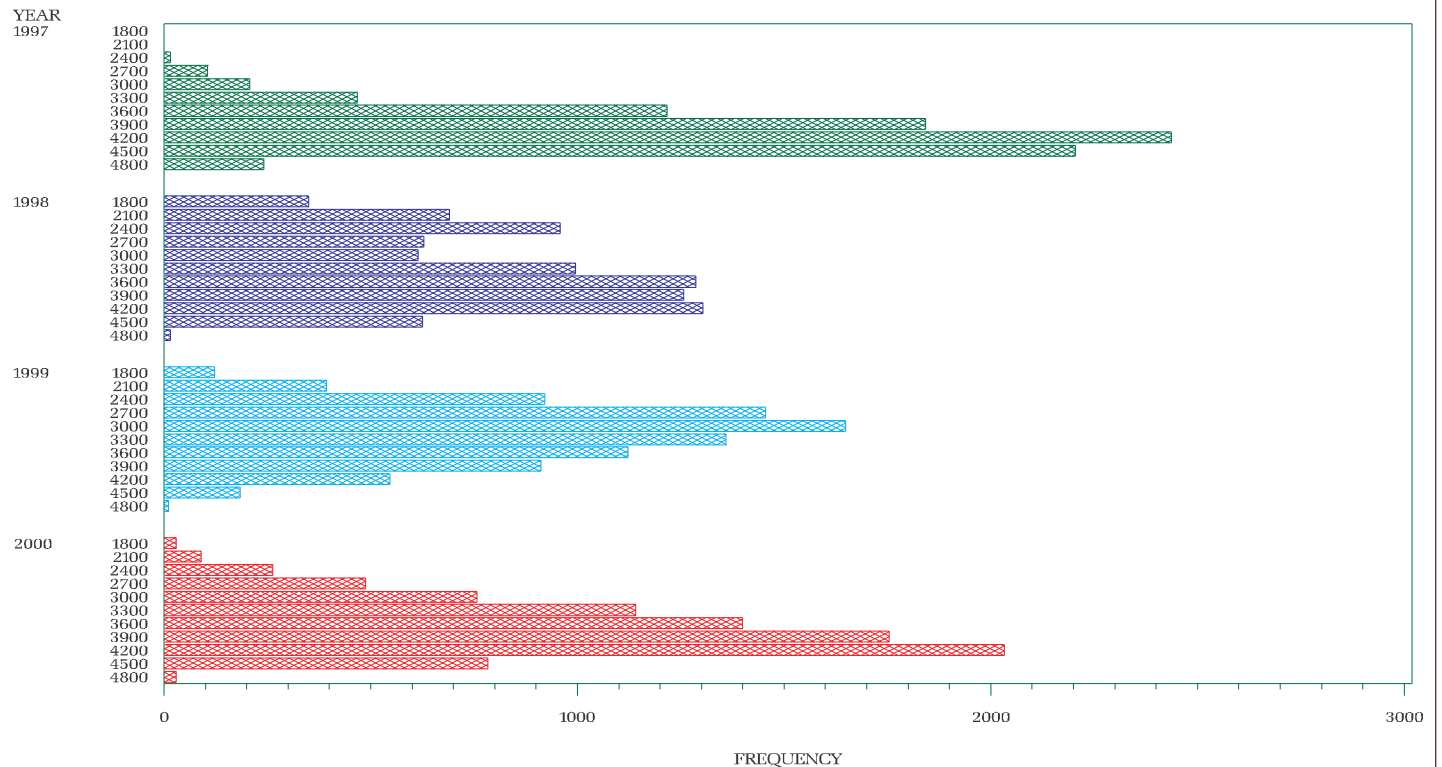
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Central – Capital/Mid Hudson



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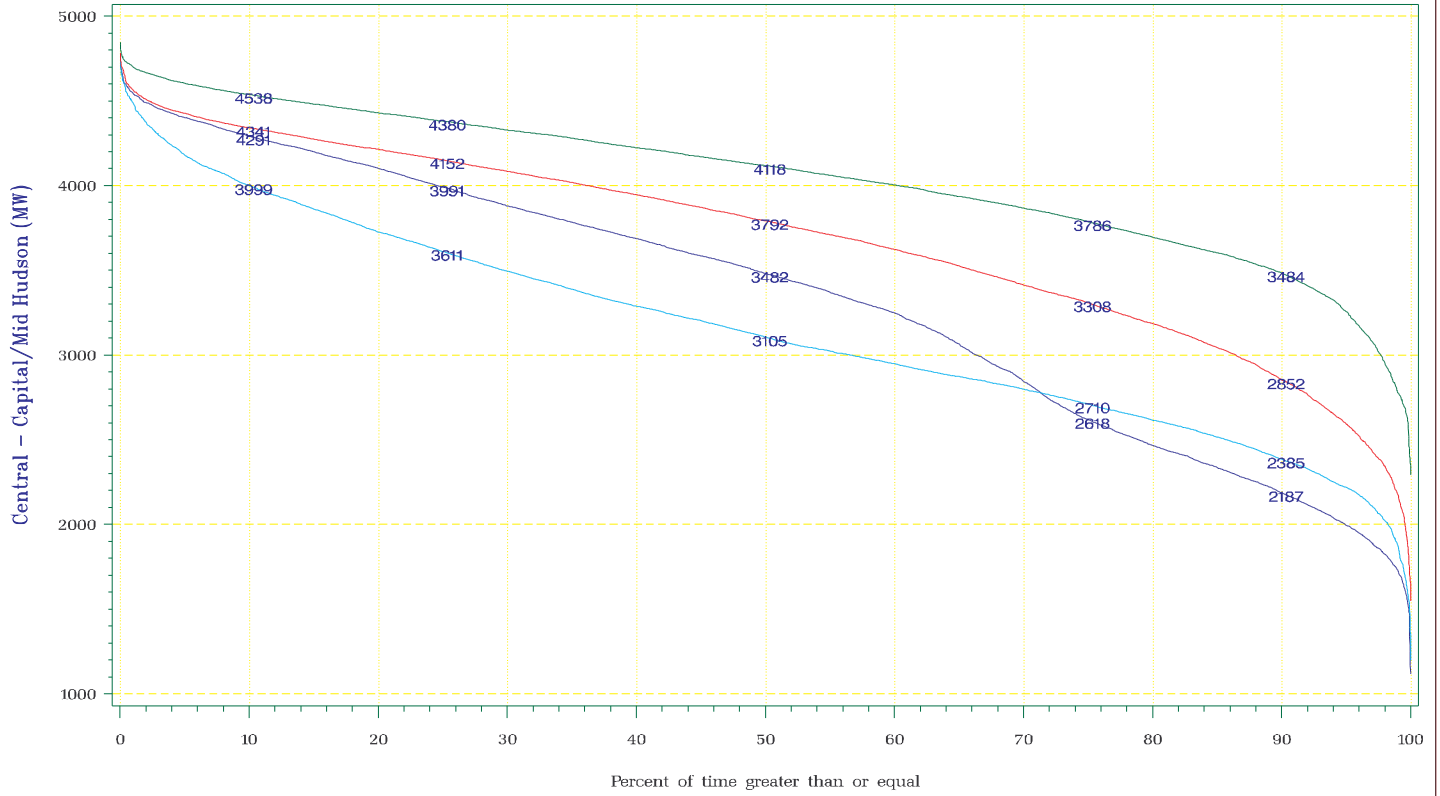
Central – Capital/Mid Hudson



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

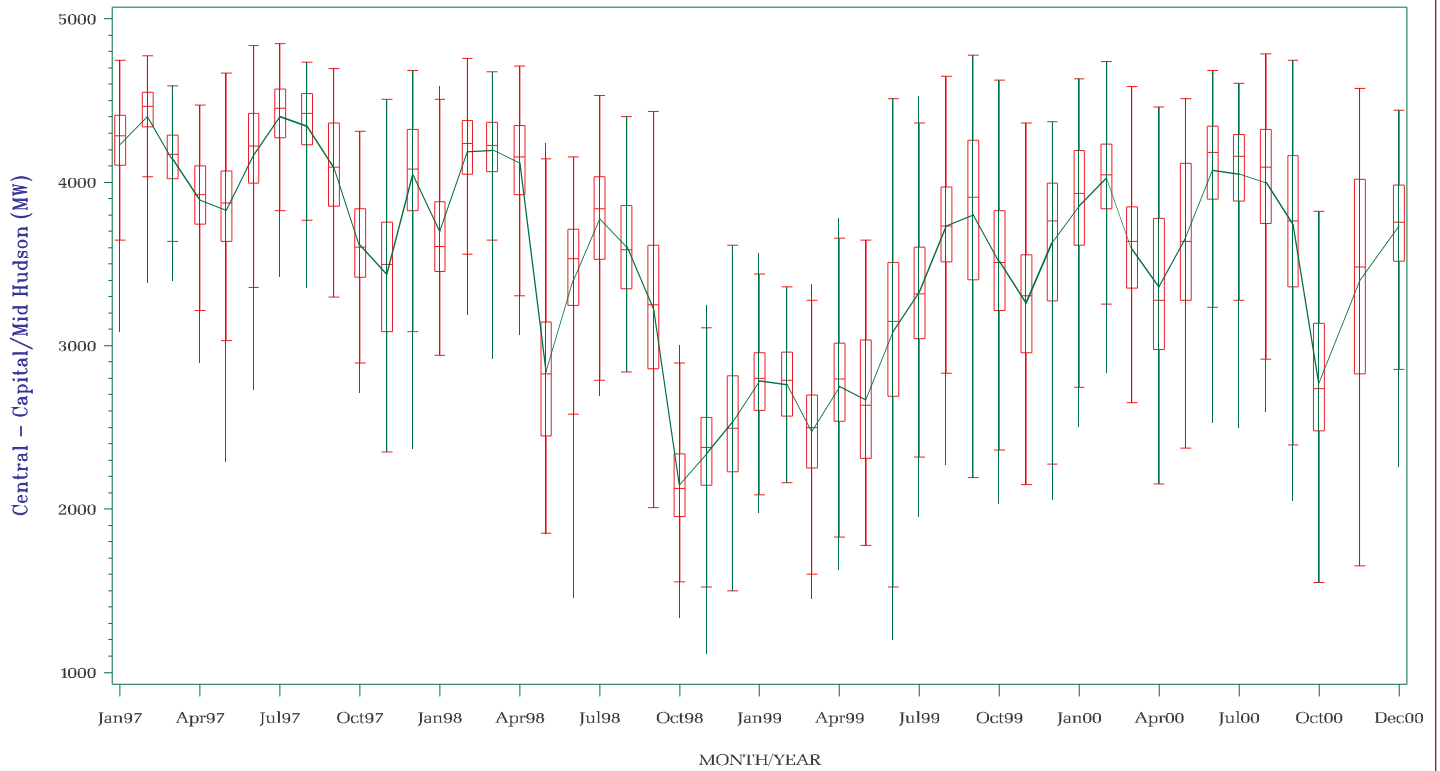
Central – Capital/Mid Hudson



1997 1998 1999 2000

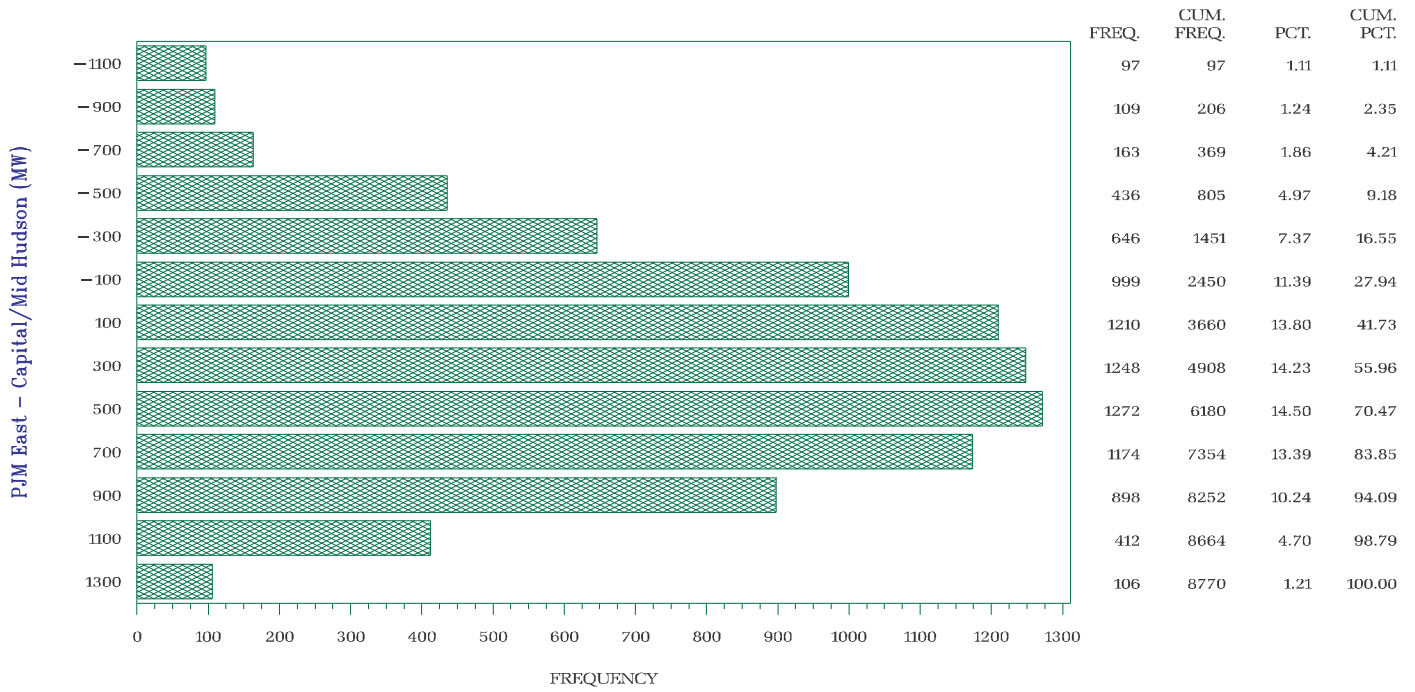
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Central – Capital/Mid Hudson



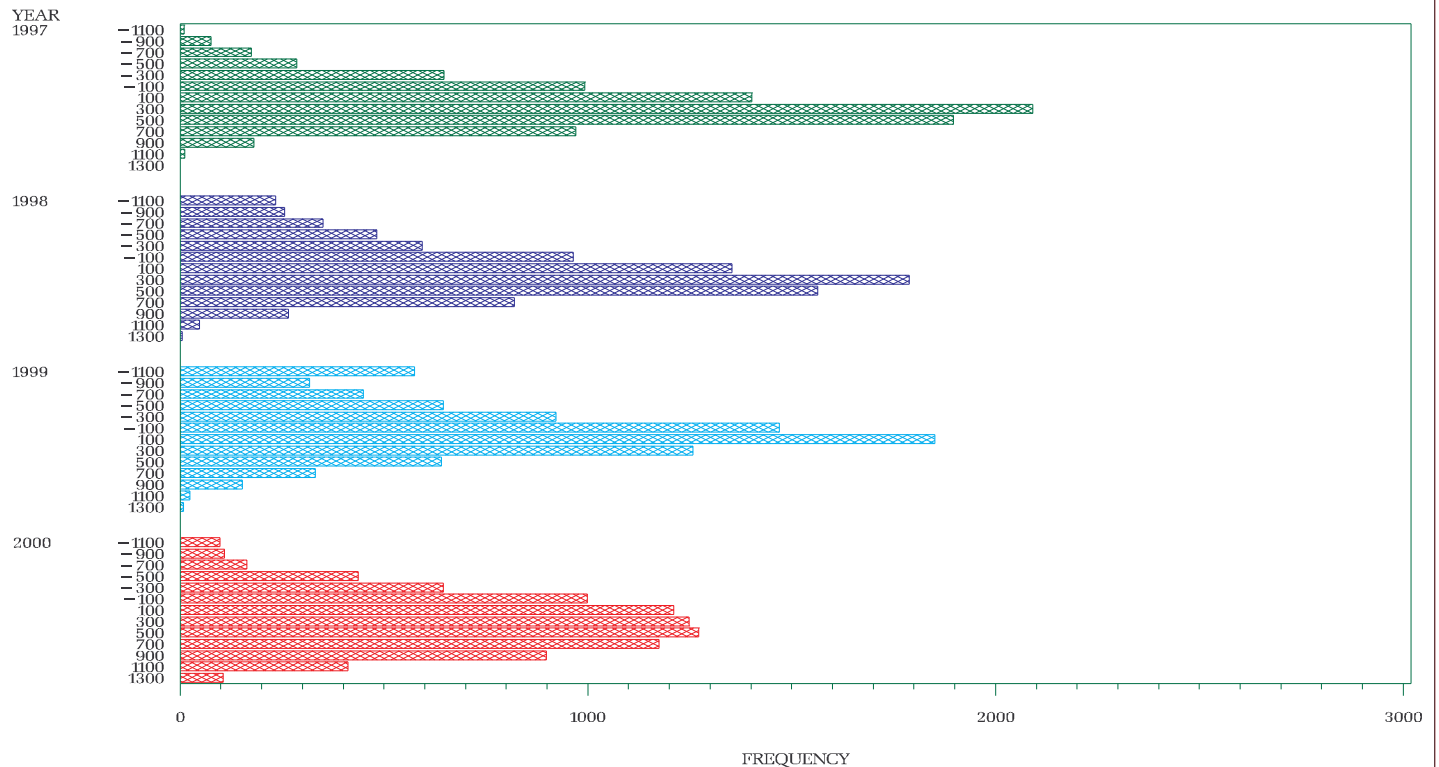
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PJM East – Capital/Mid Hudson



NYISO Transmission Use Statistics For January 1997–December 2000

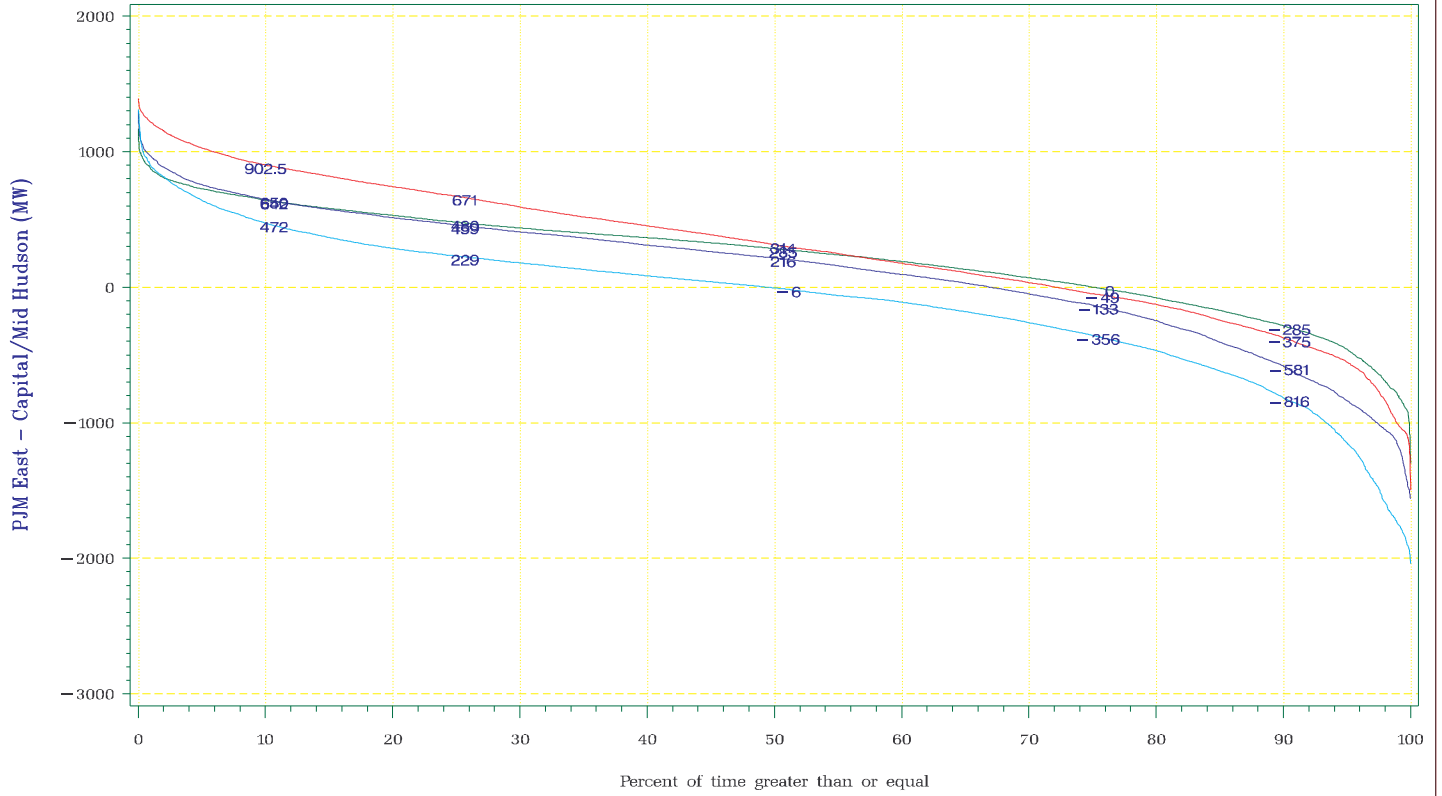
PJM East – Capital/Mid Hudson



1997 1998 1999 2000

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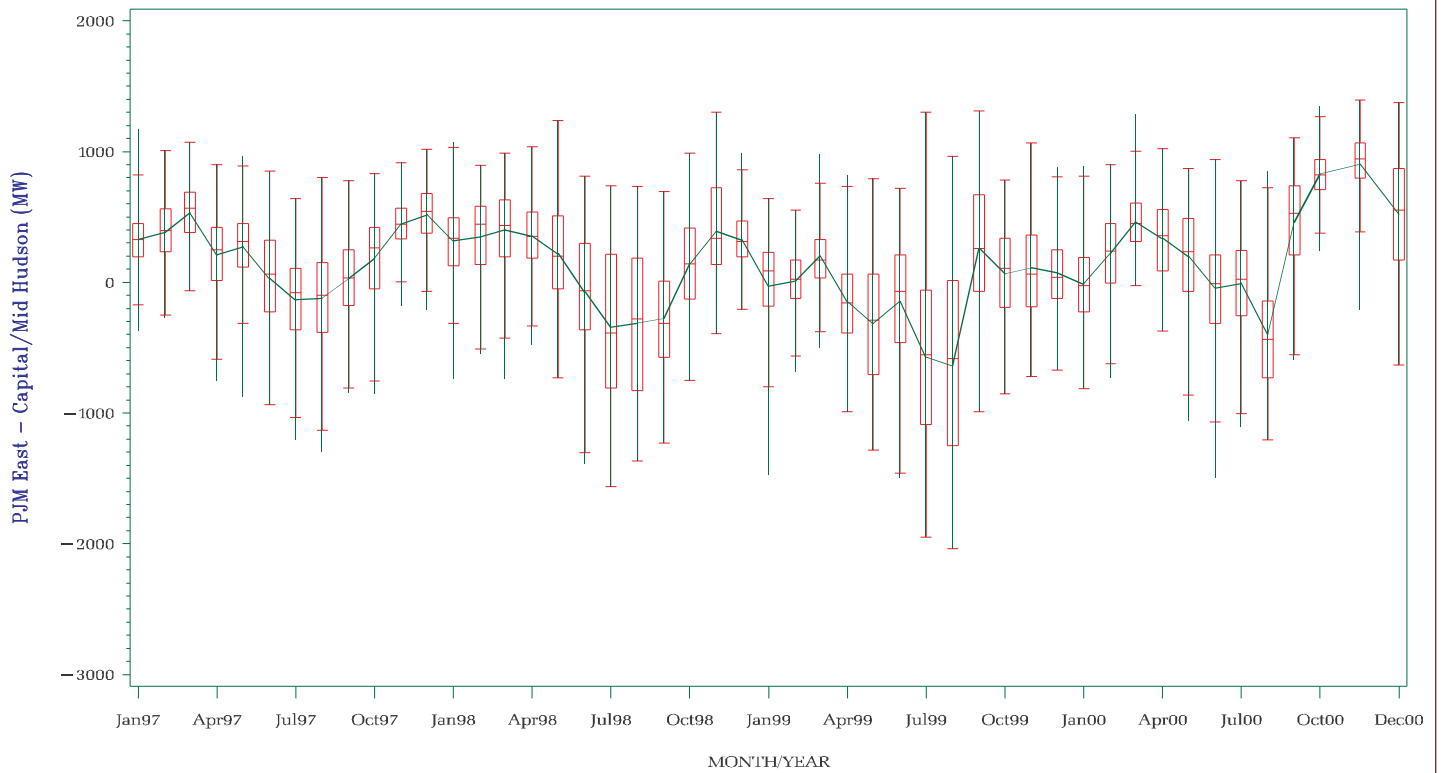
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1997 1998 1999 2000

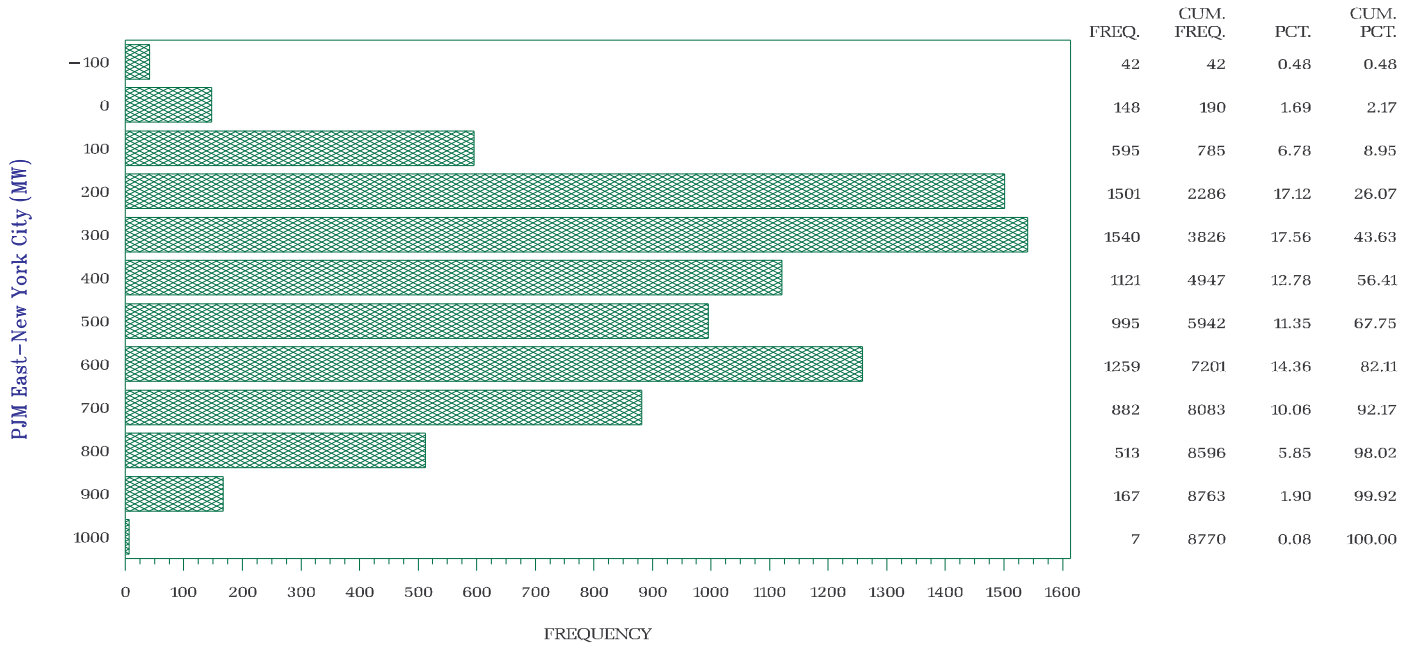
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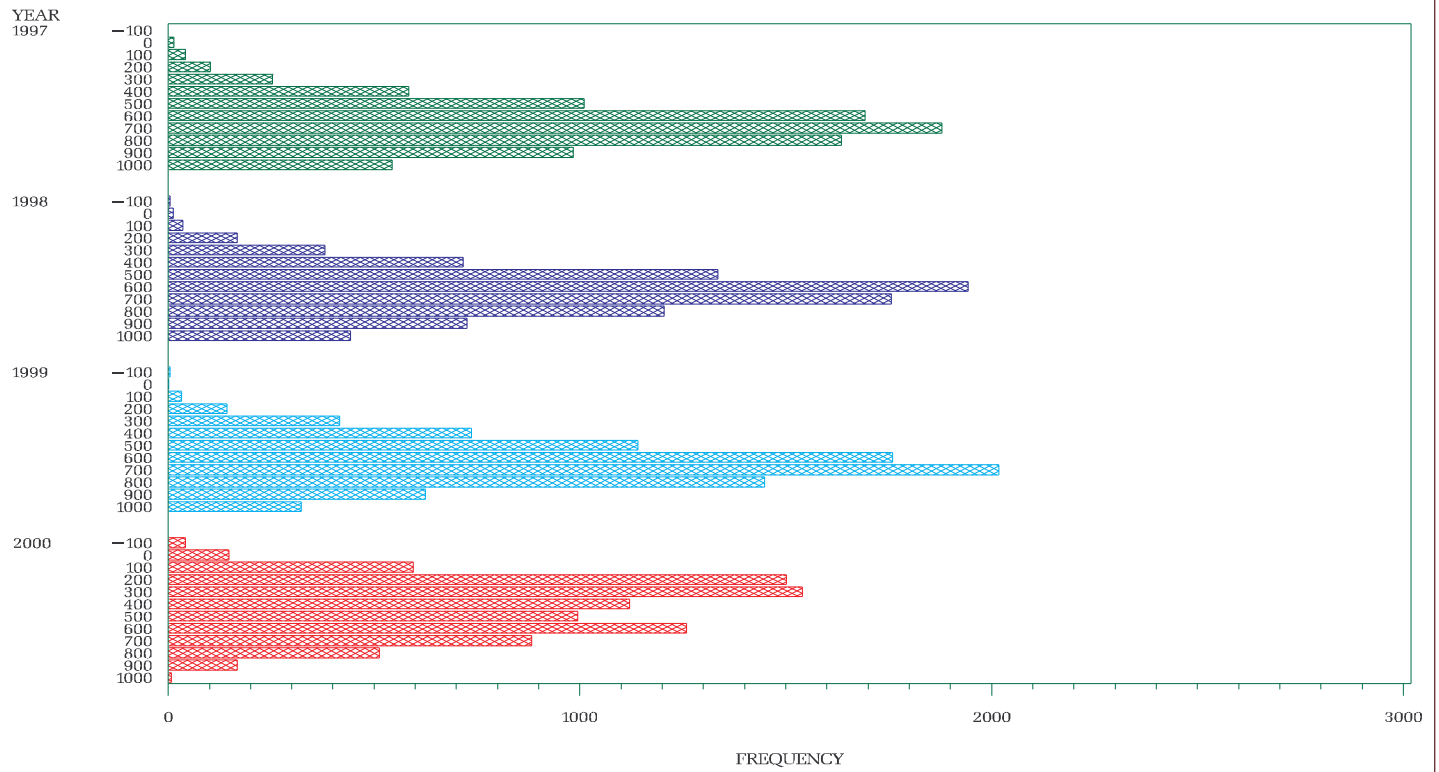
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PJM East – New York City



NYISO Transmission Use Statistics For January 1997–December 2000

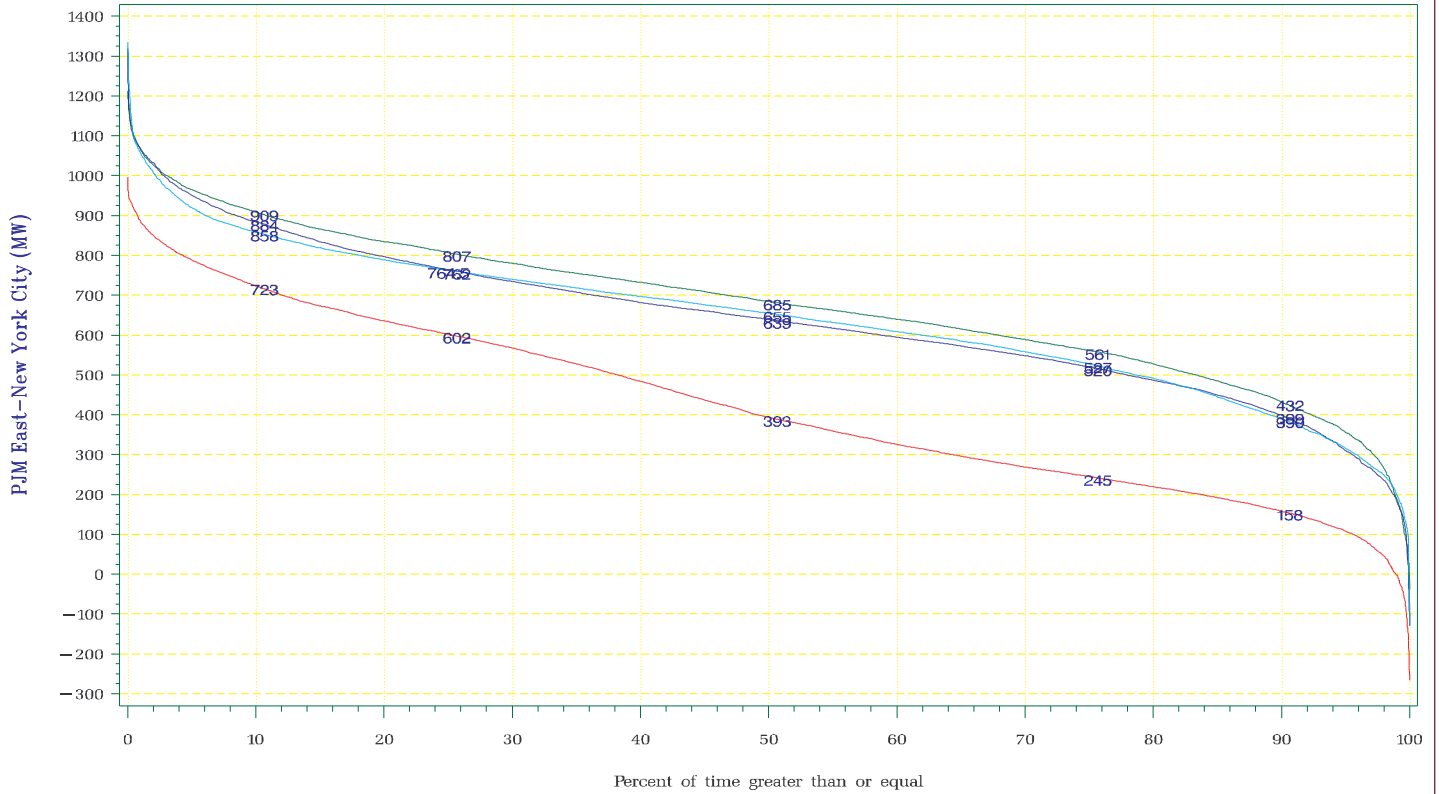
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1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

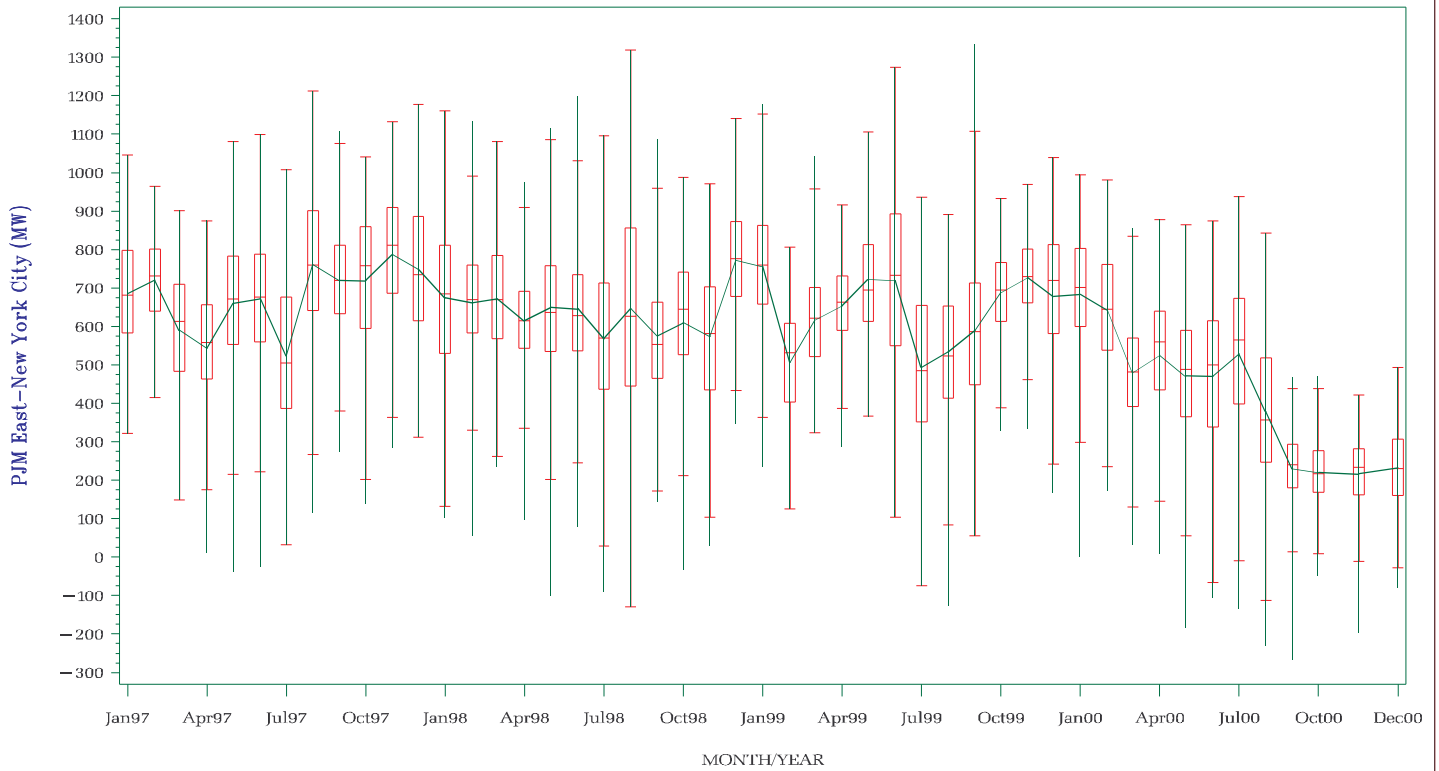
PJM East – New York City



1997 1998 1999 2000

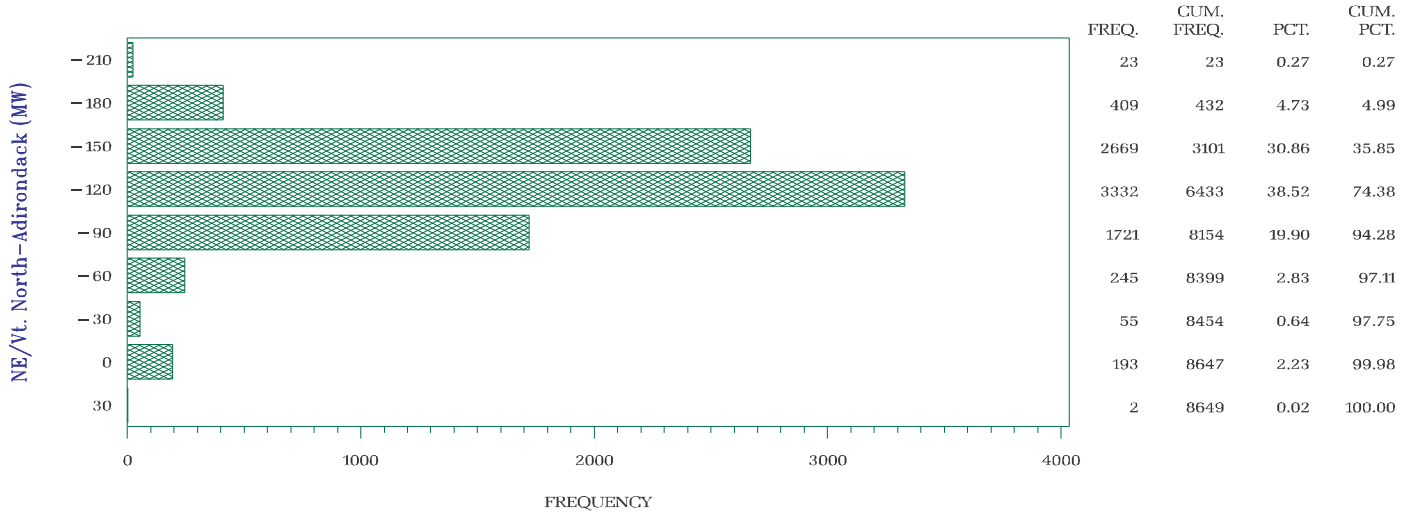
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PJM East – New York City



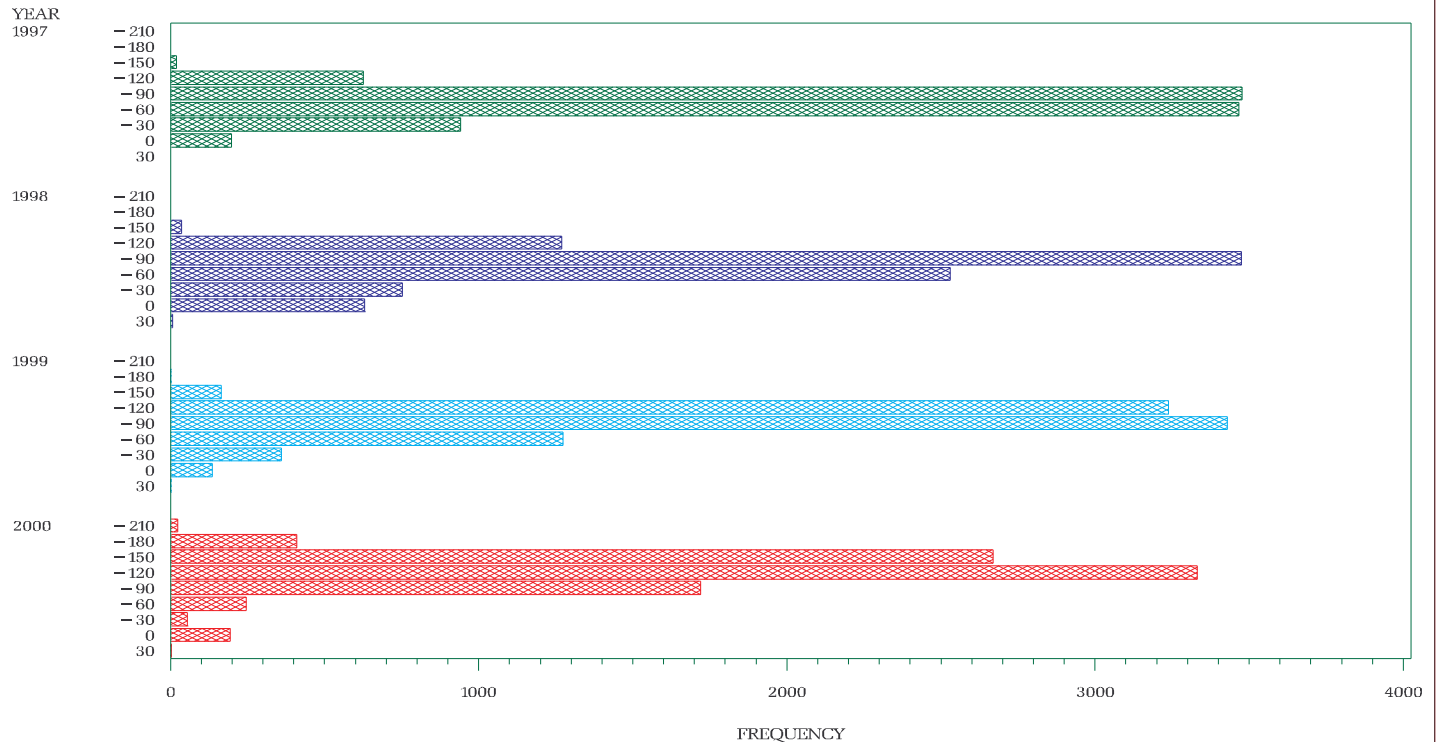
NYISO Transmission Use Statistics For January-December 2000

NE/Vt. North – Adirondack
PV – 20 Grand Isle – Plattsburgh



NYISO Transmission Use Statistics For January 1997-December 2000

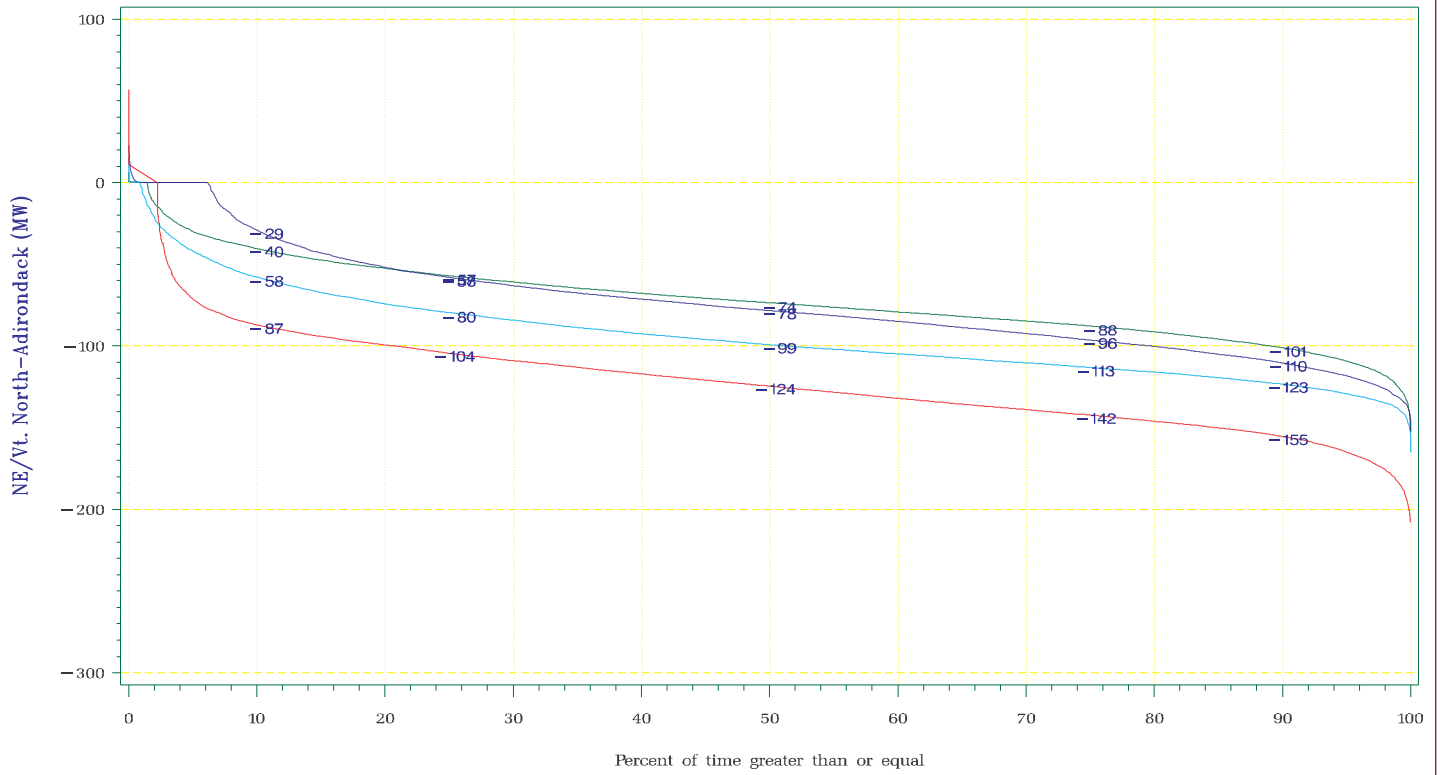
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PV – 20 Grand Isle – Plattsburgh



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

NE/Vt. North – Adirondack
 PV – 20 Grand Isle – Plattsburgh



1997 1998 1999 2000

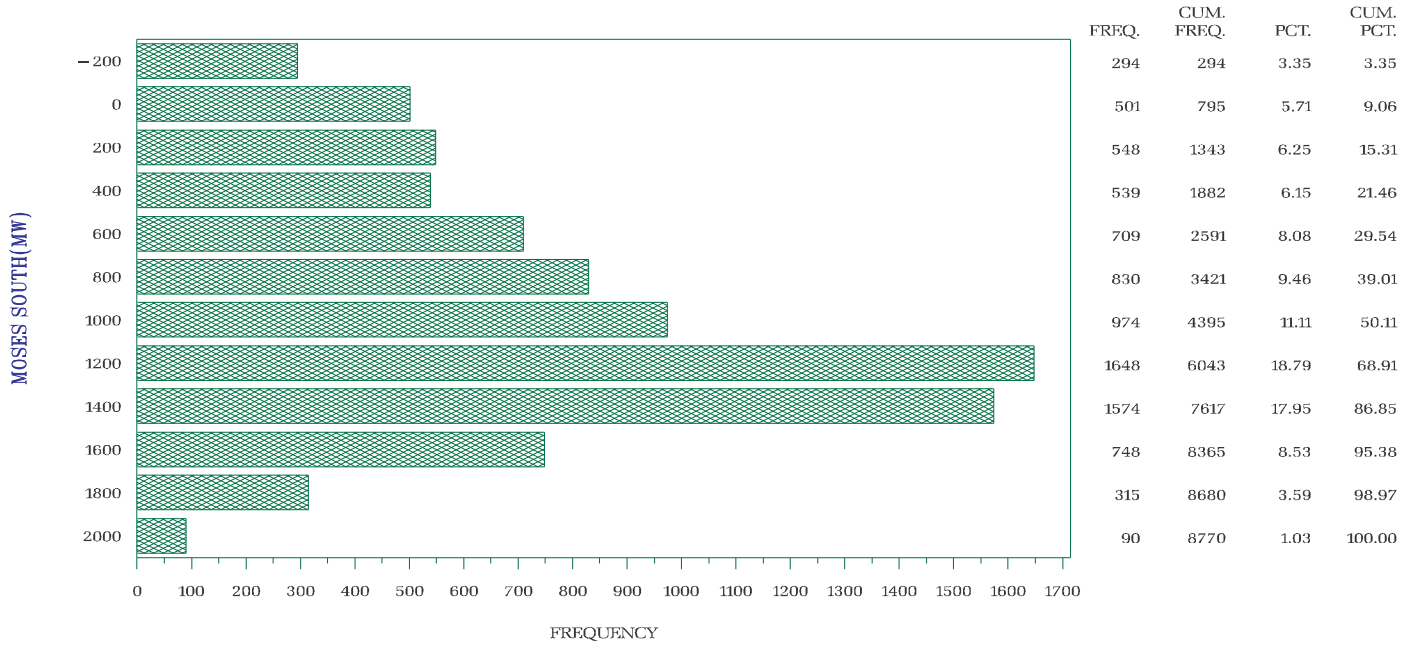
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NE/Vt. North – Adirondack
 PV – 20 Grand Isle – Plattsburgh



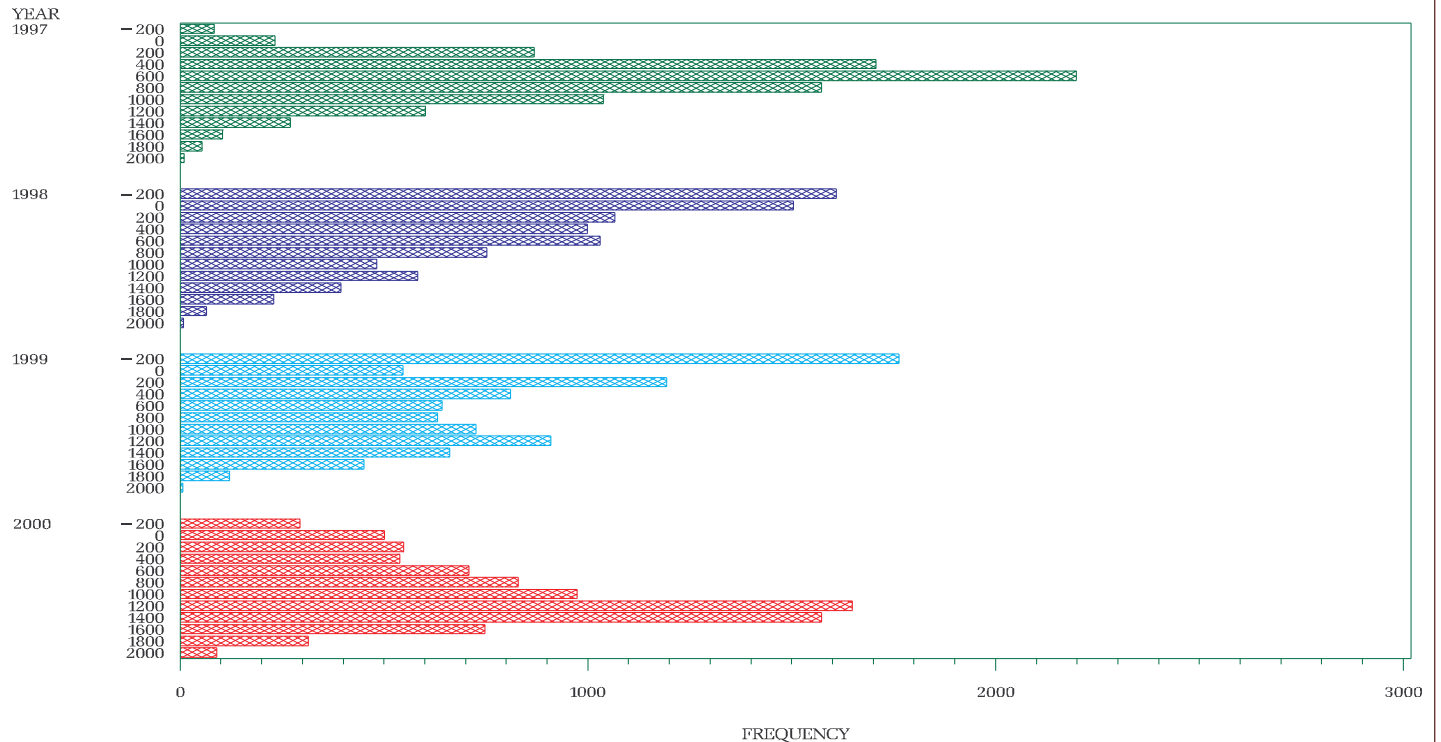
NYISO Transmission Use Statistics For January-December 2000

MOSES SOUTH
Adirondack - Central



NYISO Transmission Use Statistics For January 1997-December 2000

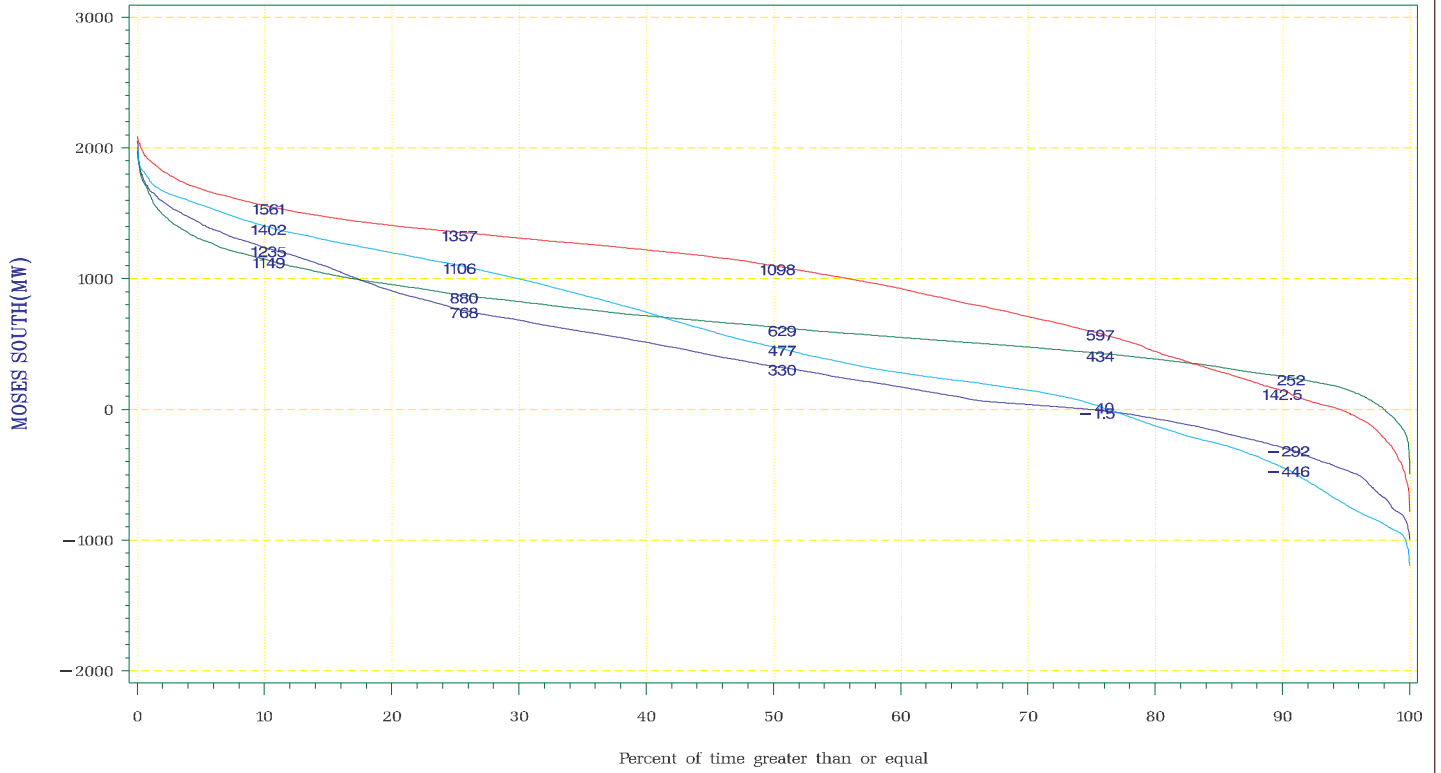
MOSES SOUTH
Adirondack - Central



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

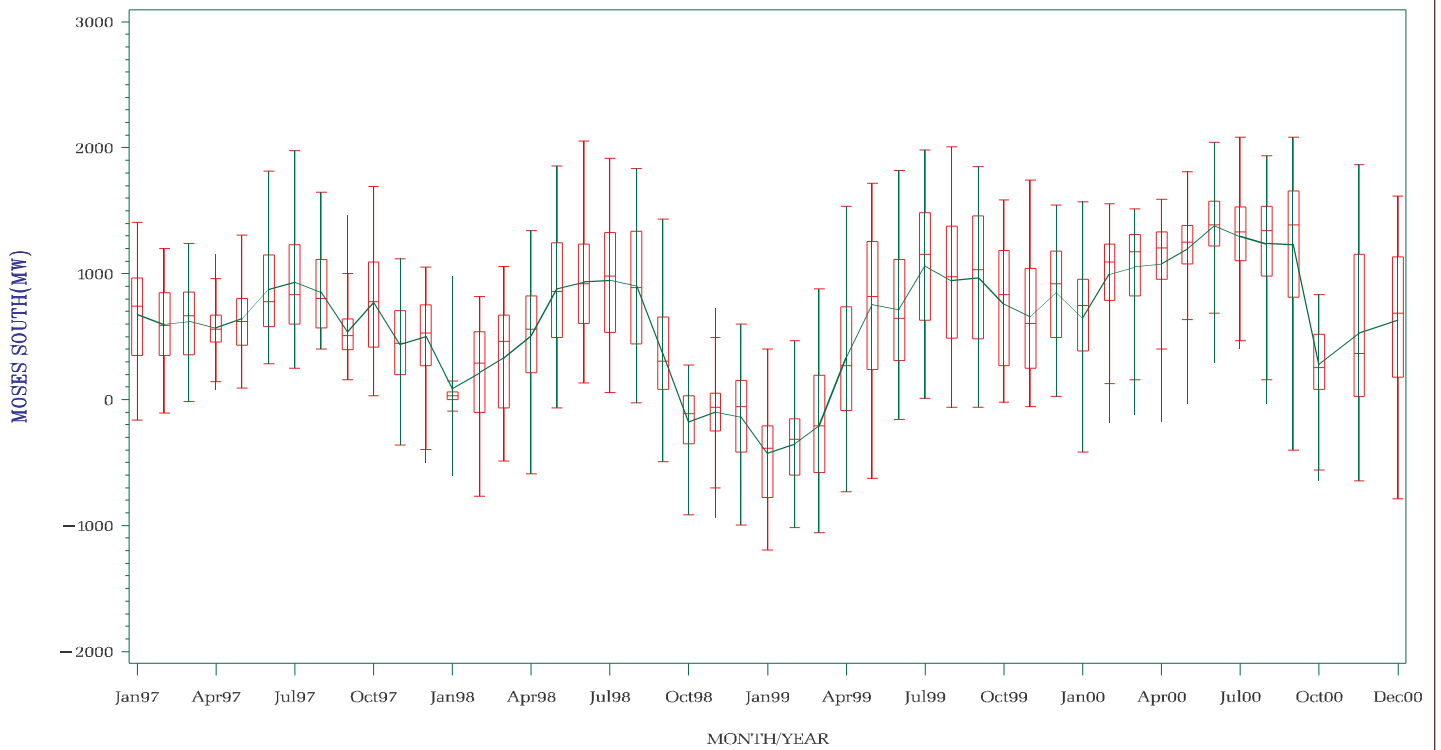
MOSES SOUTH
Adirondack – Central



1997 1998 1999 2000

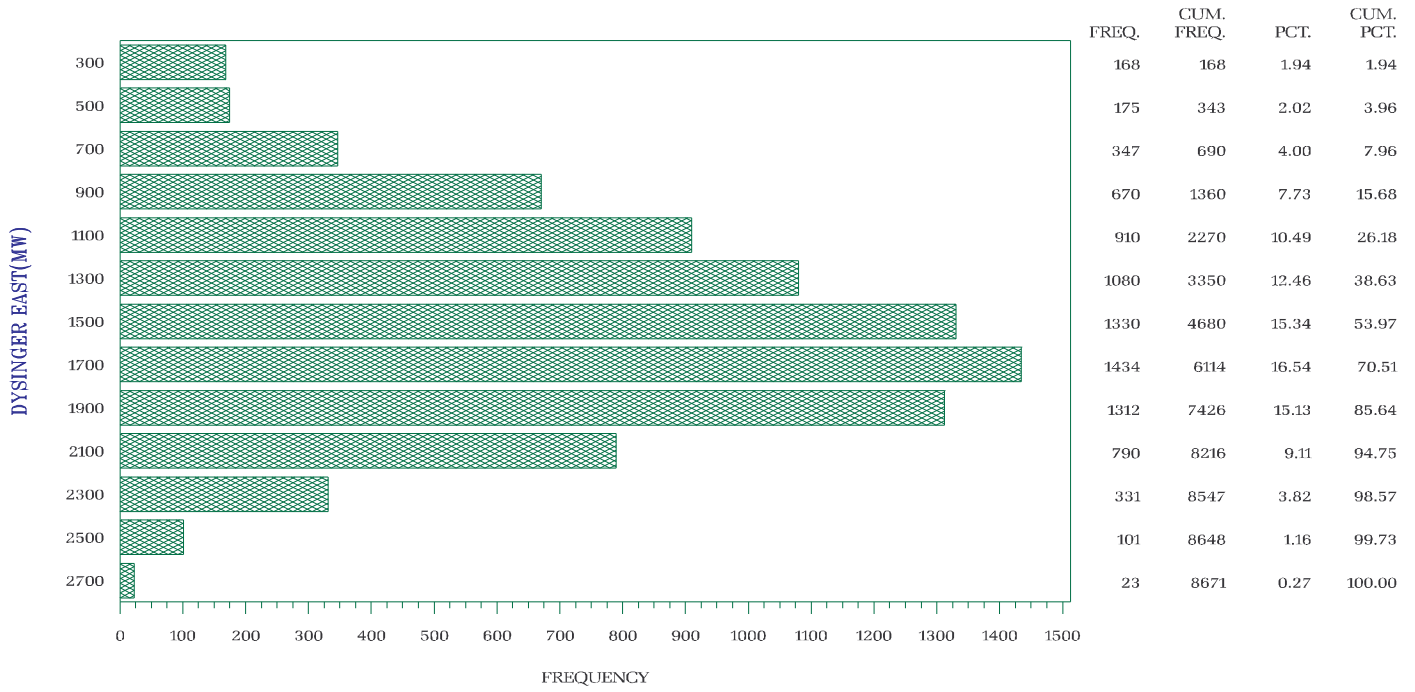
NYISO Average Monthly Interface Flow
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MOSES SOUTH
Adirondack – Central



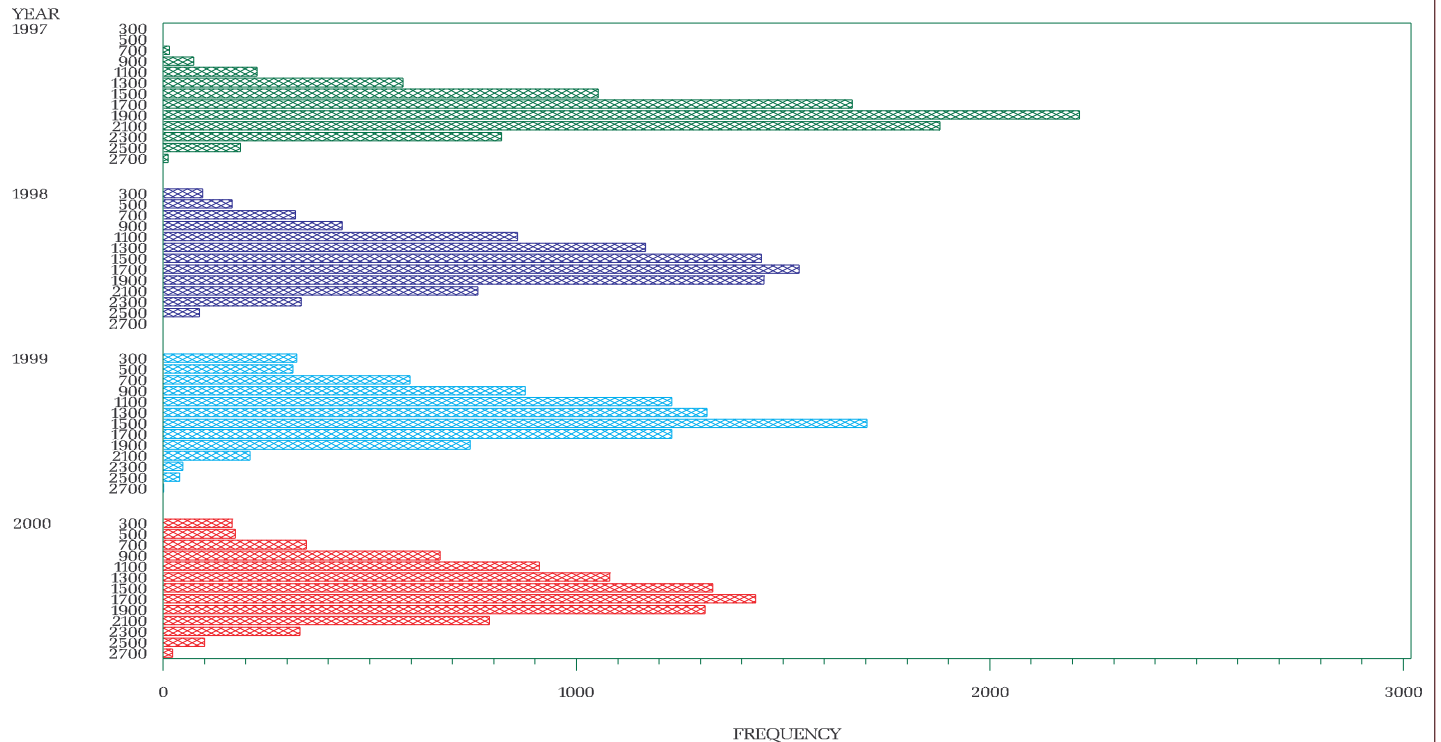
NYISO Transmission Use Statistics For January-December 2000

DYSINGER EAST
Frontier - Genesee



NYISO Transmission Use Statistics For January 1997-December 2000

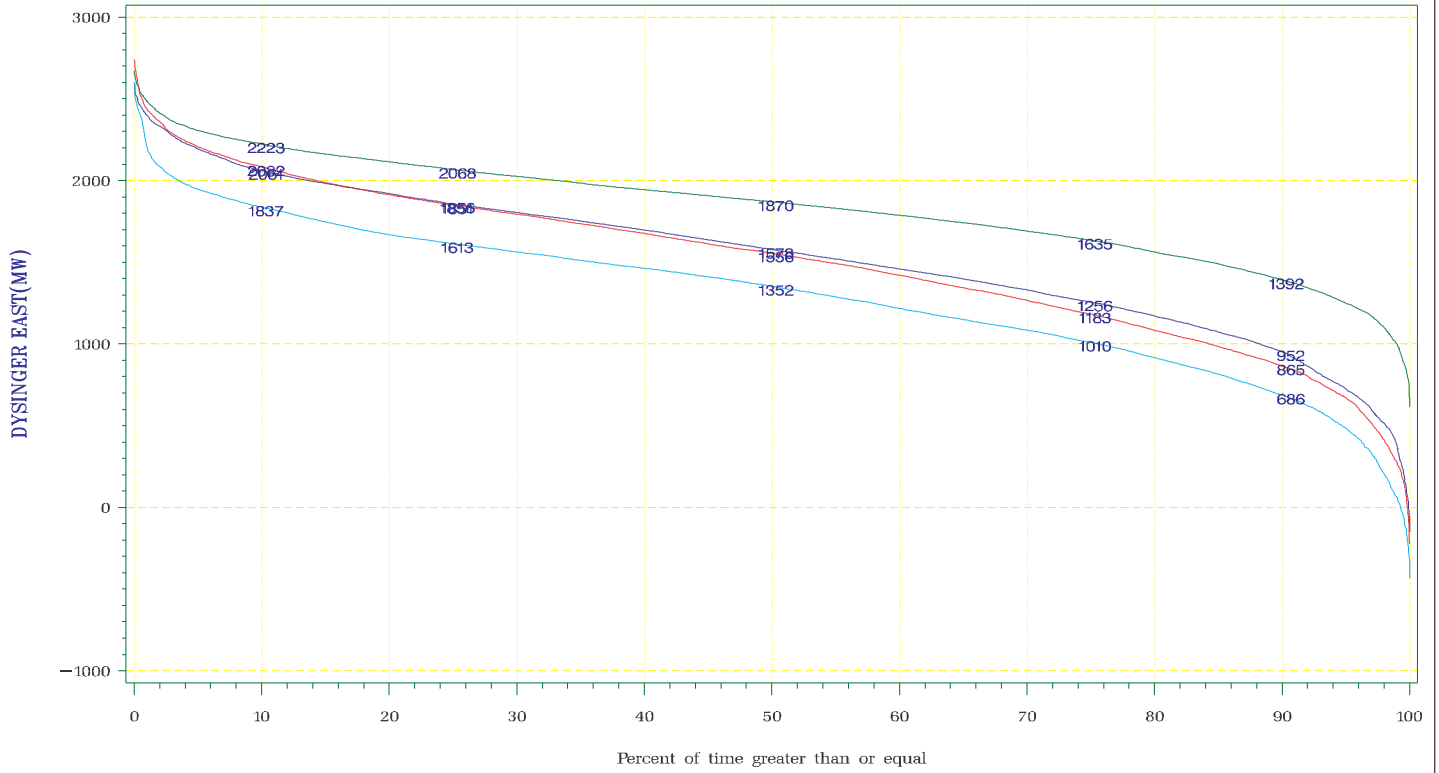
DYSINGER EAST
Frontier - Genesee



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

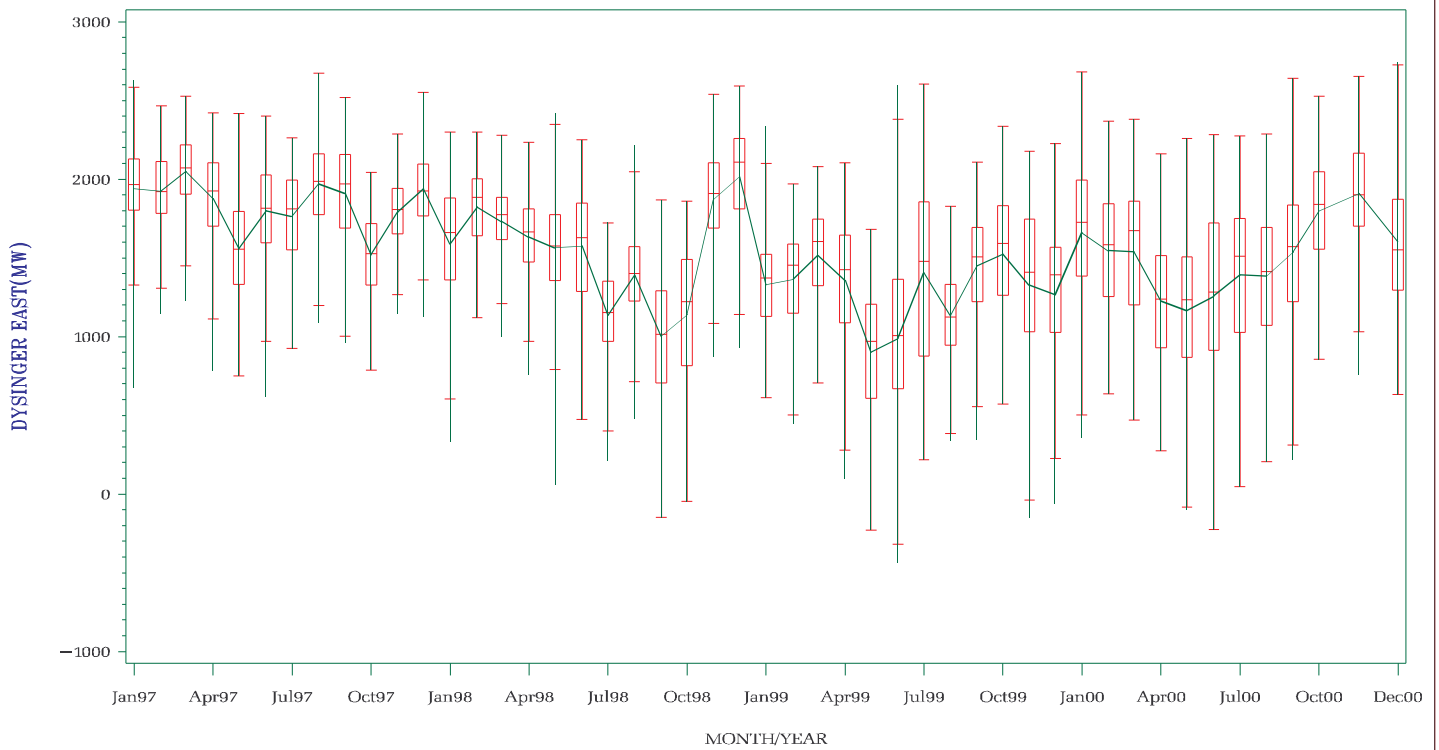
DYSINGER EAST
Frontier – Genesee



1997 1998 1999 2000

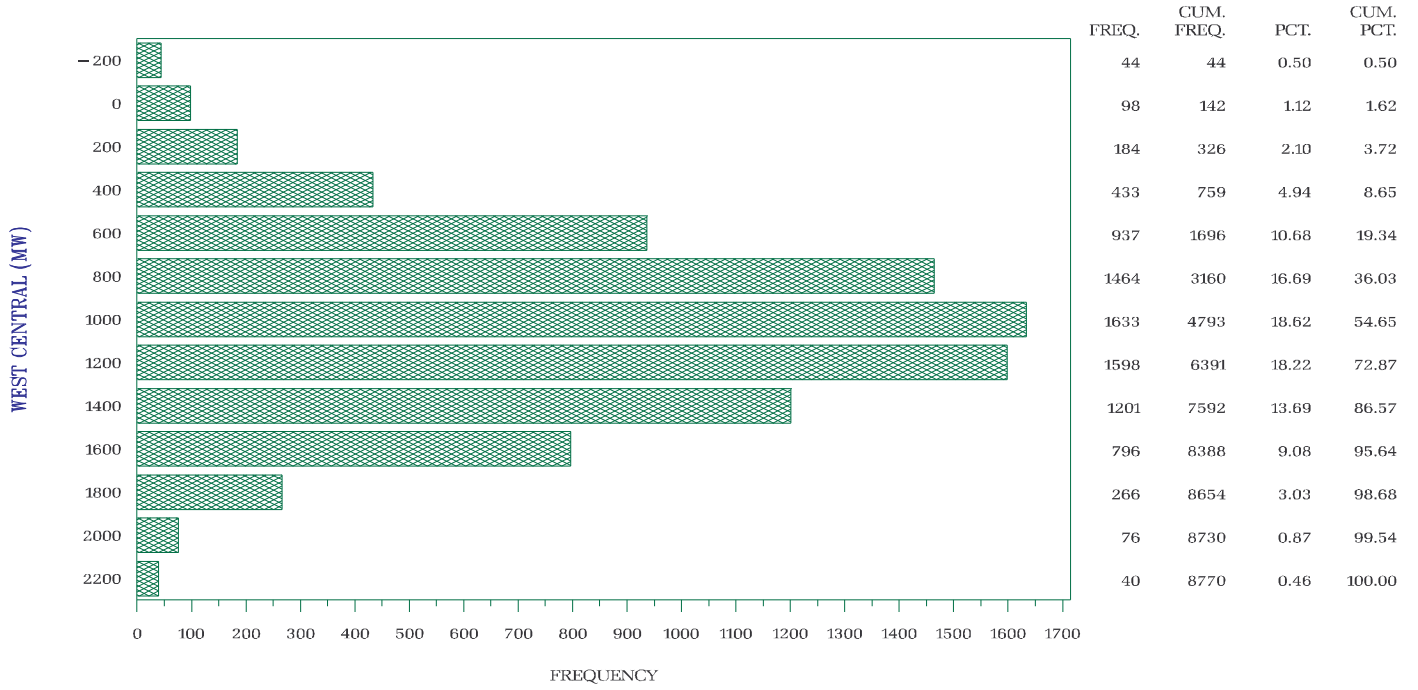
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DYSINGER EAST
Frontier – Genesee



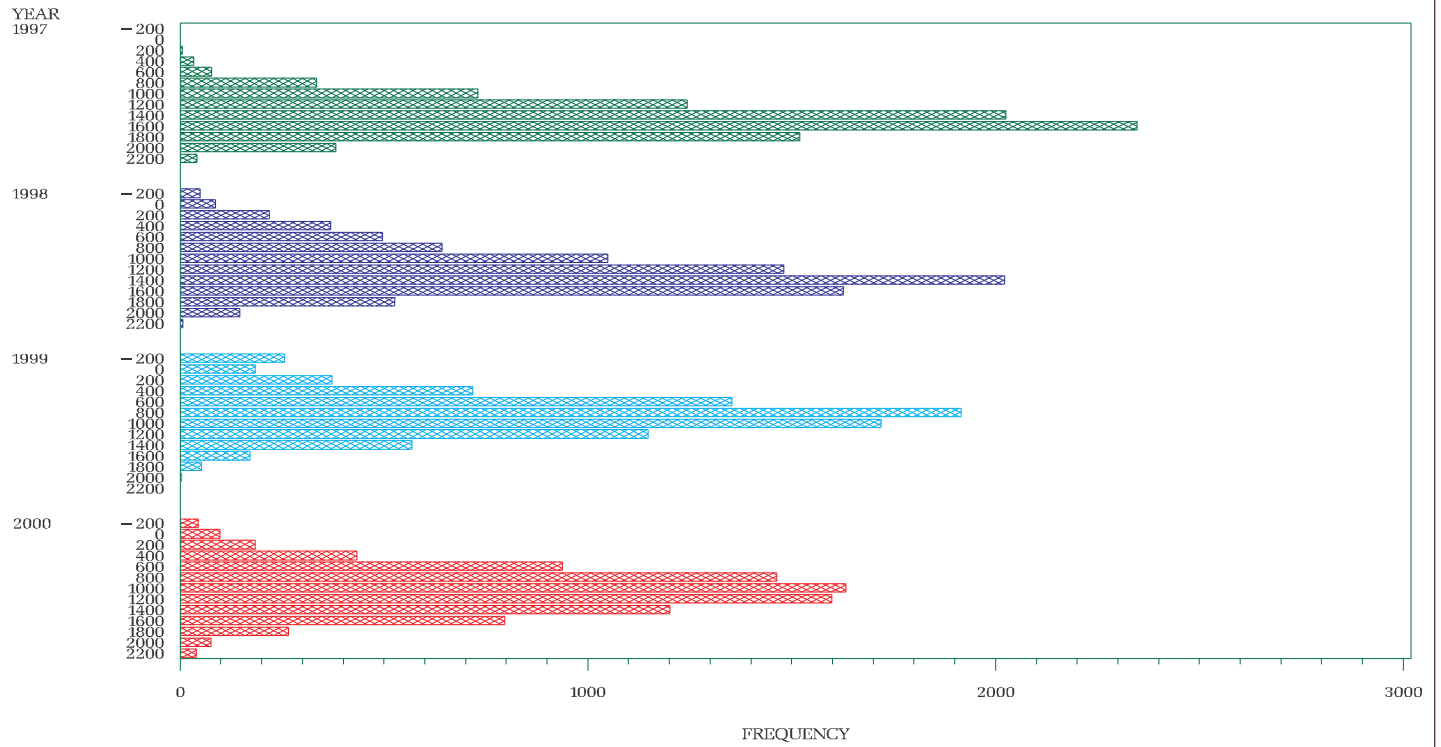
NYISO Transmission Use Statistics For January-December 2000

WEST CENTRAL
Genesee - Central



NYISO Transmission Use Statistics For January 1997-December 2000

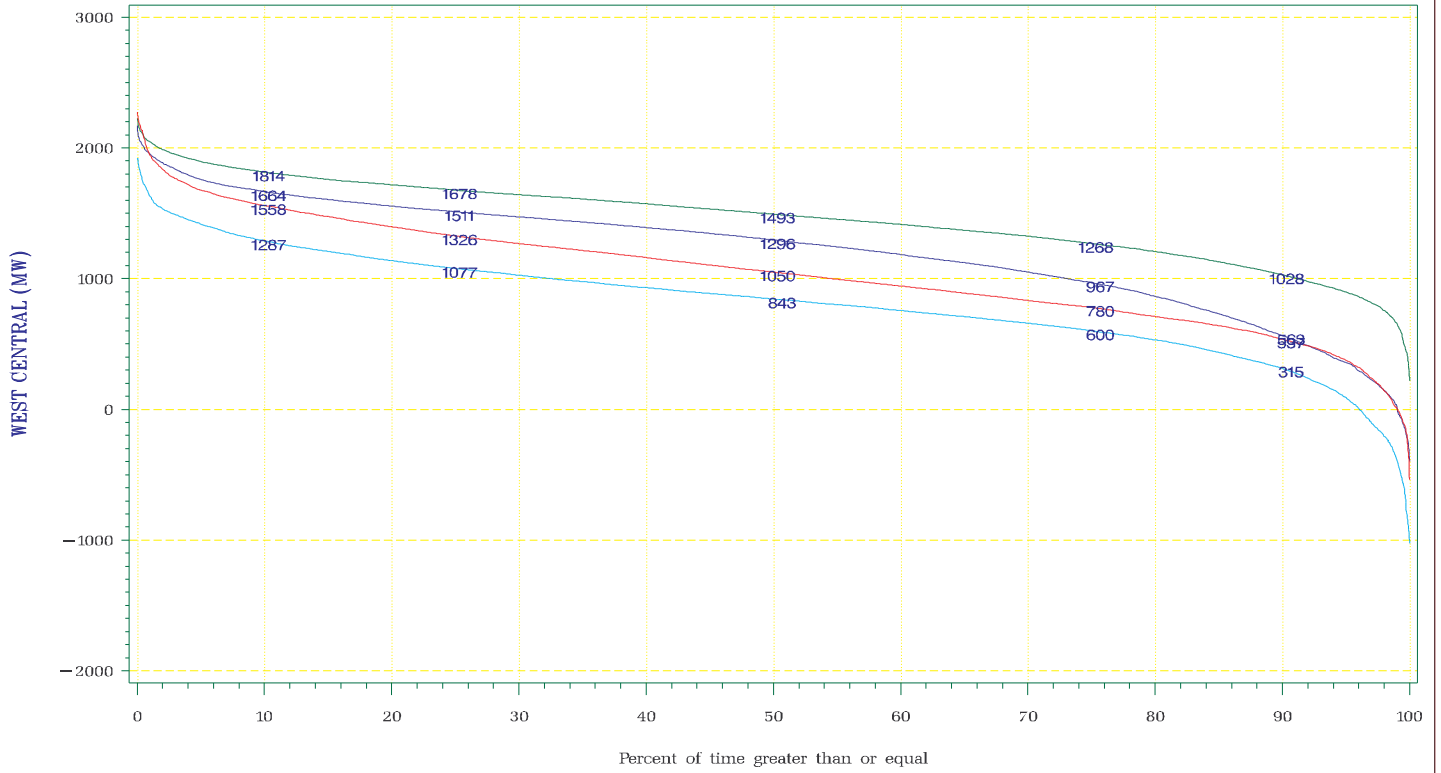
WEST CENTRAL
Genesee - Central



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

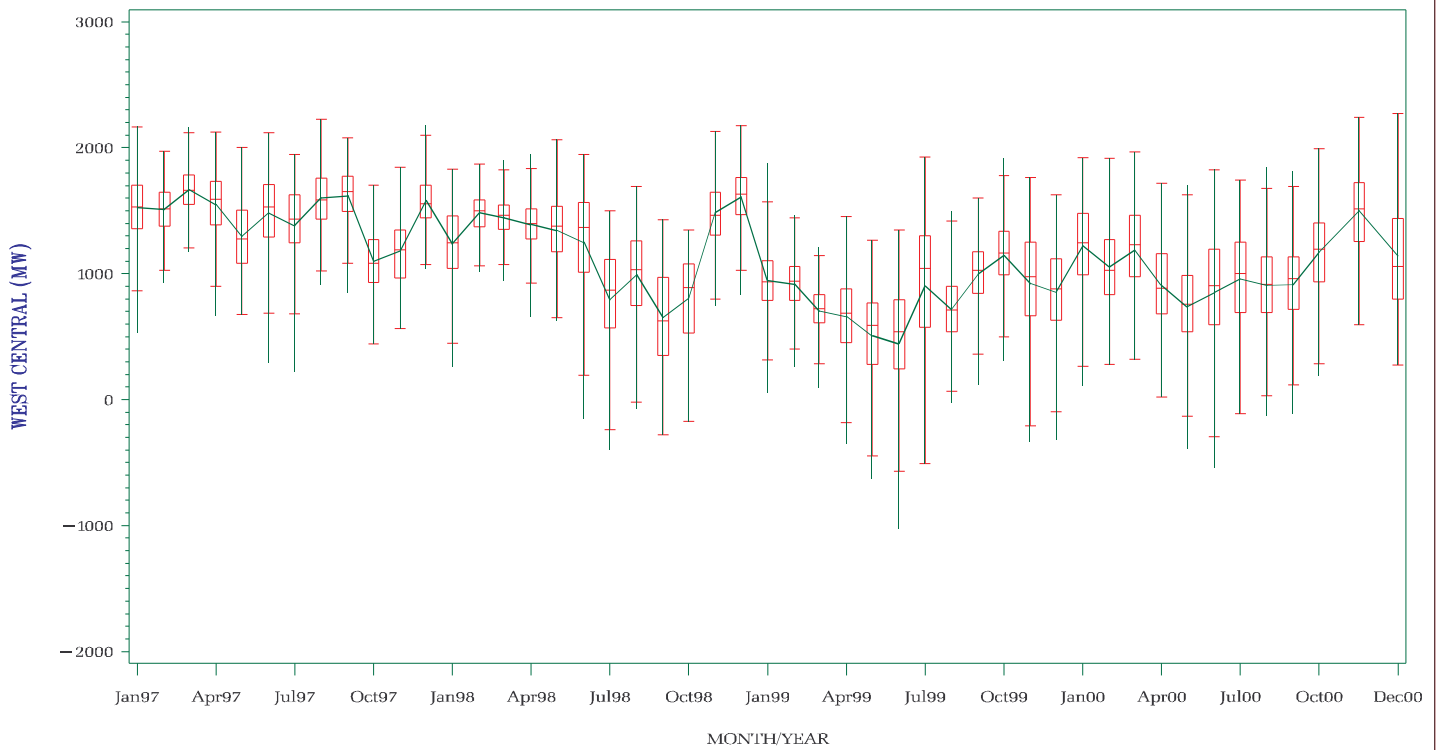
WEST CENTRAL
Genesee – Central



1997 1998 1999 2000

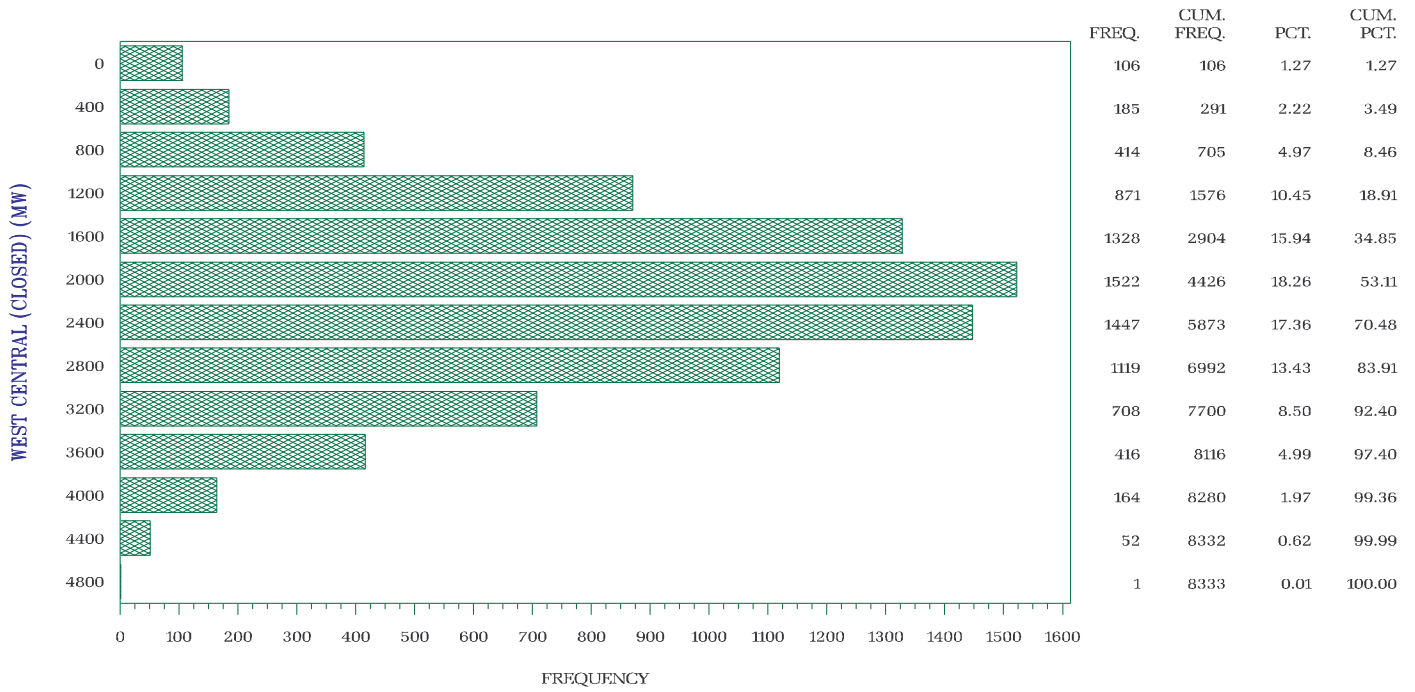
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WEST CENTRAL
Genesee – Central



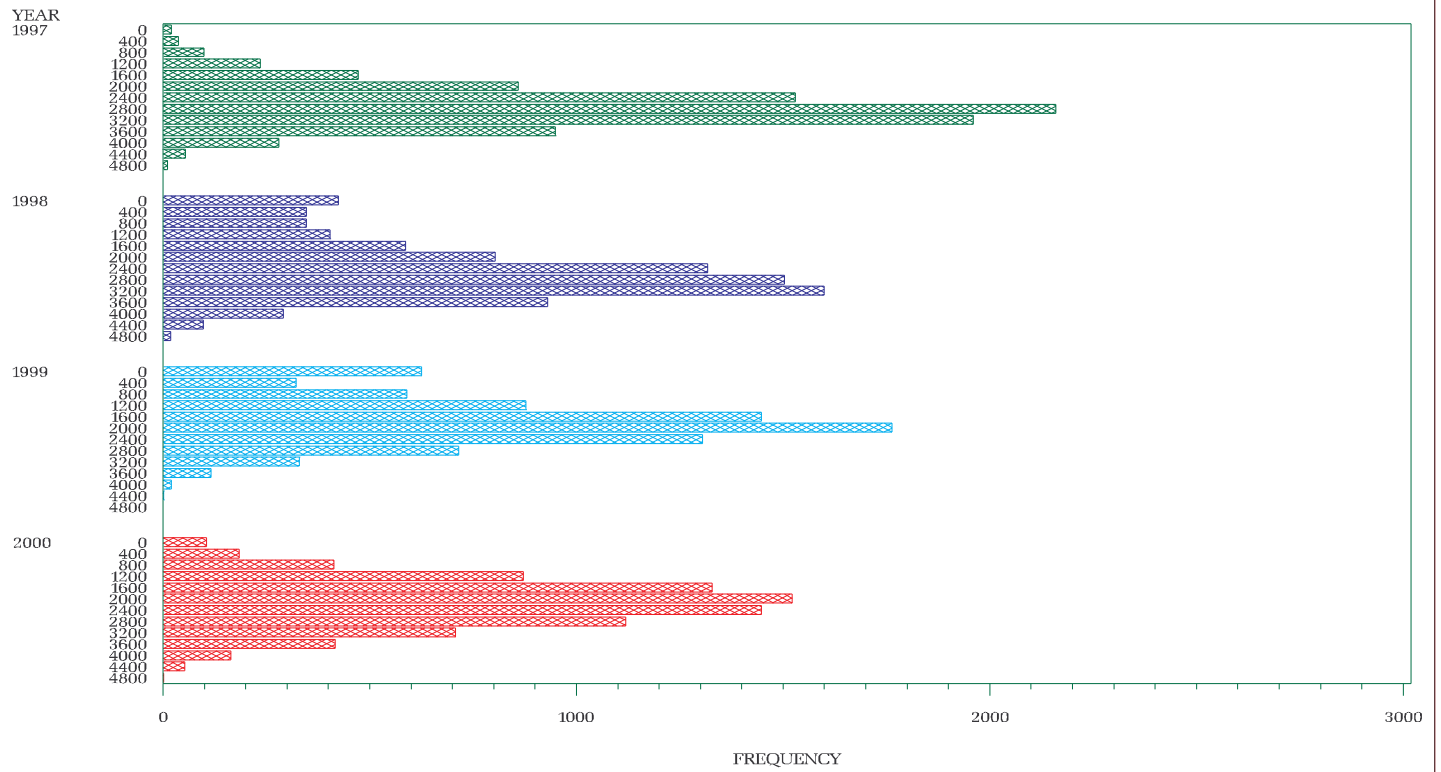
NYISO Transmission Use Statistics For January–December 2000

WEST CENTRAL (CLOSED)



NYISO Transmission Use Statistics For January 1997–December 2000

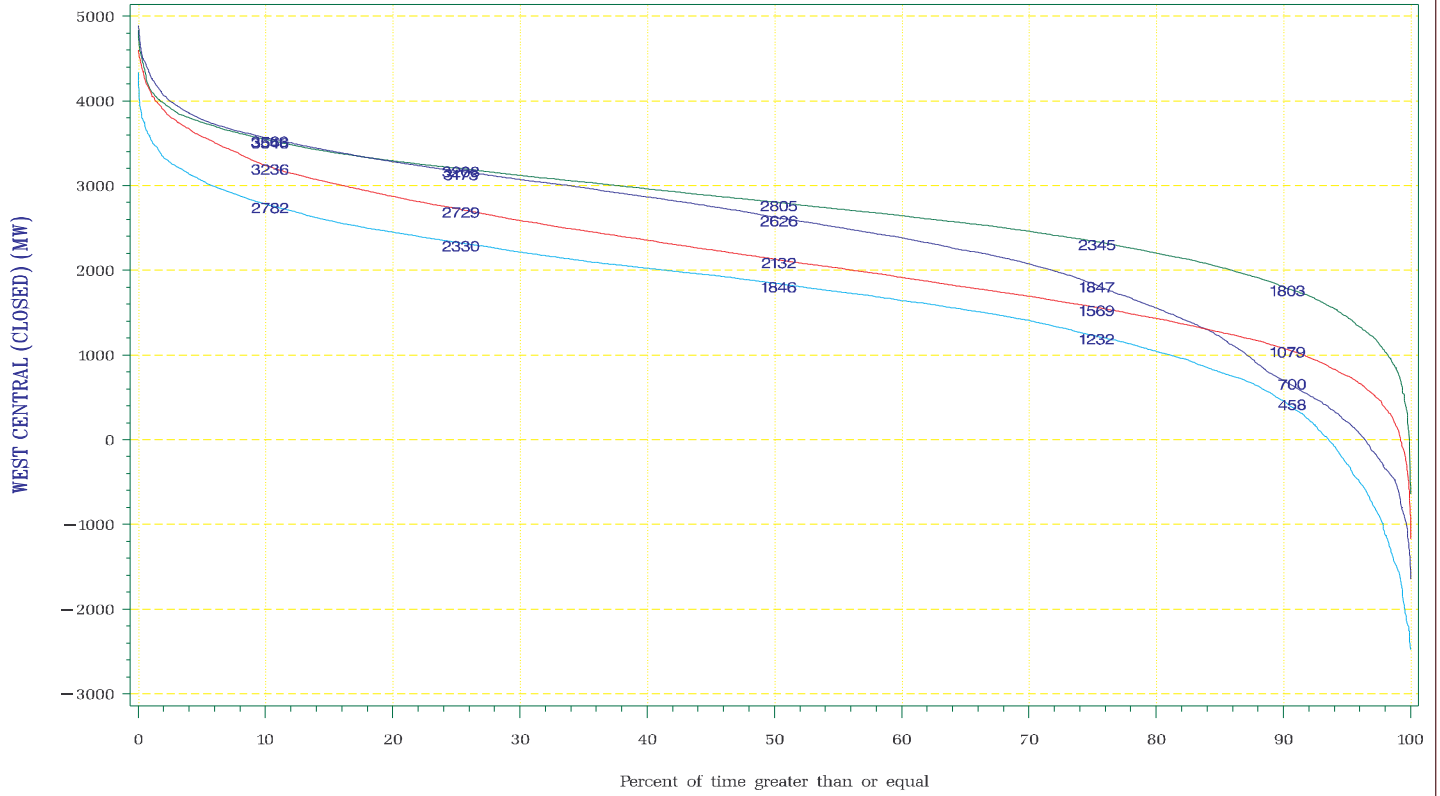
WEST CENTRAL (CLOSED)



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

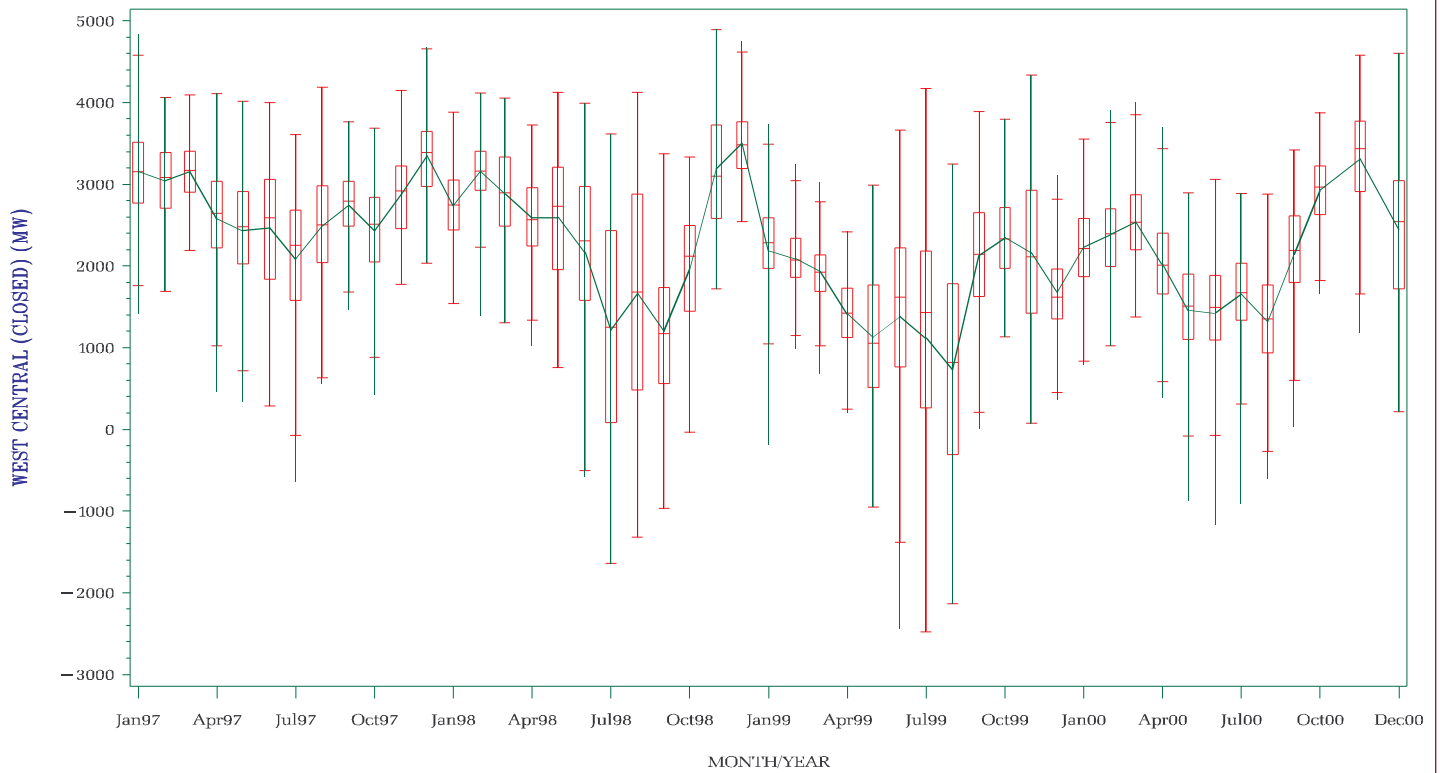
WEST CENTRAL (CLOSED)



1997 1998 1999 2000

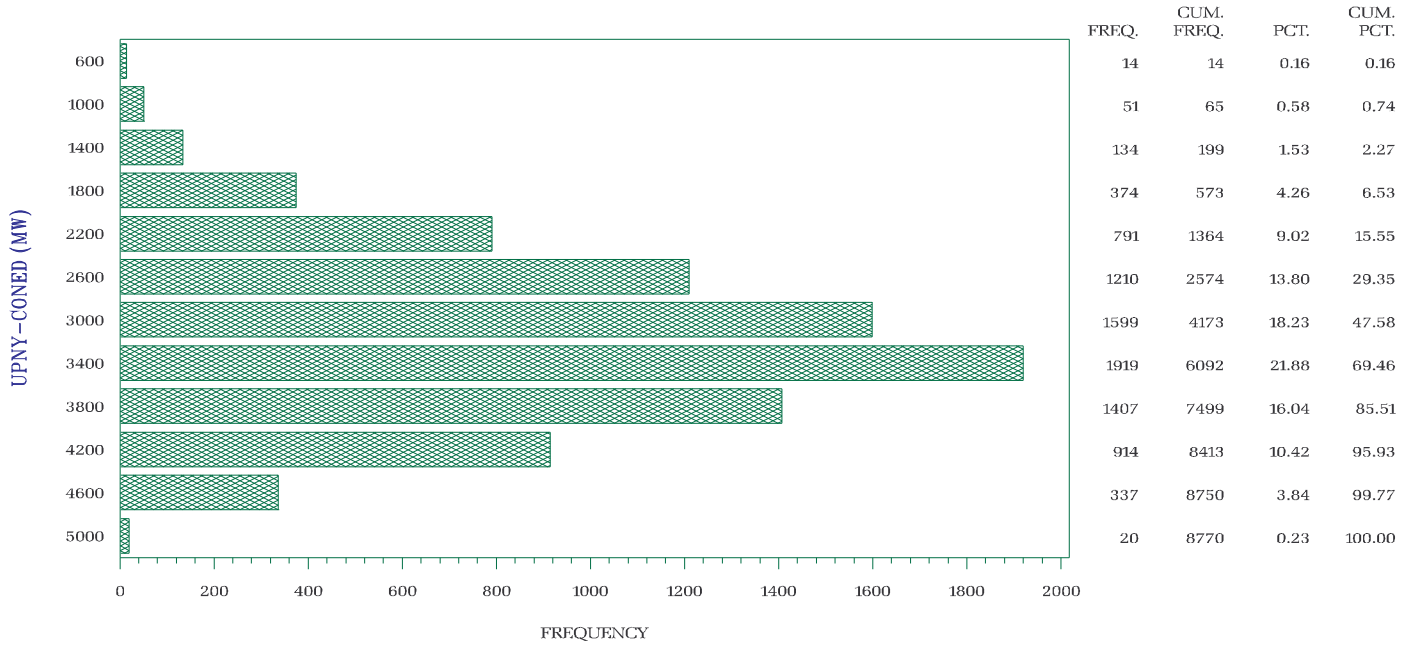
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

WEST CENTRAL (CLOSED)



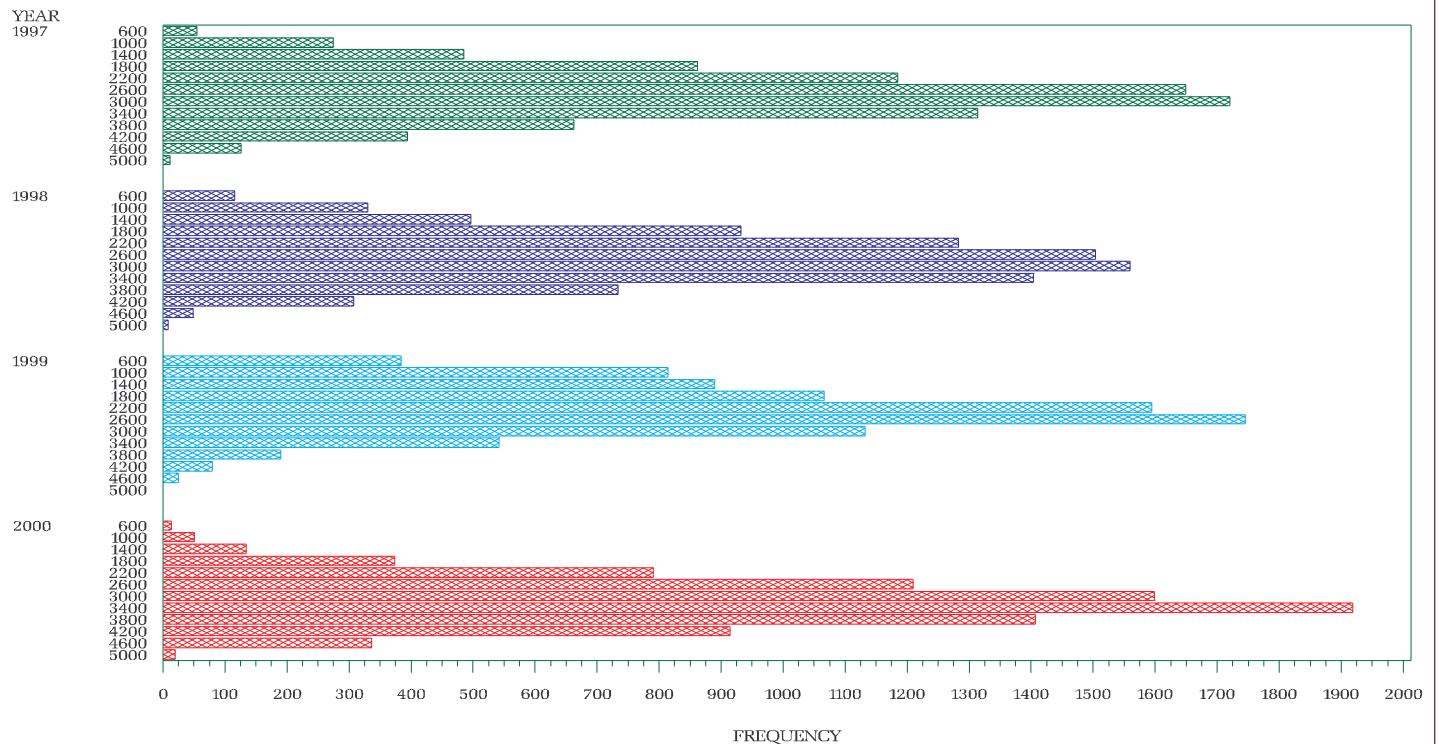
NYISO Transmission Use Statistics For January-December 2000

UPNY - CONED
Capital/Mid Hudson - Westchester



NYISO Transmission Use Statistics For January 1997-December 2000

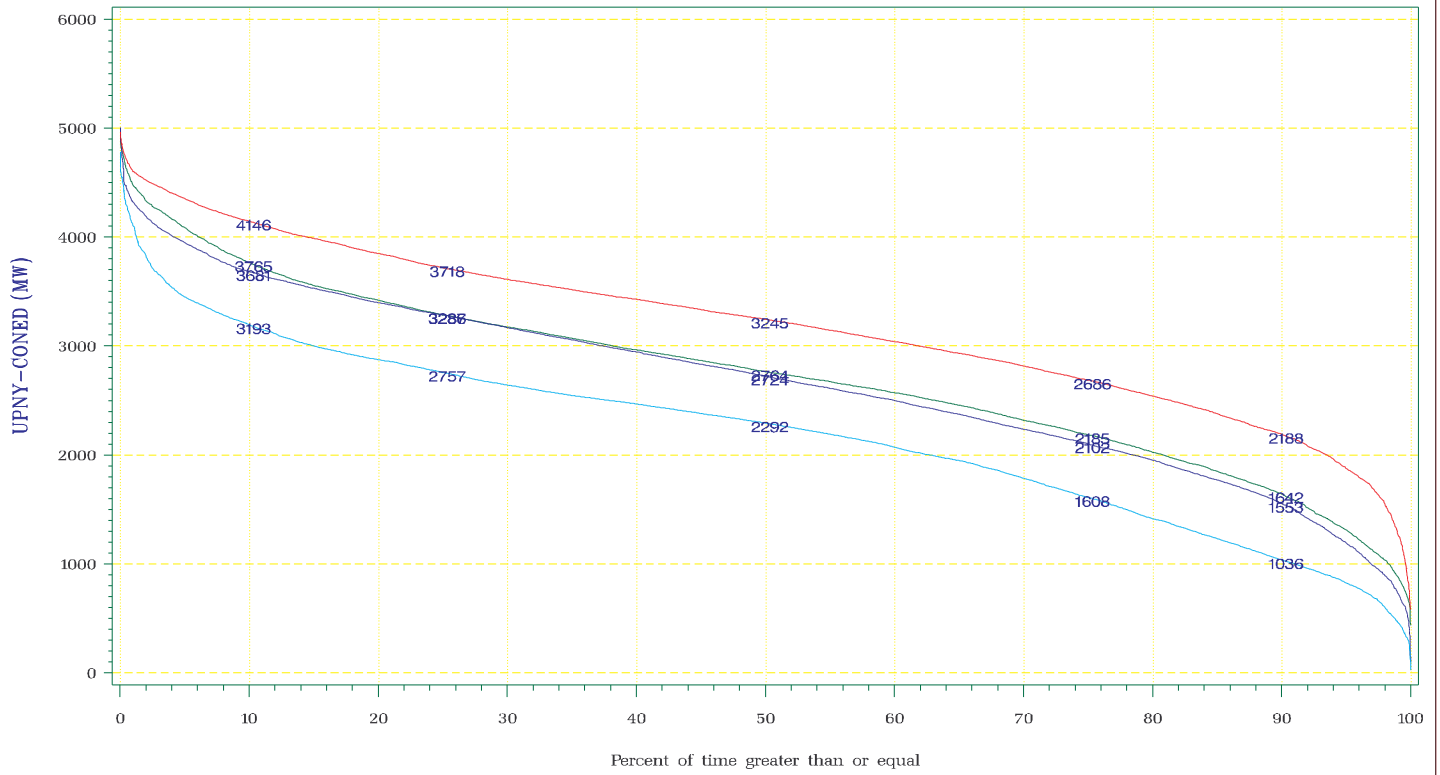
UPNY - CONED
Capital/Mid Hudson - Westchester



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

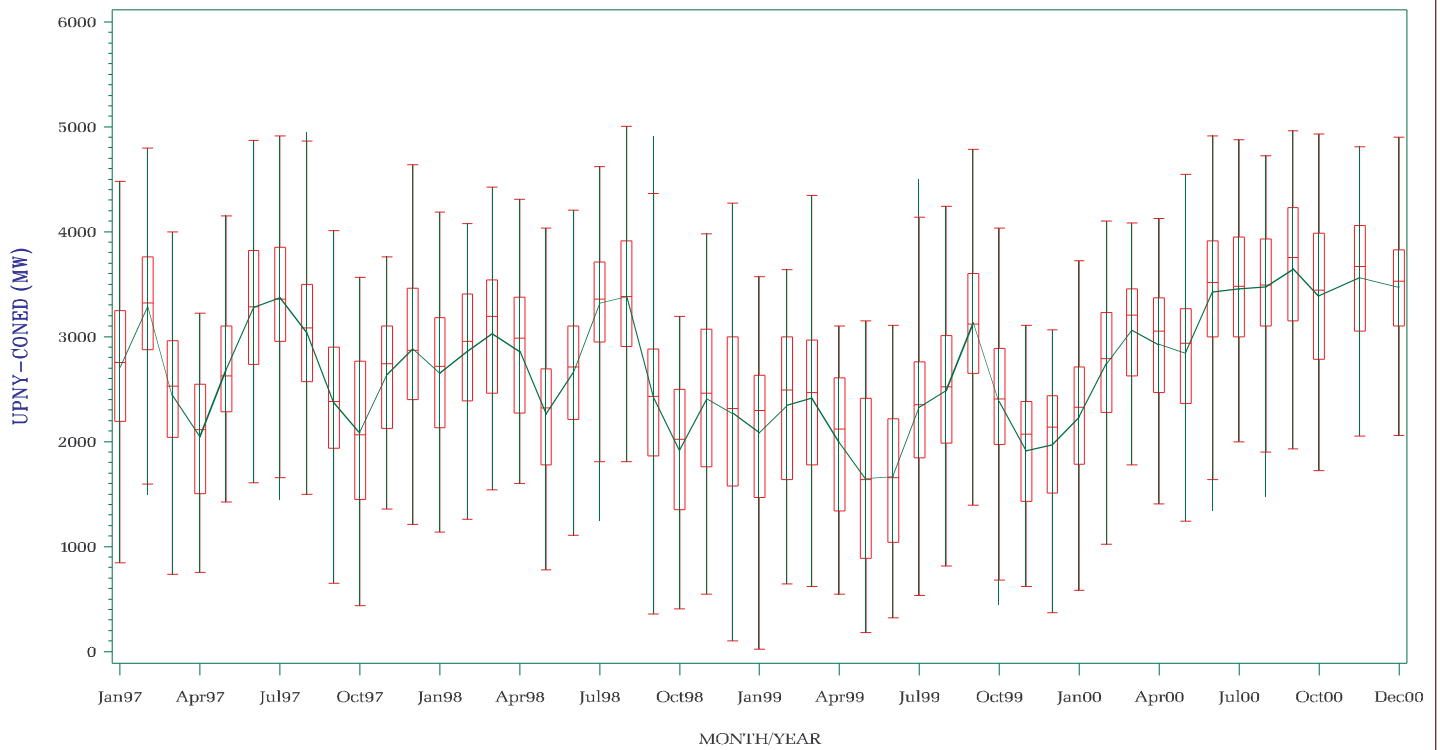
UPNY – CONED
Capital/Mid Hudson – Westchester



1997 1998 1999 2000

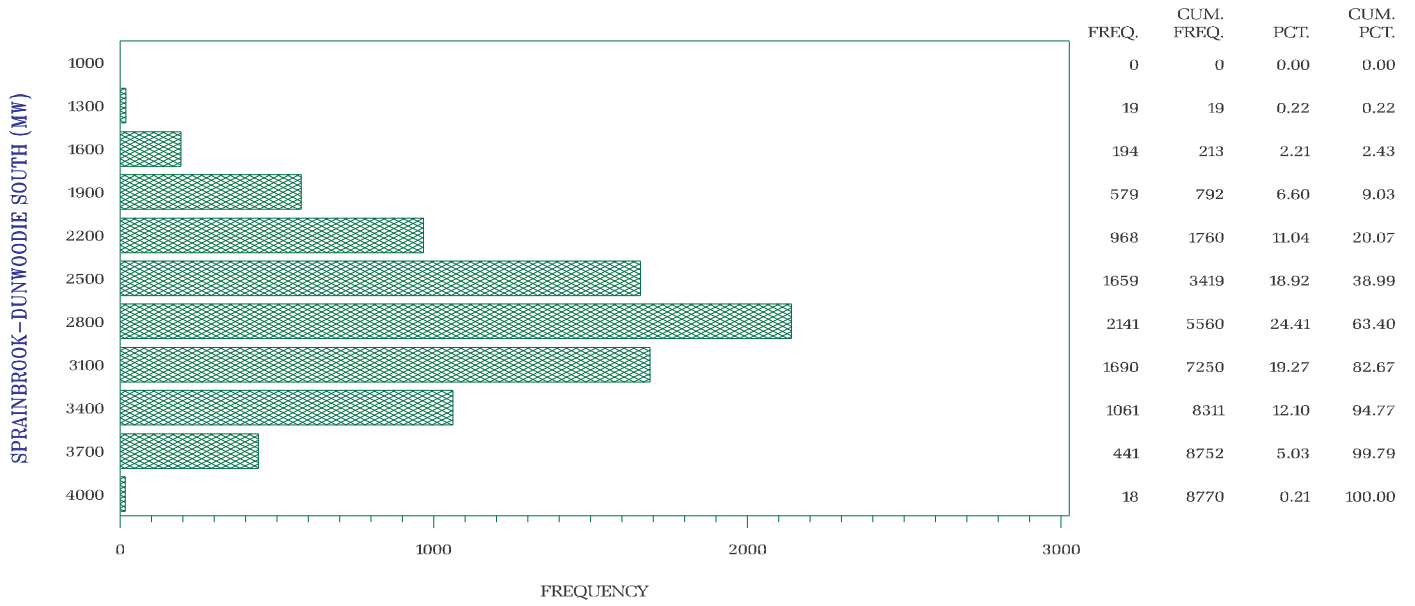
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

UPNY – CONED
Capital/Mid Hudson – Westchester



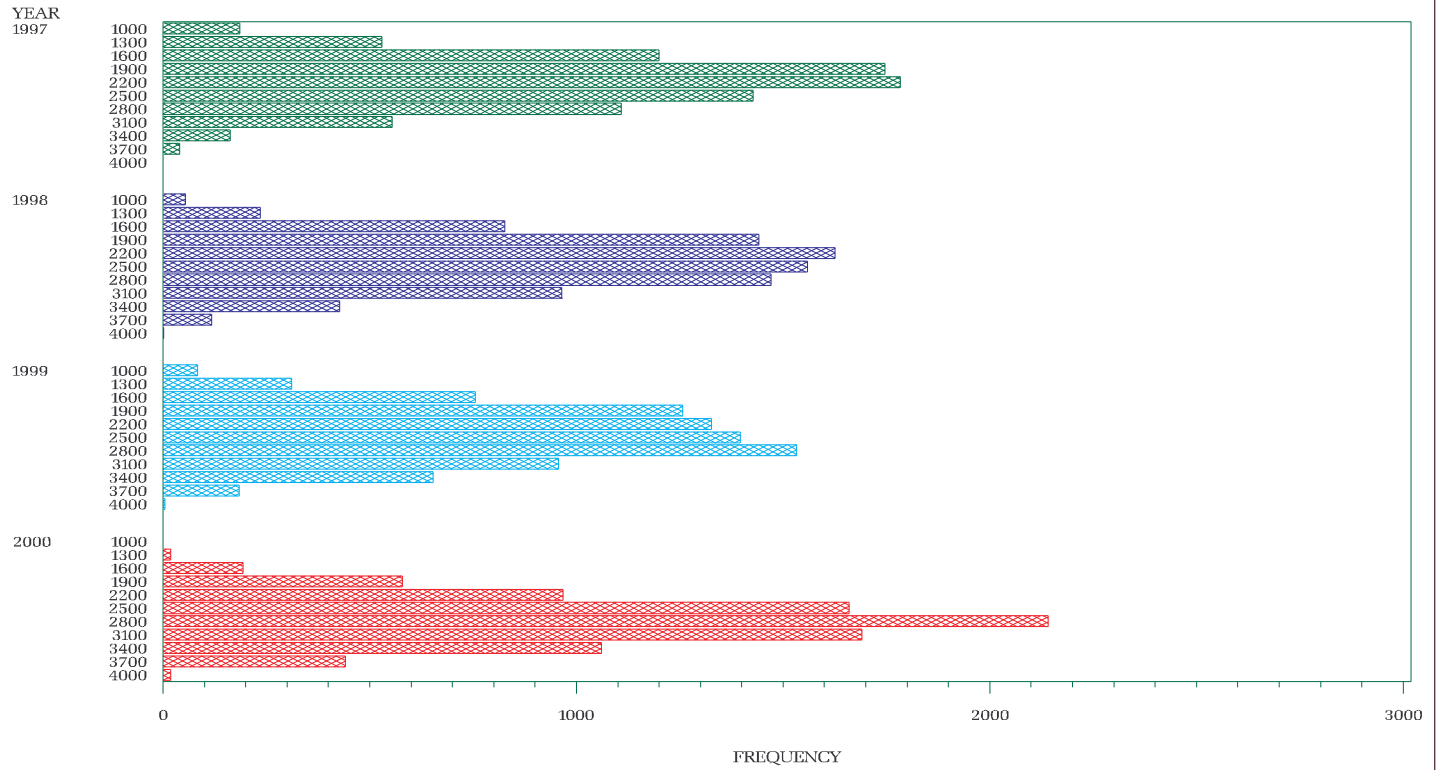
NYISO Transmission Use Statistics For January-December 2000

SPRAINBROOK – DUNWOODIE SOUTH



NYISO Transmission Use Statistics For January 1997-December 2000

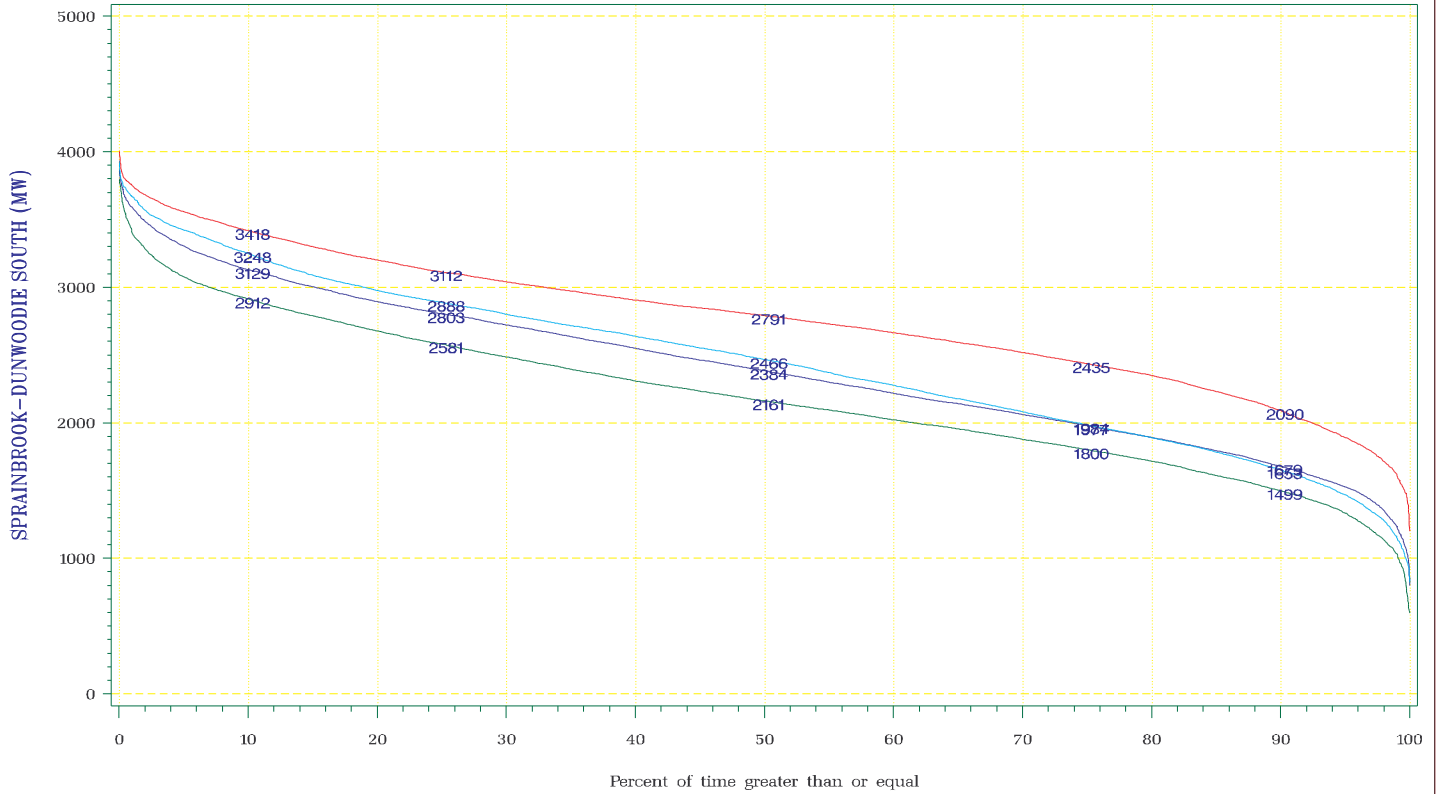
SPRAINBROOK – DUNWOODIE SOUTH



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

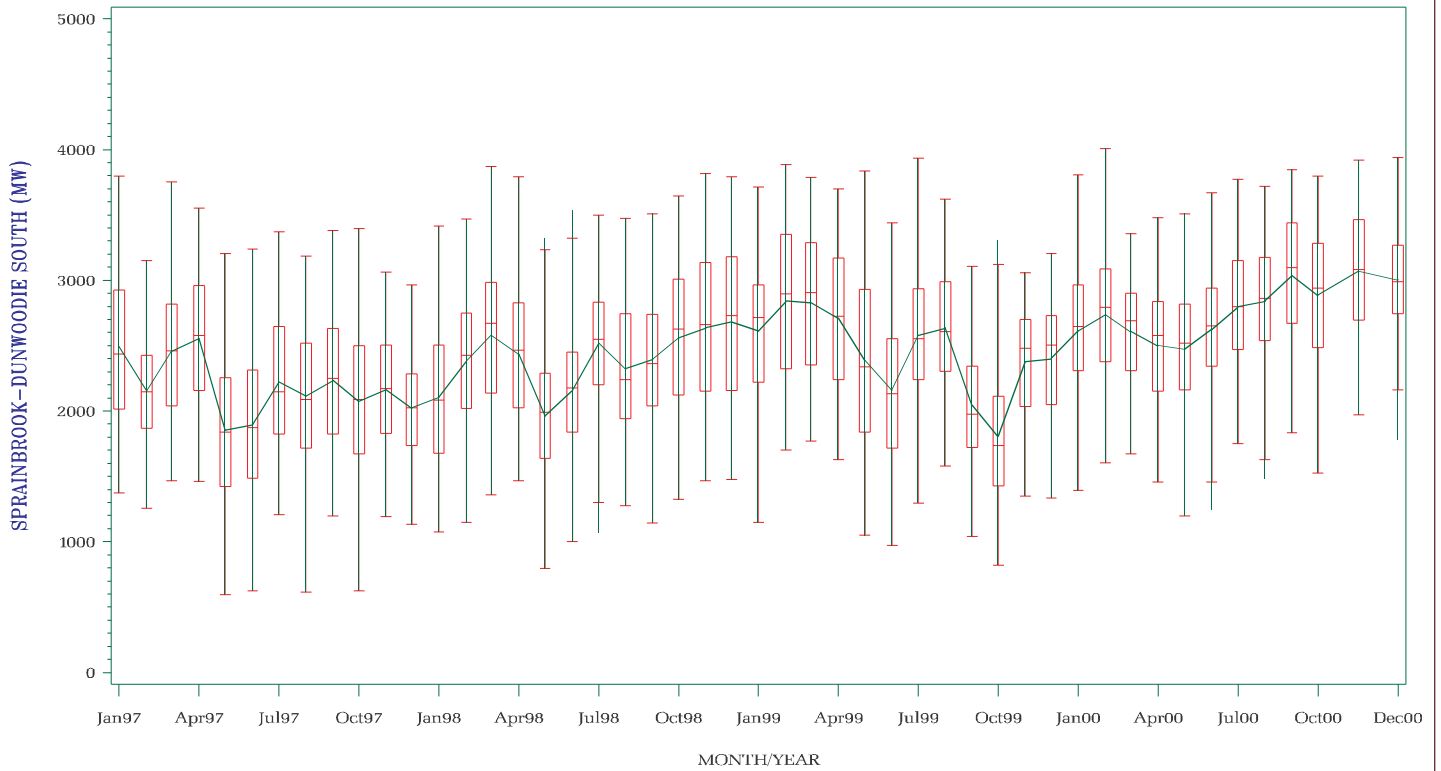
SPRAINBROOK – DUNWOODIE SOUTH



1997 1998 1999 2000

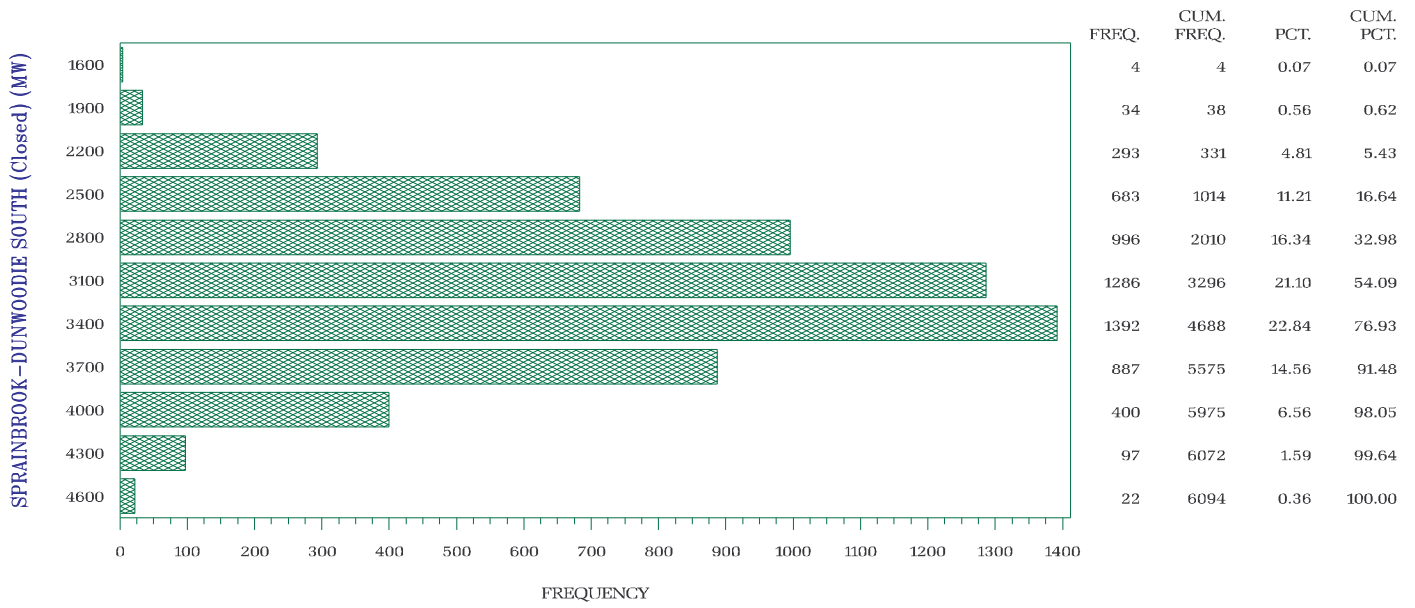
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

SPRAINBROOK – DUNWOODIE SOUTH



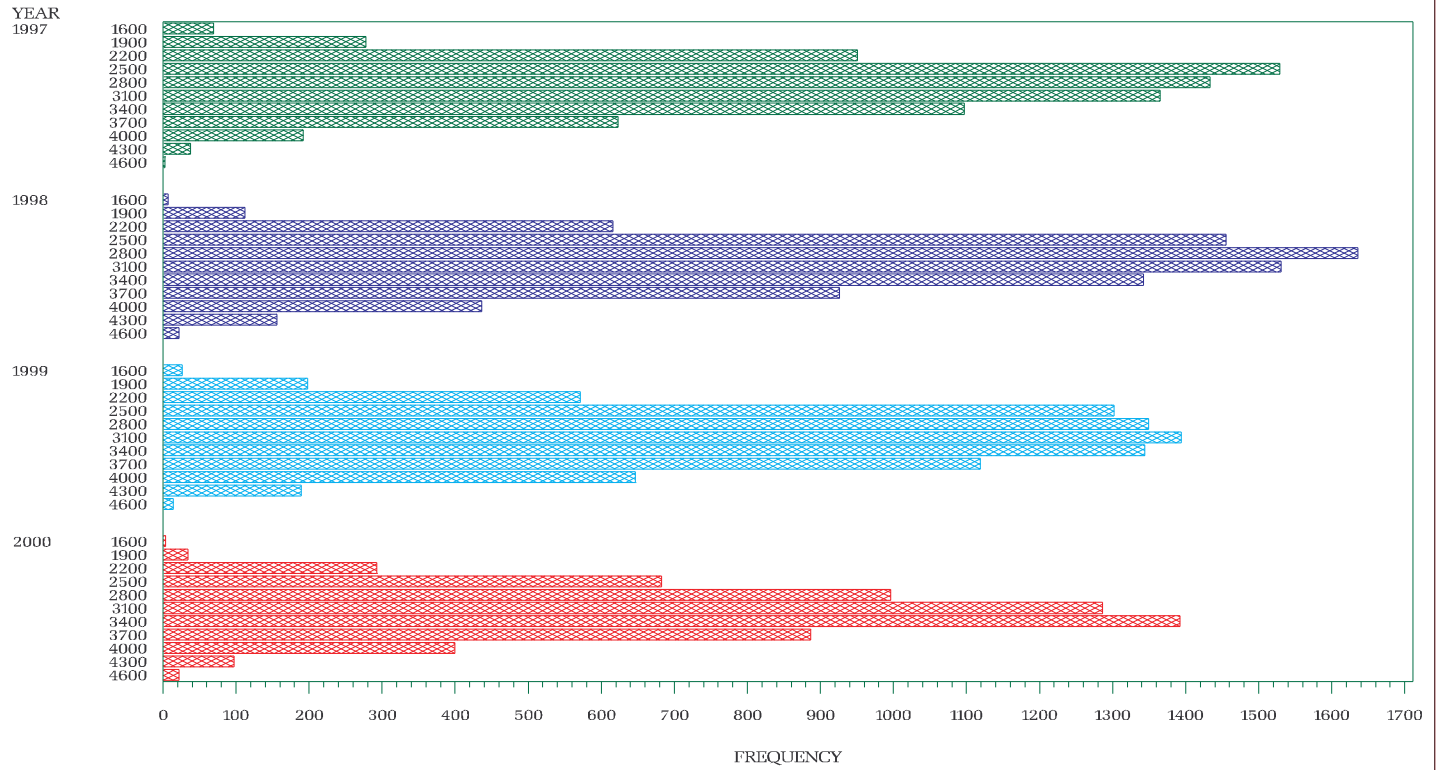
NYISO Transmission Use Statistics For January–December 2000

SPRAINBROOK – DUNWOODIE SOUTH (Closed)



NYISO Transmission Use Statistics For January 1997–December 2000

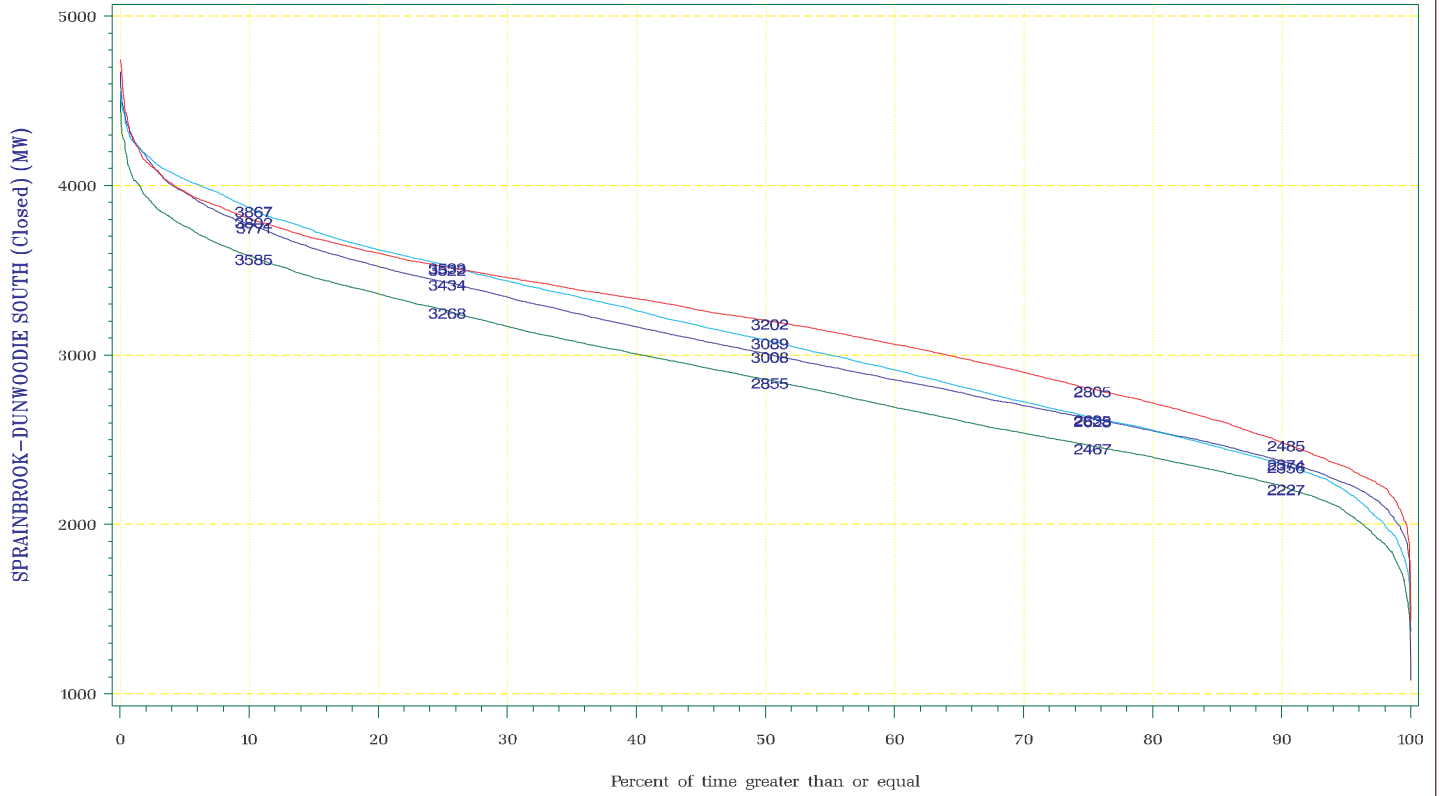
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1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

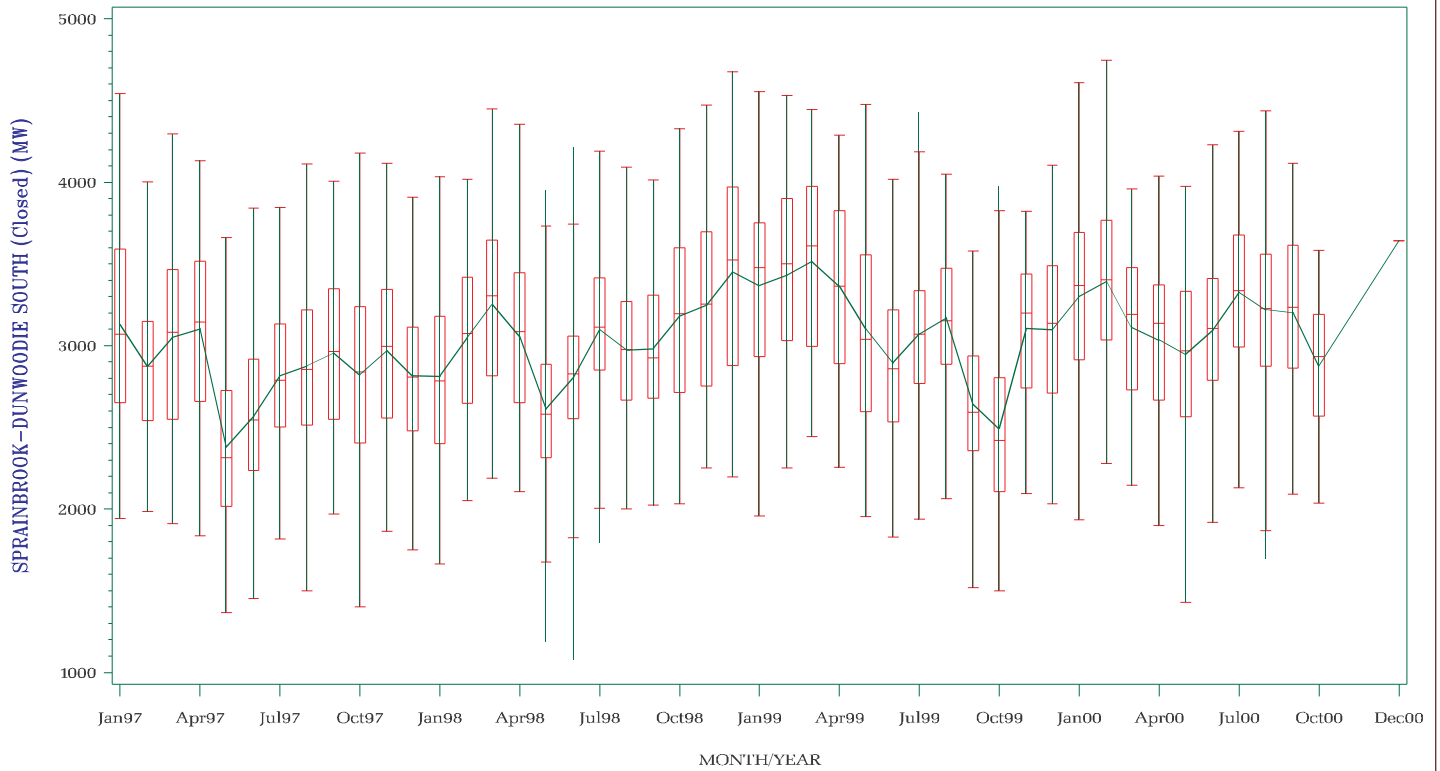
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1997 1998 1999 2000

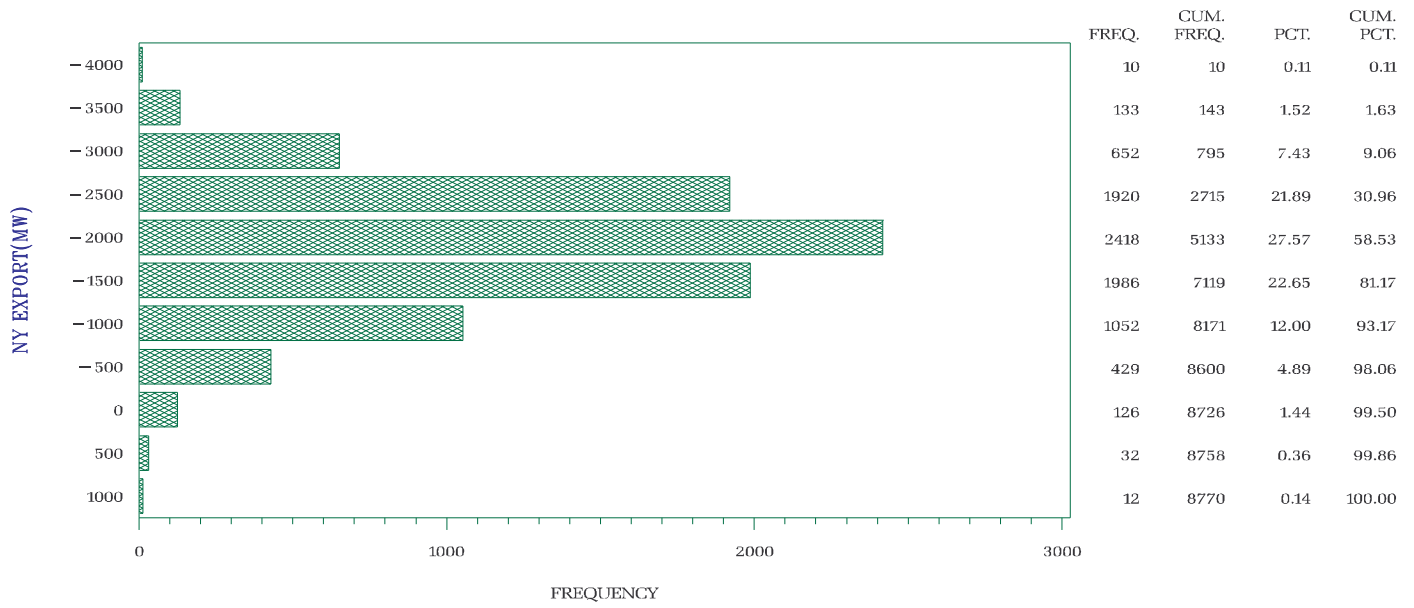
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

SPRAINBROOK – DUNWOODIE SOUTH (Closed)



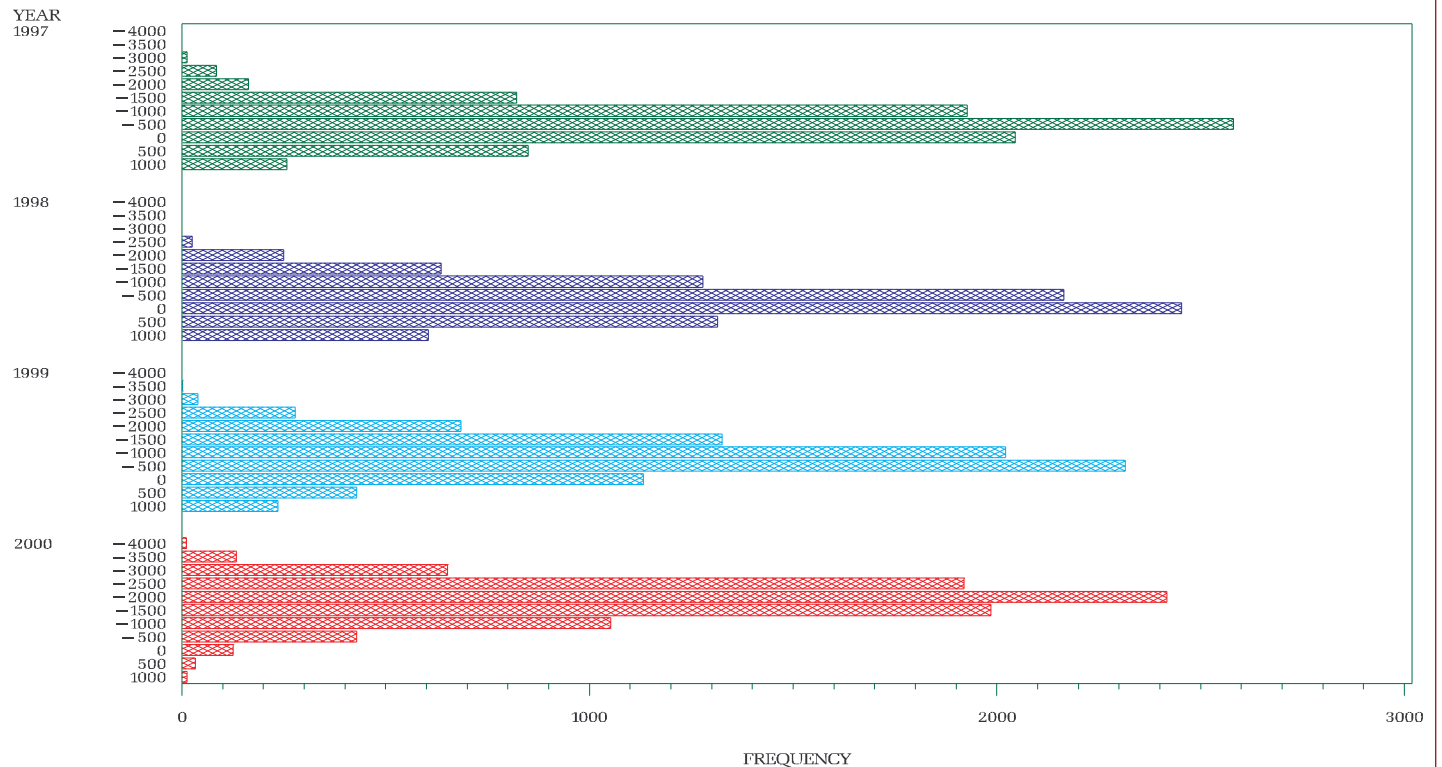
NYISO Transmission Use Statistics For January-December 2000

NY EXPORT



NYISO Transmission Use Statistics For January 1997-December 2000

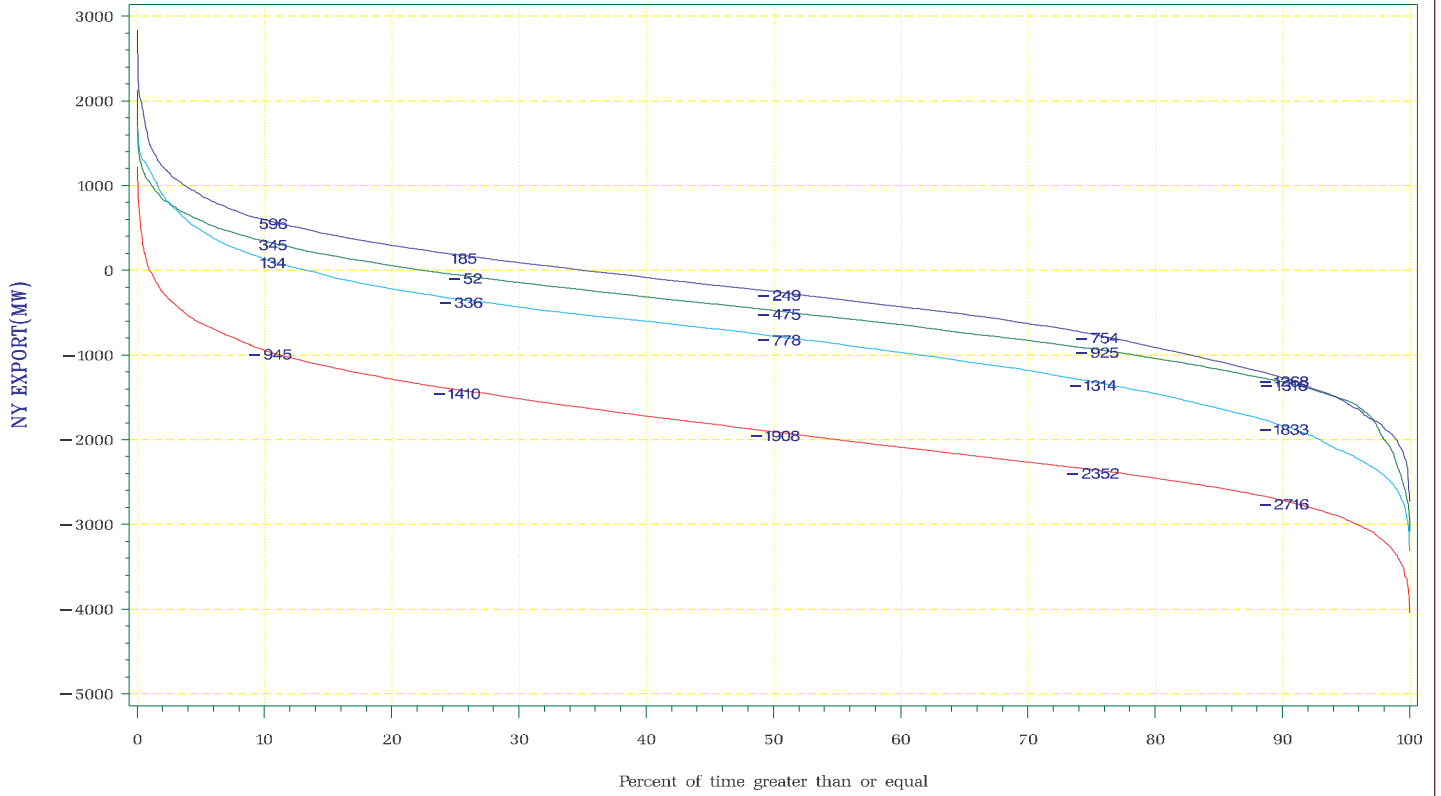
NY EXPORT



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

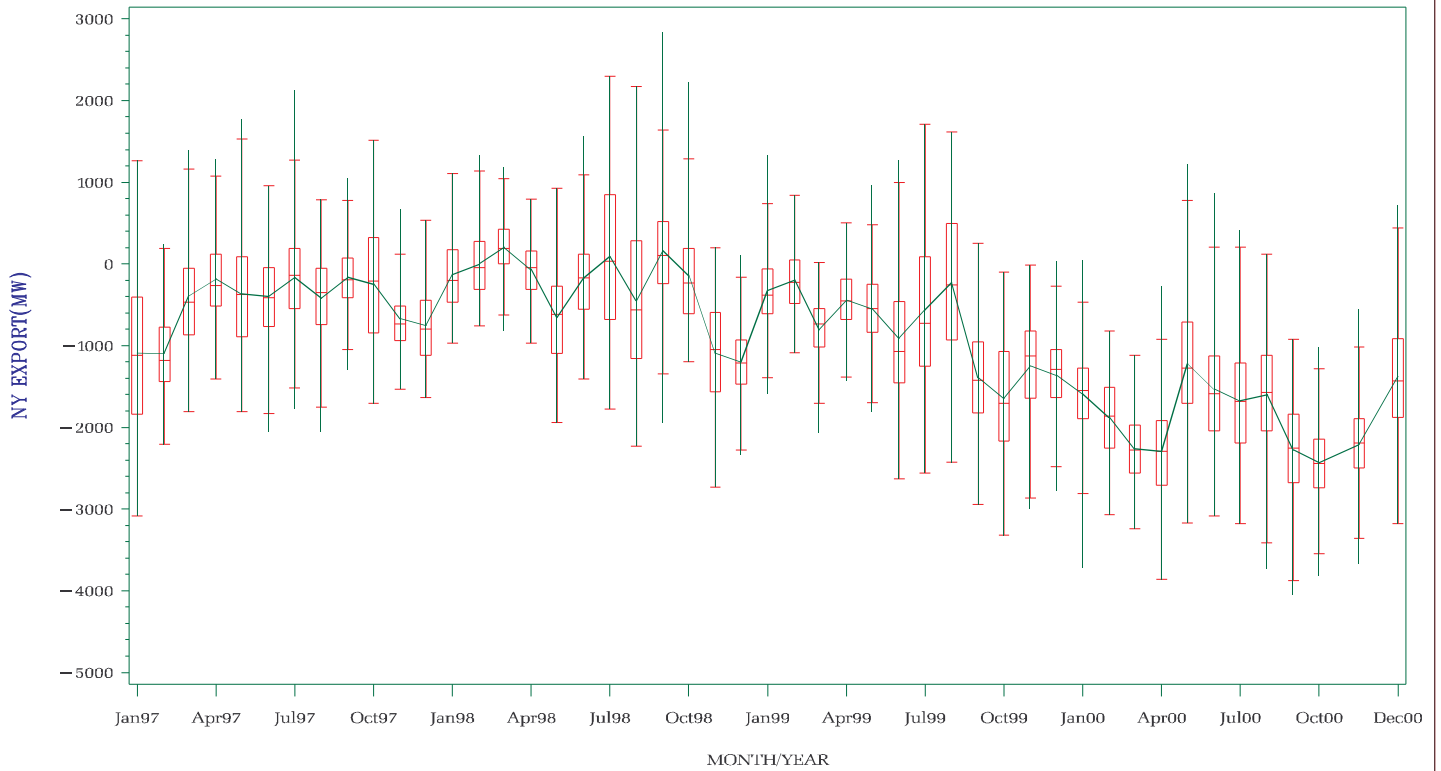
NY EXPORT



1997 1998 1999 2000

NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

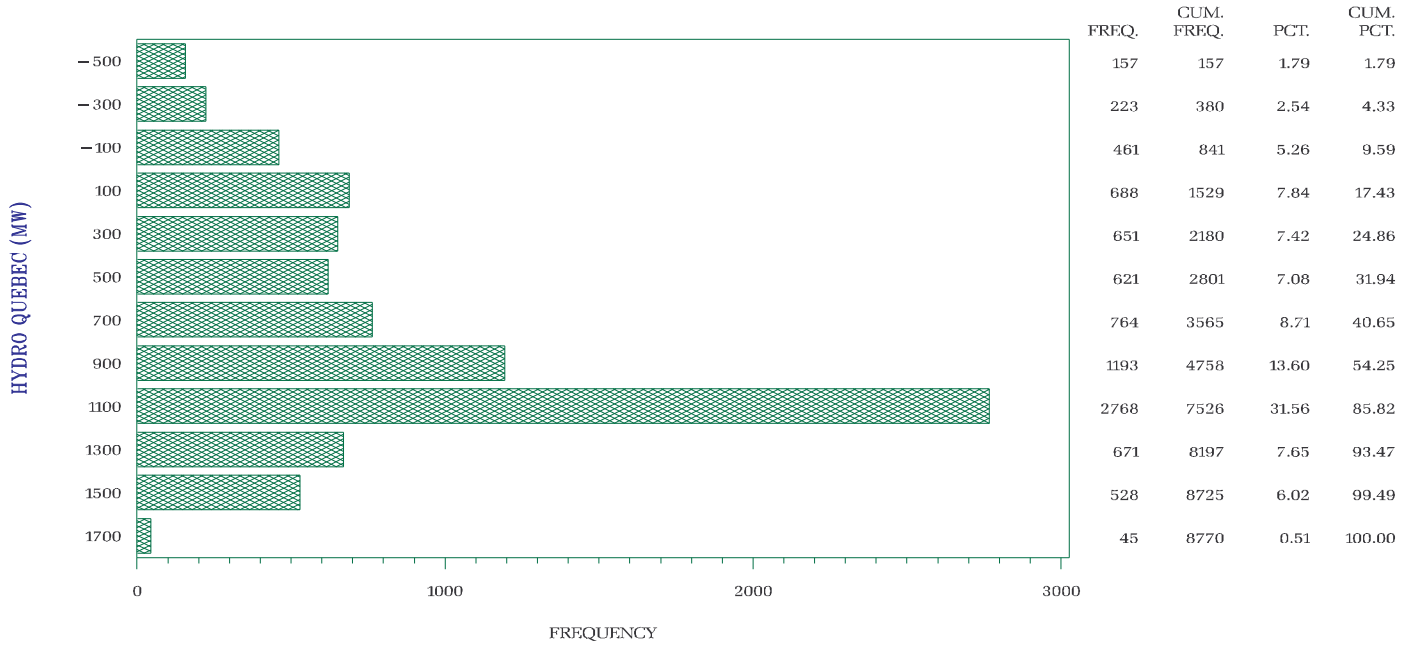
NY EXPORT



NYISO Transmission Use Statistics For January–December 2000

HQ–NY SCHEDULE

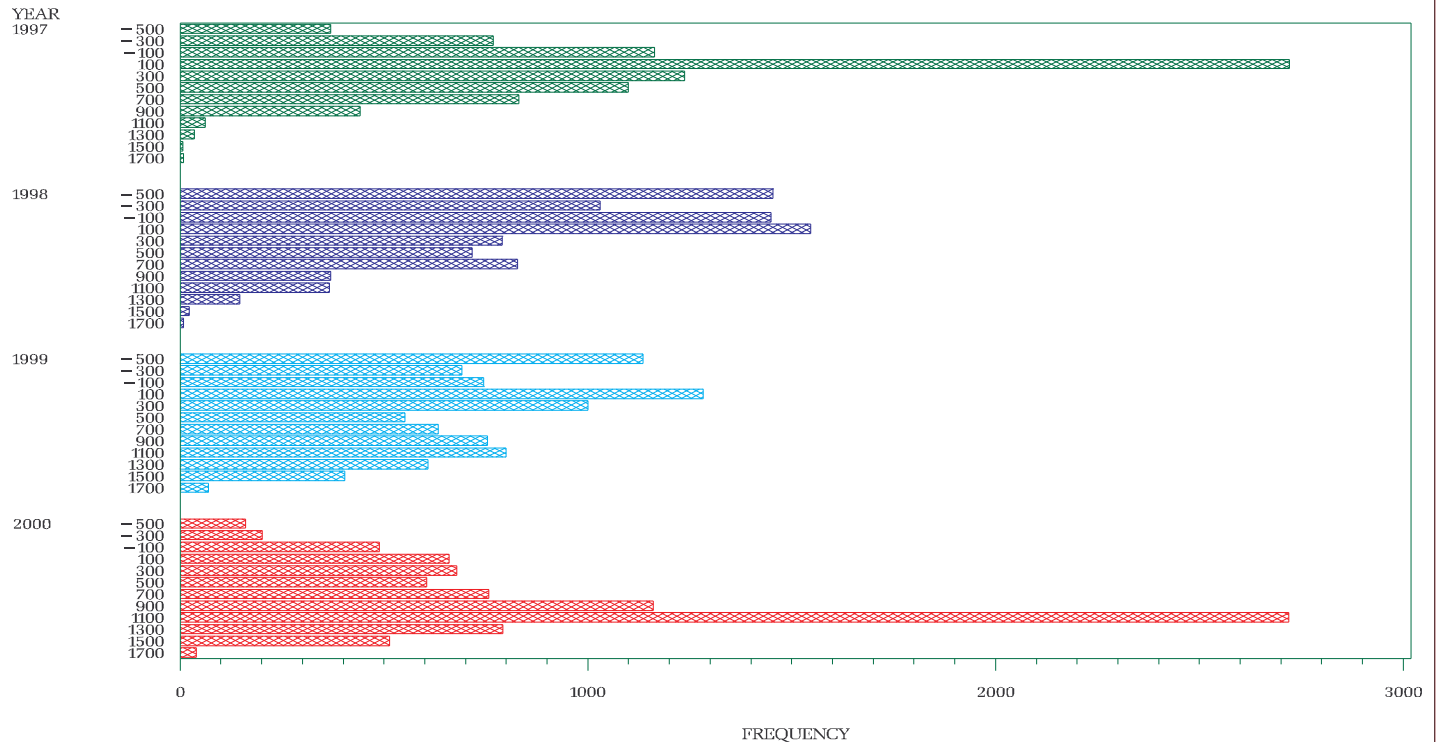
Chateauguay – Massena



NYISO Transmission Use Statistics For January 1997–December 2000

HQ–NY SCHEDULE

Chateauguay – Massena

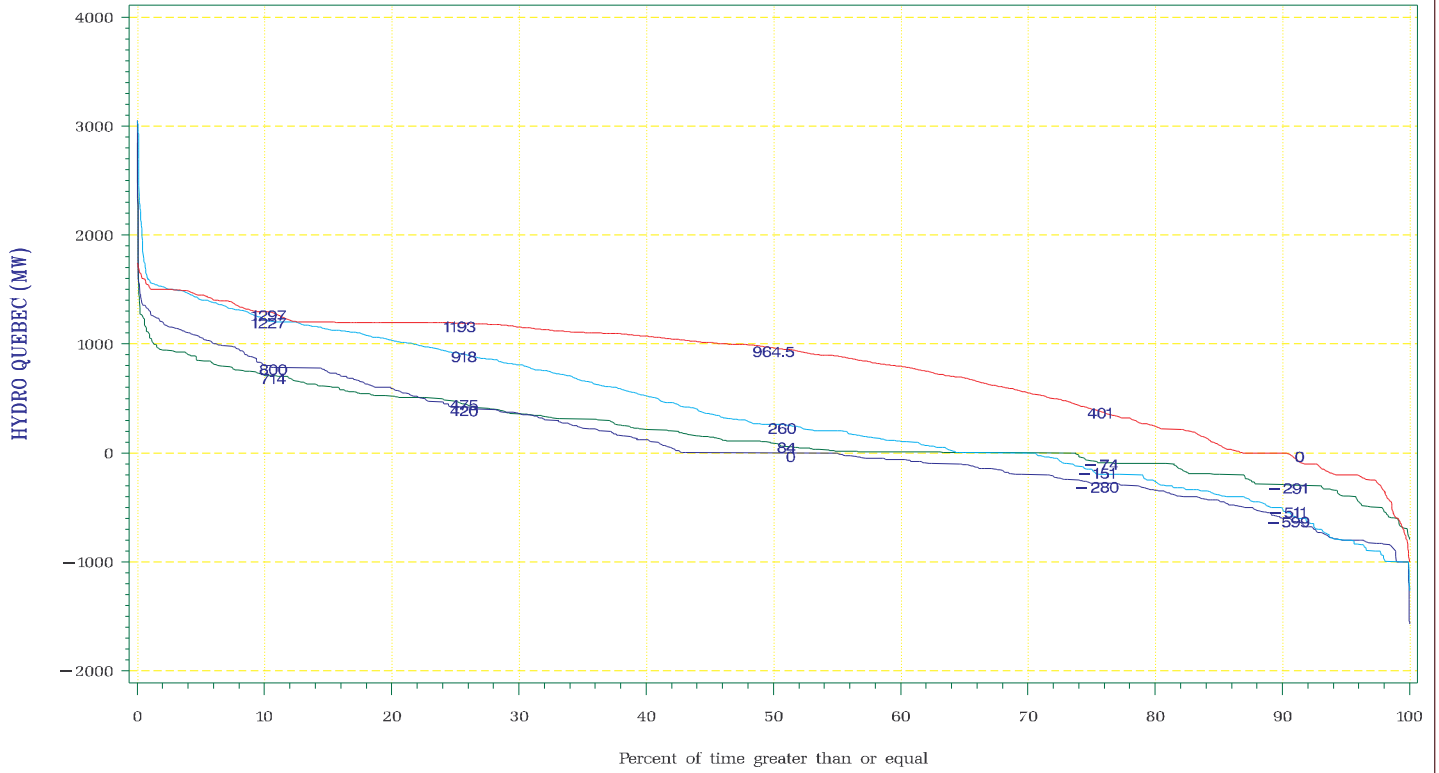


1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

HQ – NY SCHEDULE

Chateauguy – Massena

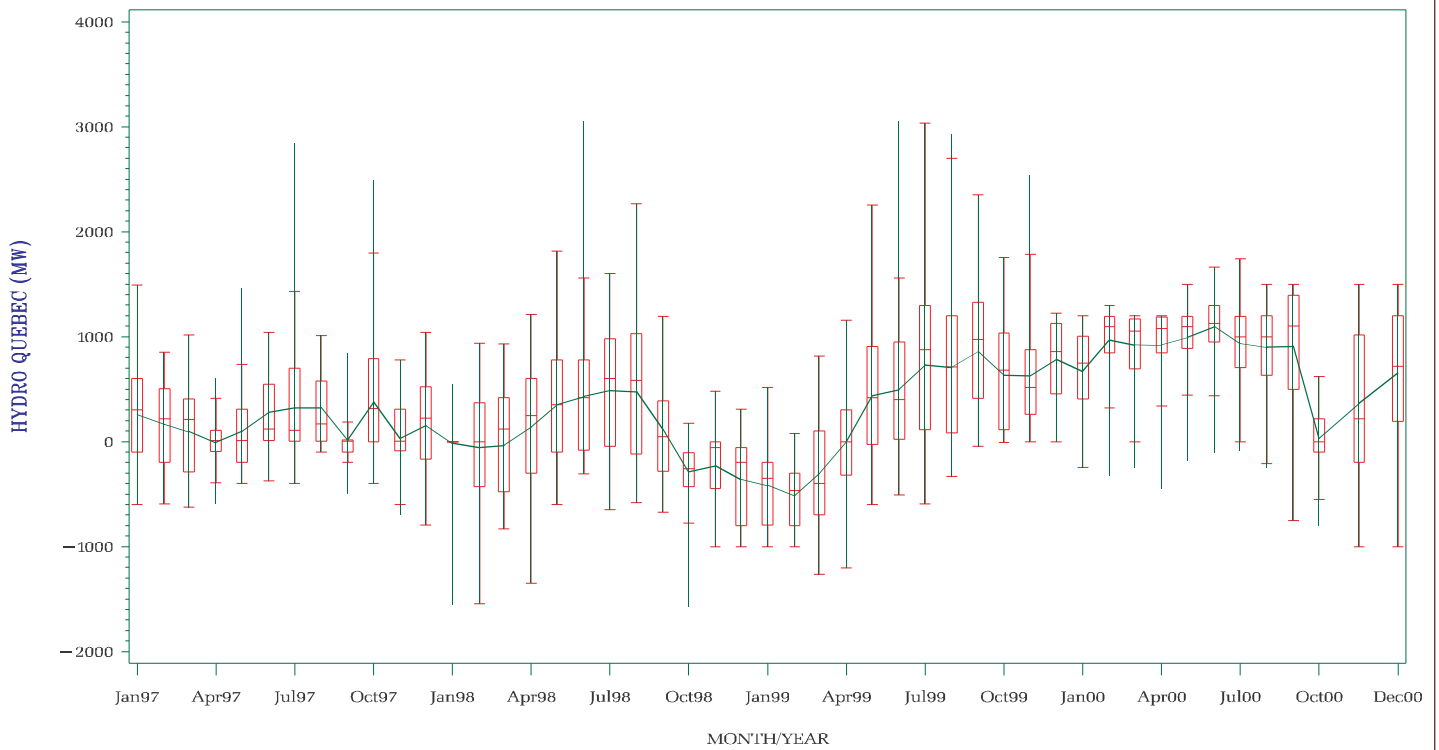


1997 1998 1999 2000

NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

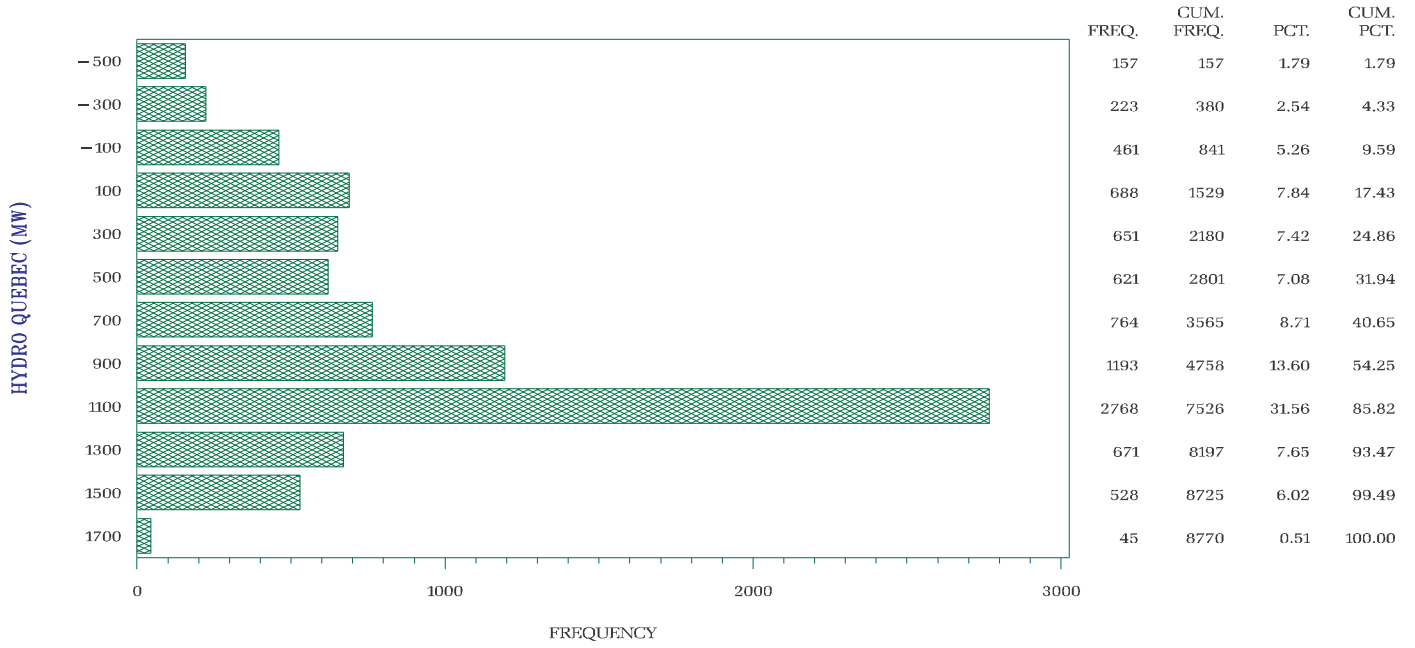
HQ – NY SCHEDULE

Chateauguy – Massena



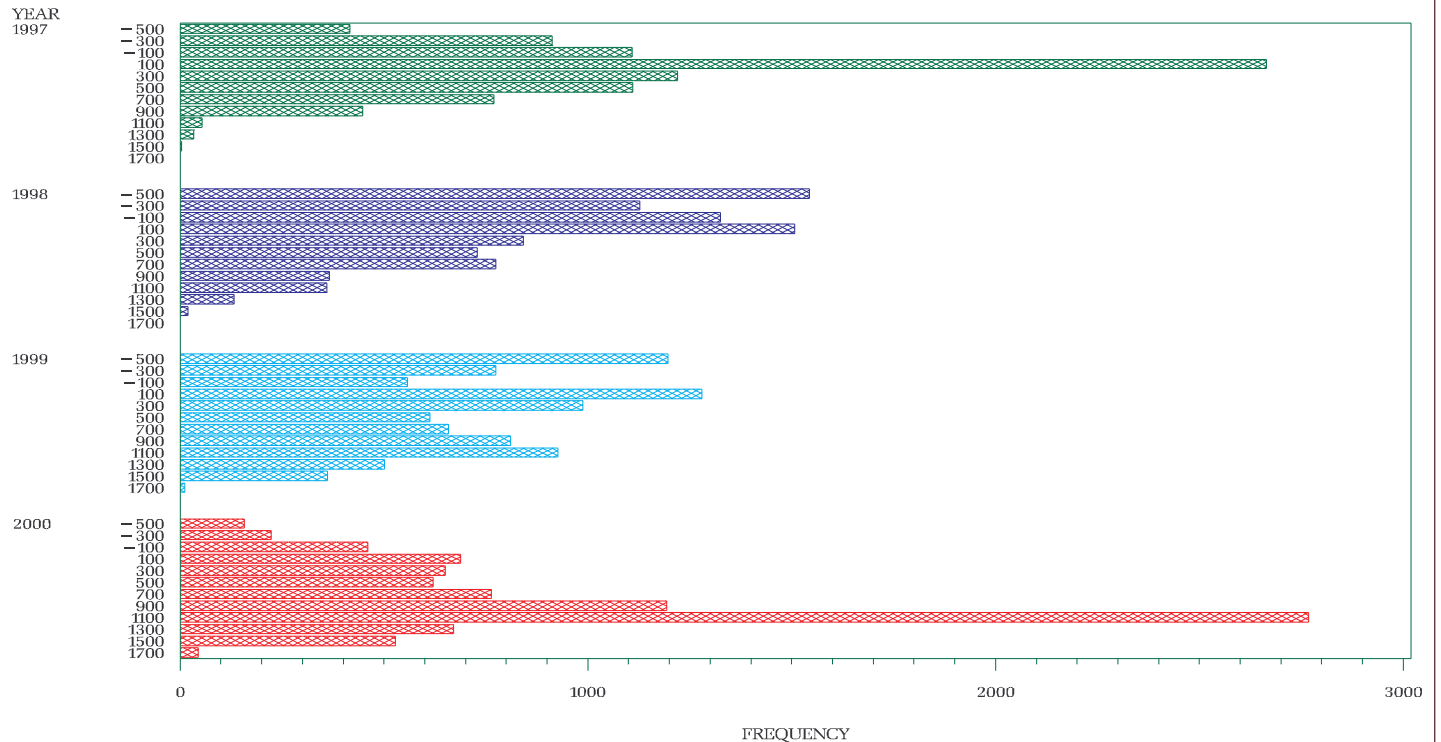
NYISO Transmission Use Statistics For January–December 2000

HYDRO QUEBEC
Chateauguay – Massena



NYISO Transmission Use Statistics For January 1997–December 2000

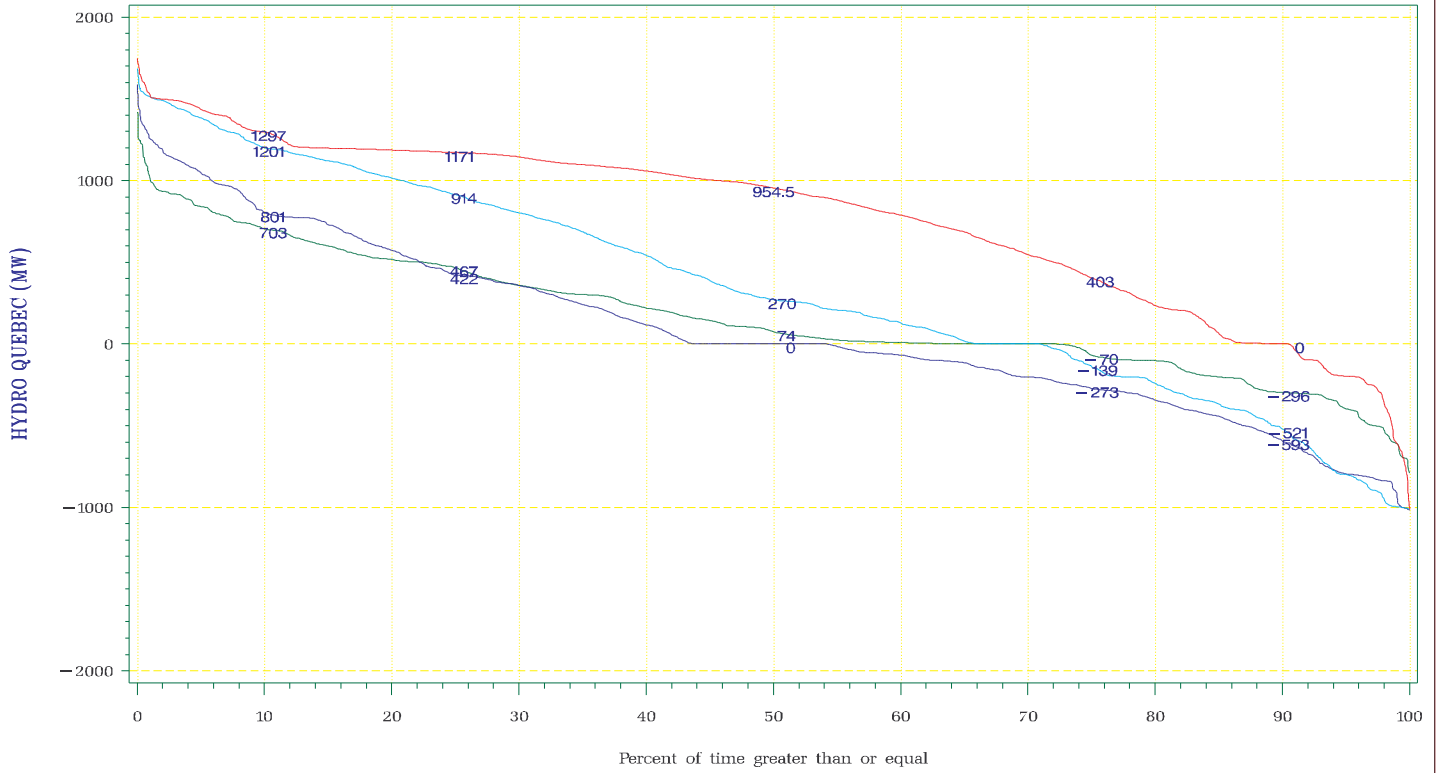
HYDRO QUEBEC
Chateauguay – Massena



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

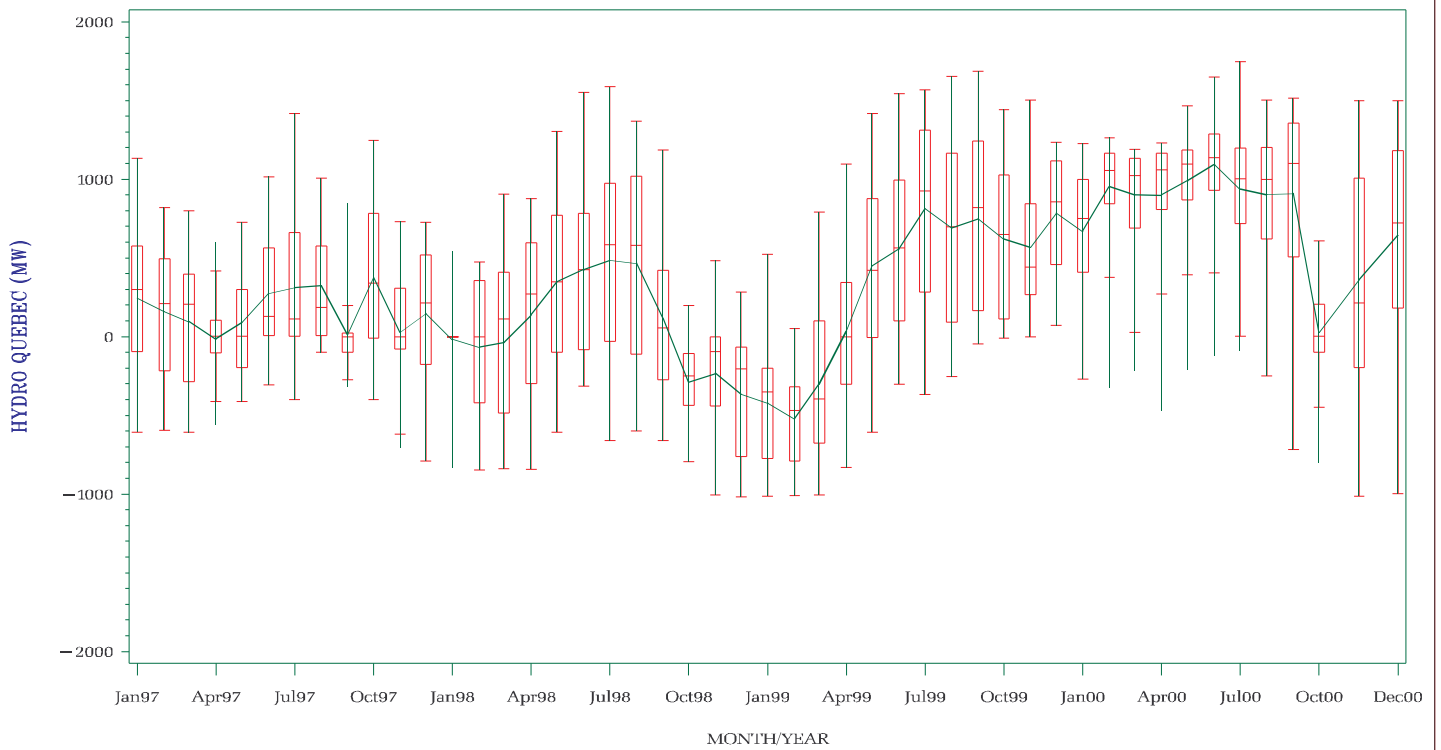
HYDRO QUEBEC
Chateauguay – Massena



1997 1998 1999 2000

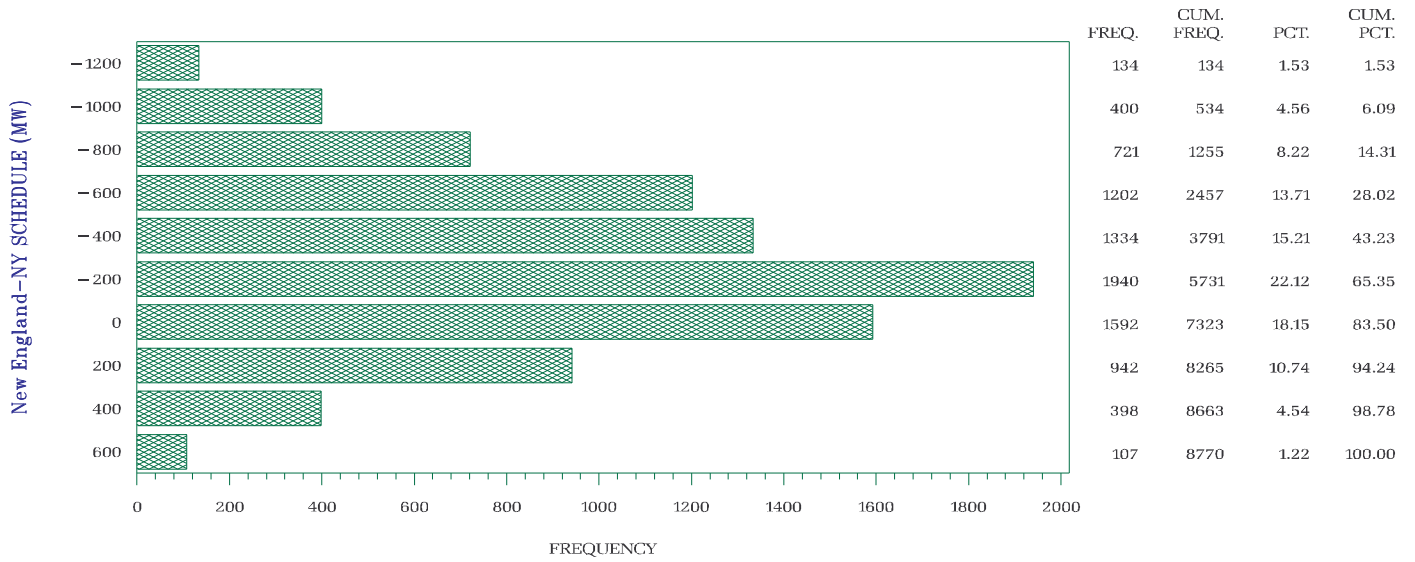
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

HYDRO QUEBEC
Chateauguay – Massena



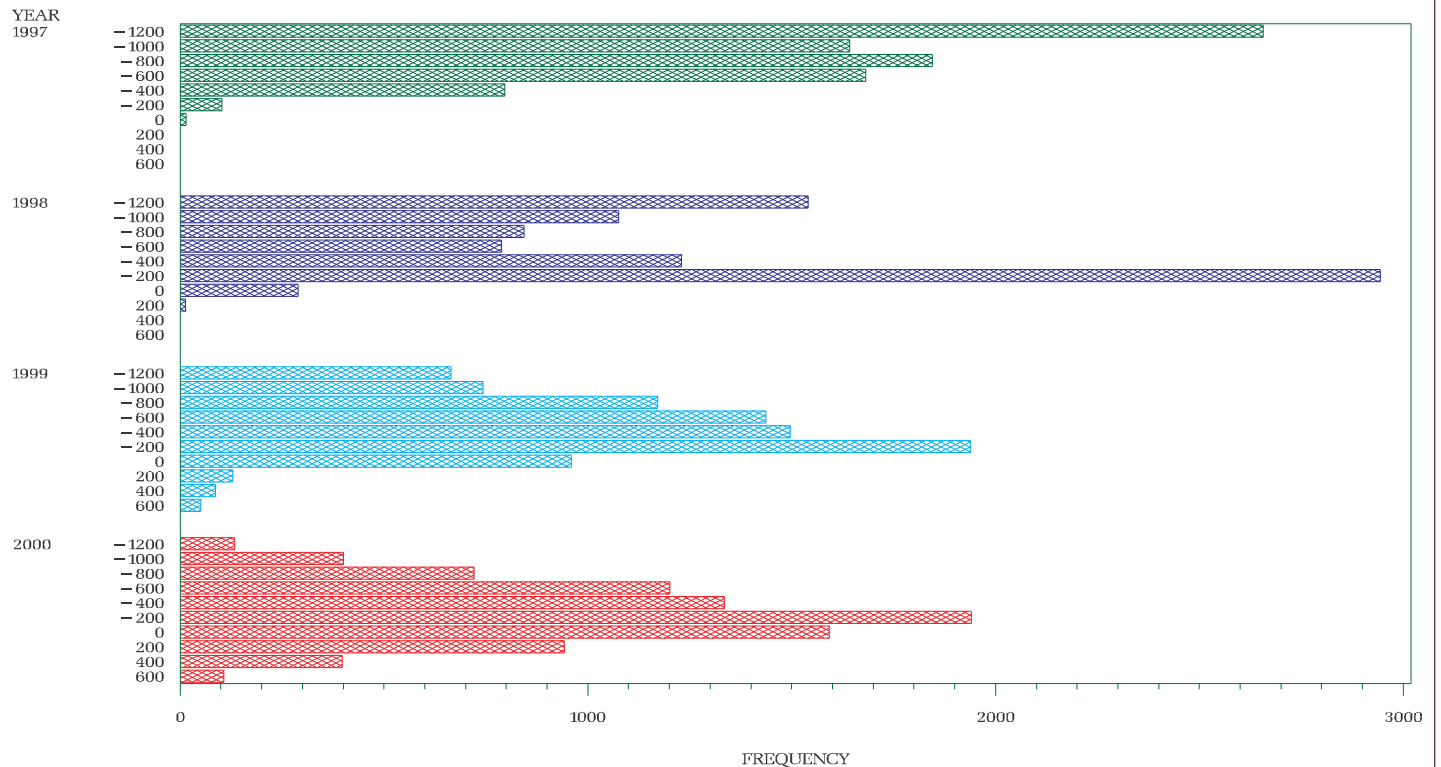
NYISO Transmission Use Statistics For January-December 2000

New England - NY SCHEDULE



NYISO Transmission Use Statistics For January 1997-December 2000

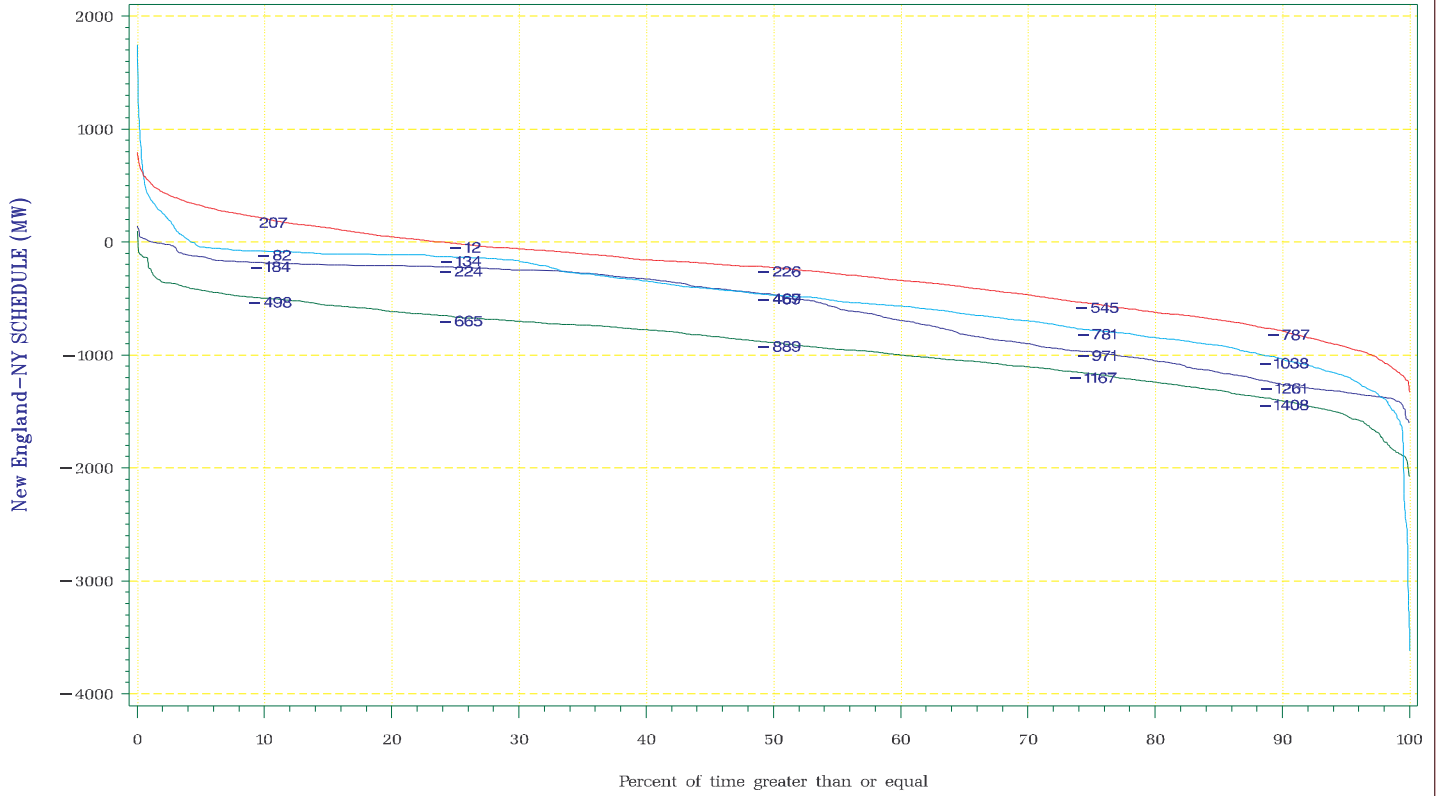
New England - NY SCHEDULE



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

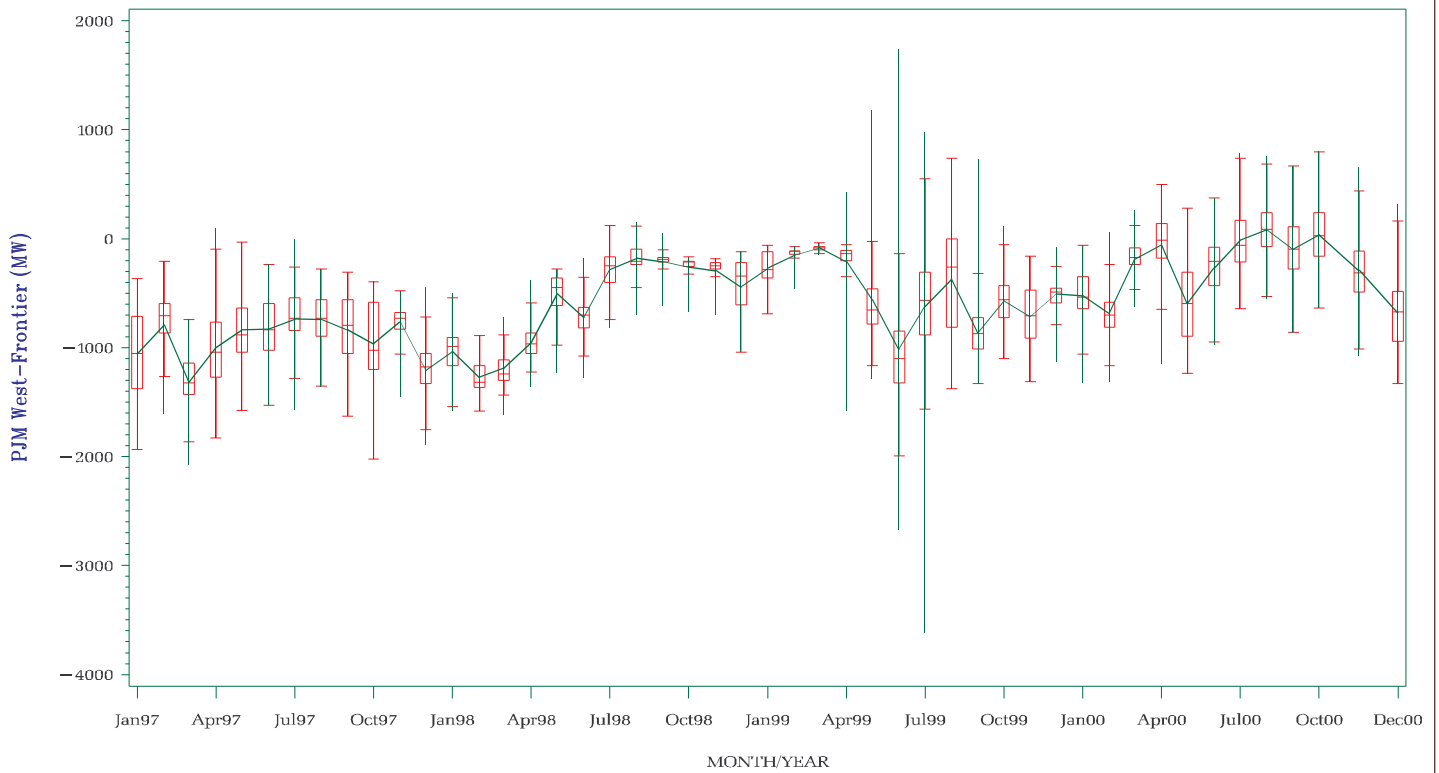
New England – NY SCHEDULE



1997 1998 1999 2000

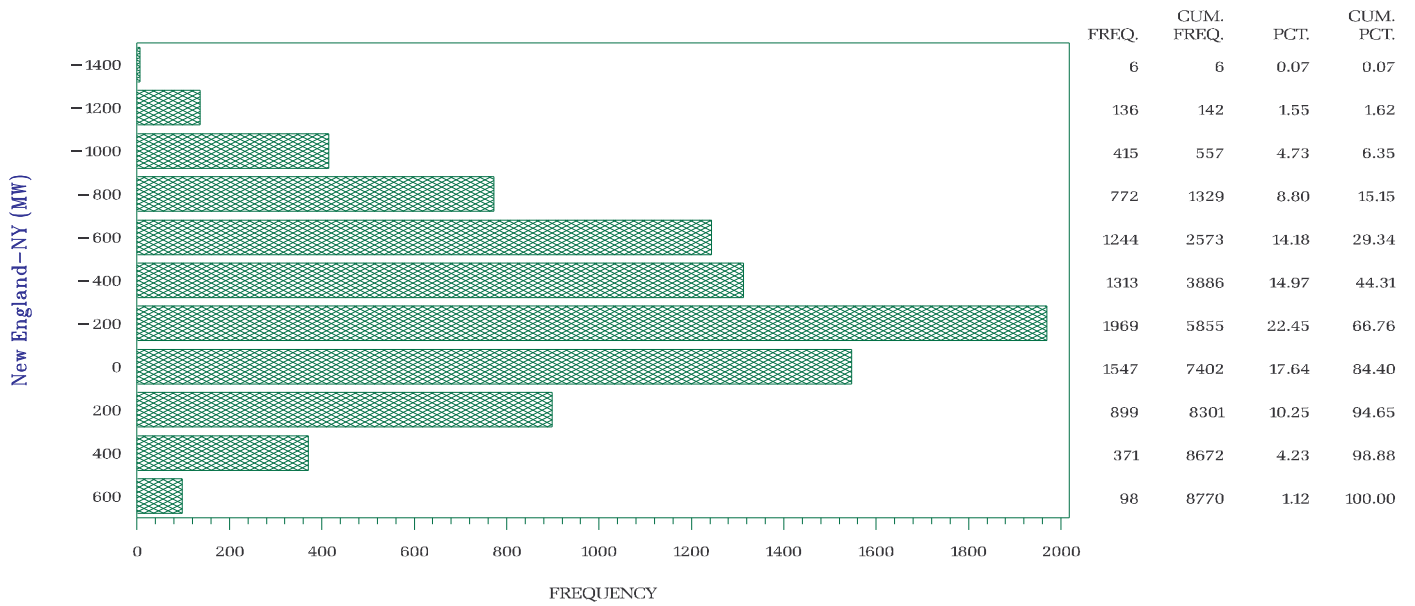
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

New England – NY SCHEDULE



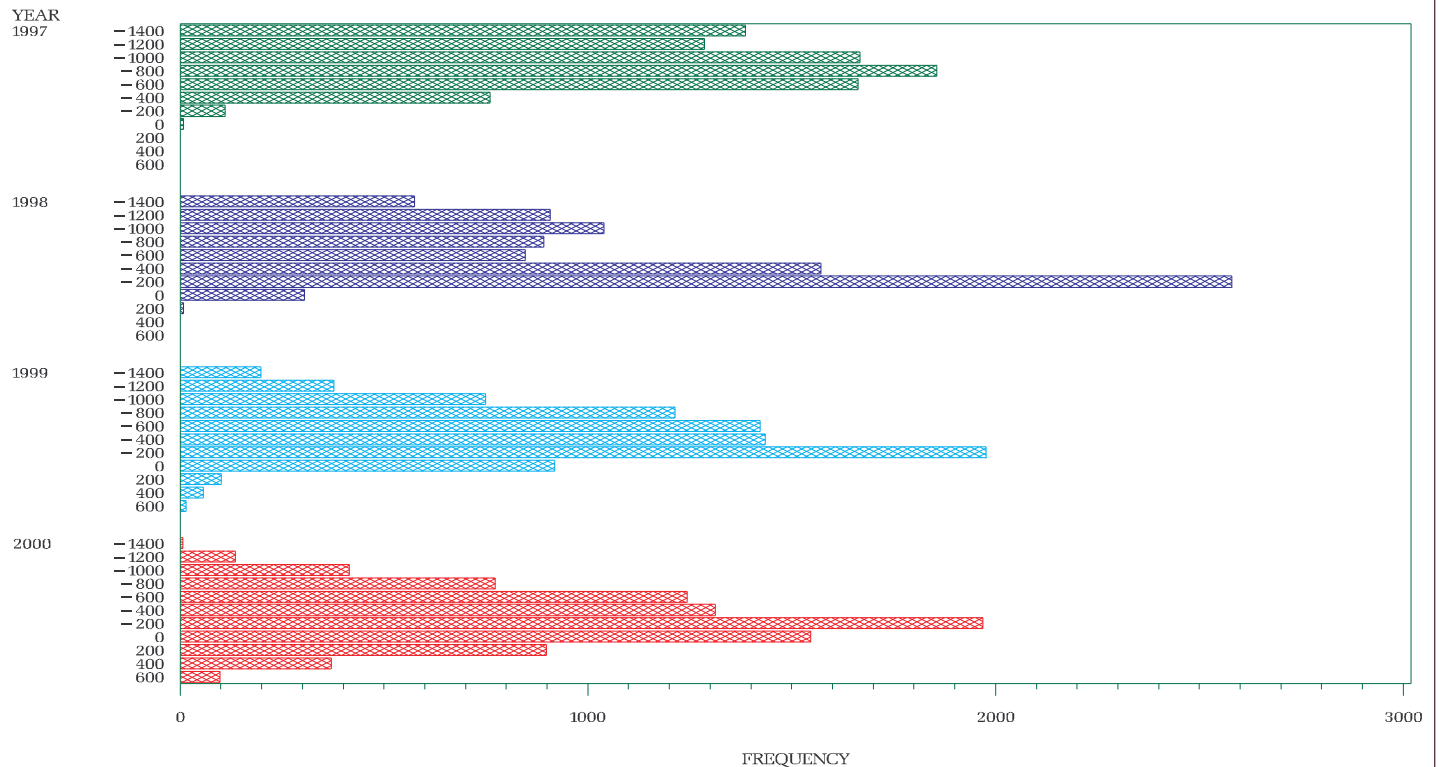
NYISO Transmission Use Statistics For January–December 2000

New England – NY



NYISO Transmission Use Statistics For January 1997–December 2000

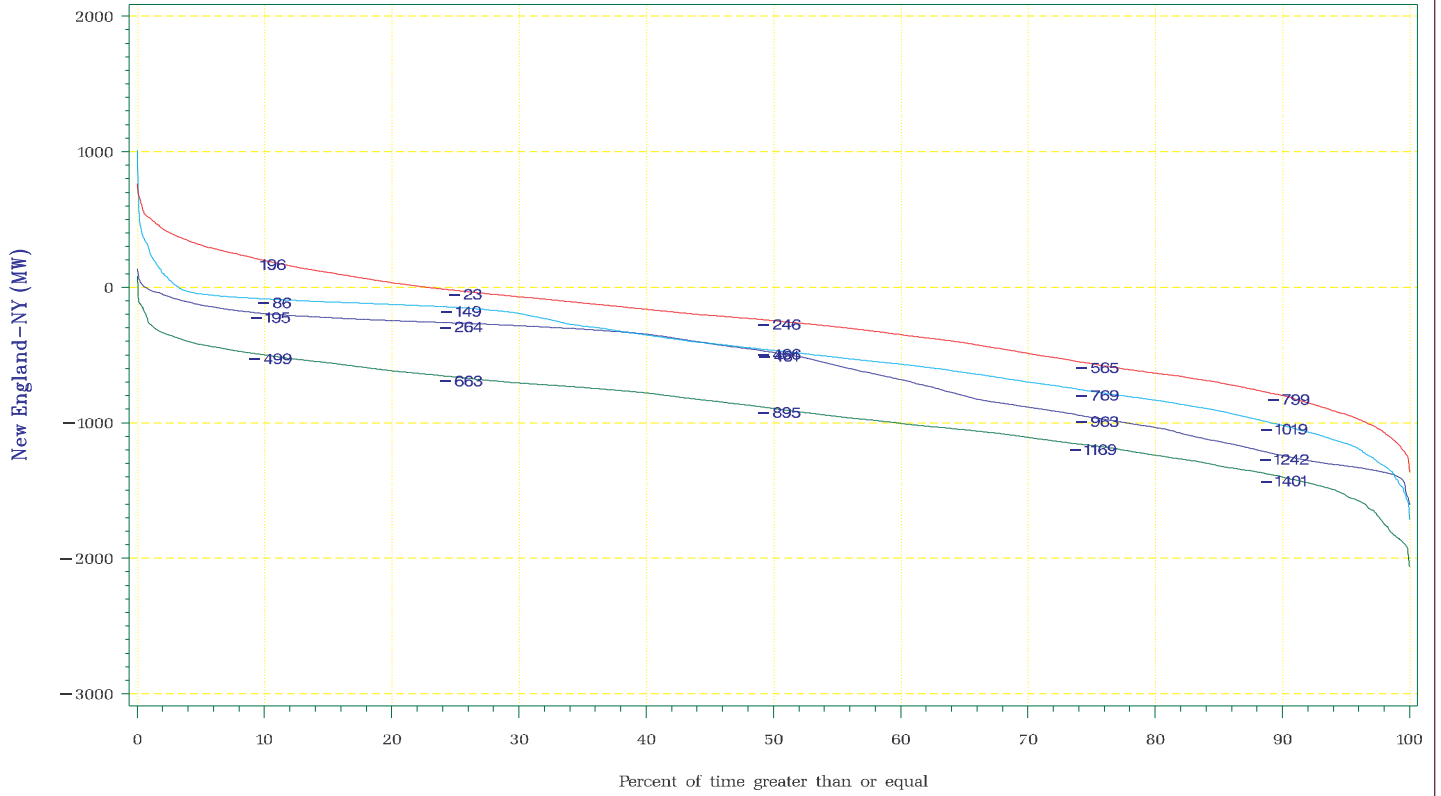
New England – NY



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

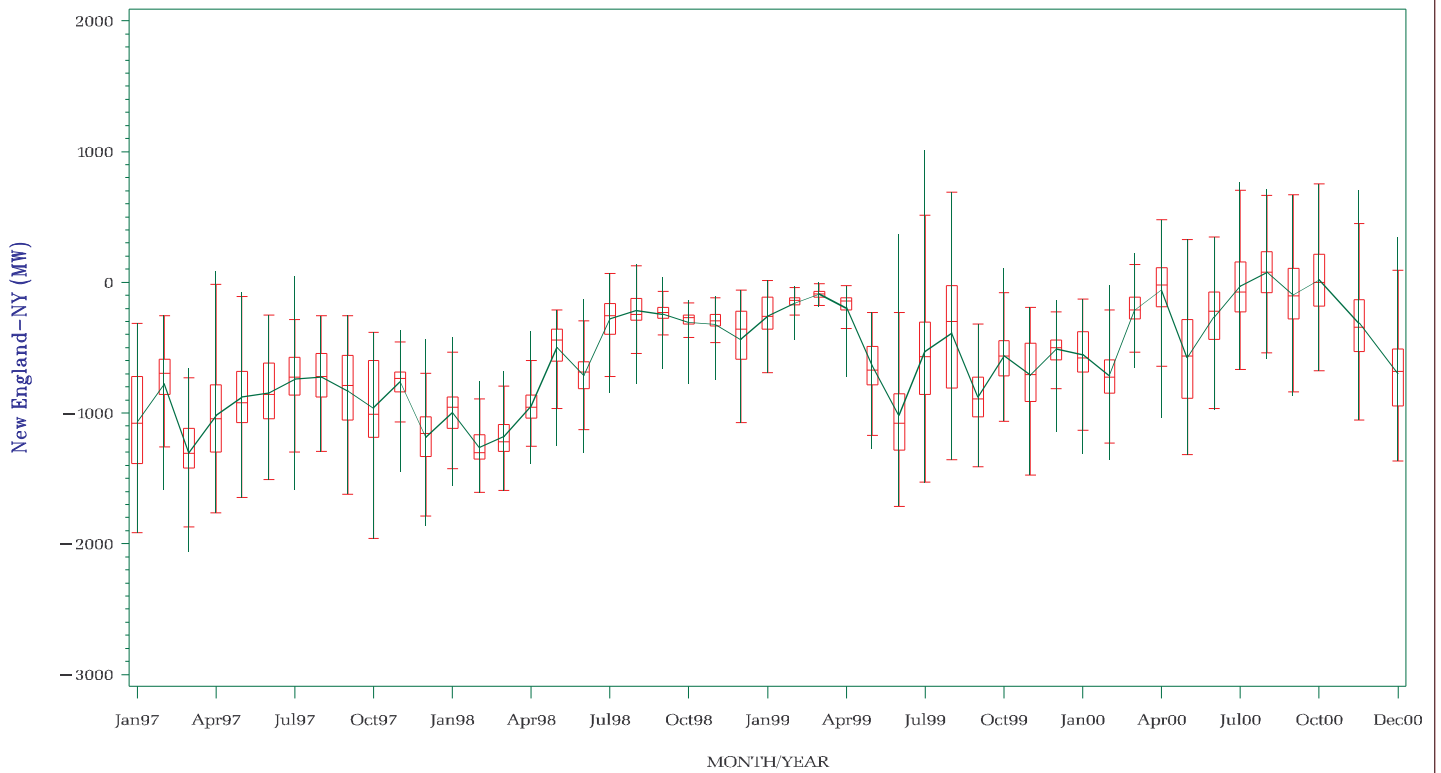
New England – NY



1997 1998 1999 2000

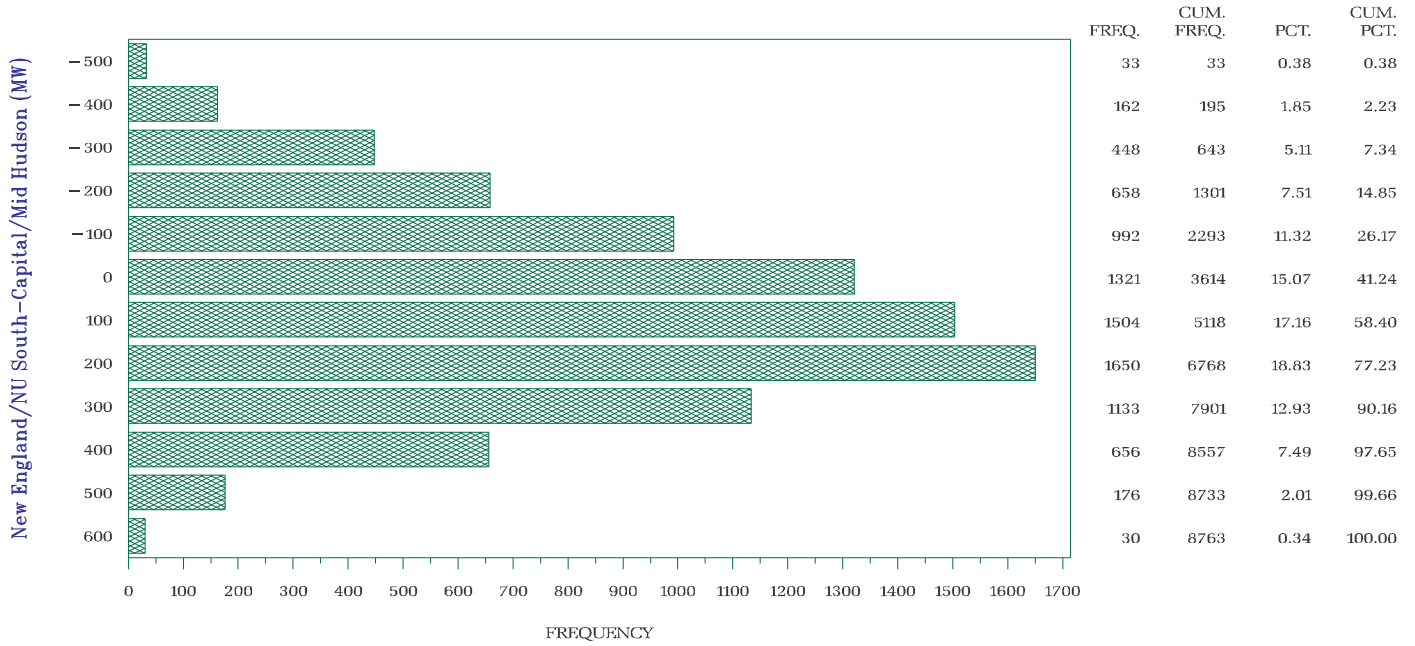
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

New England – NY



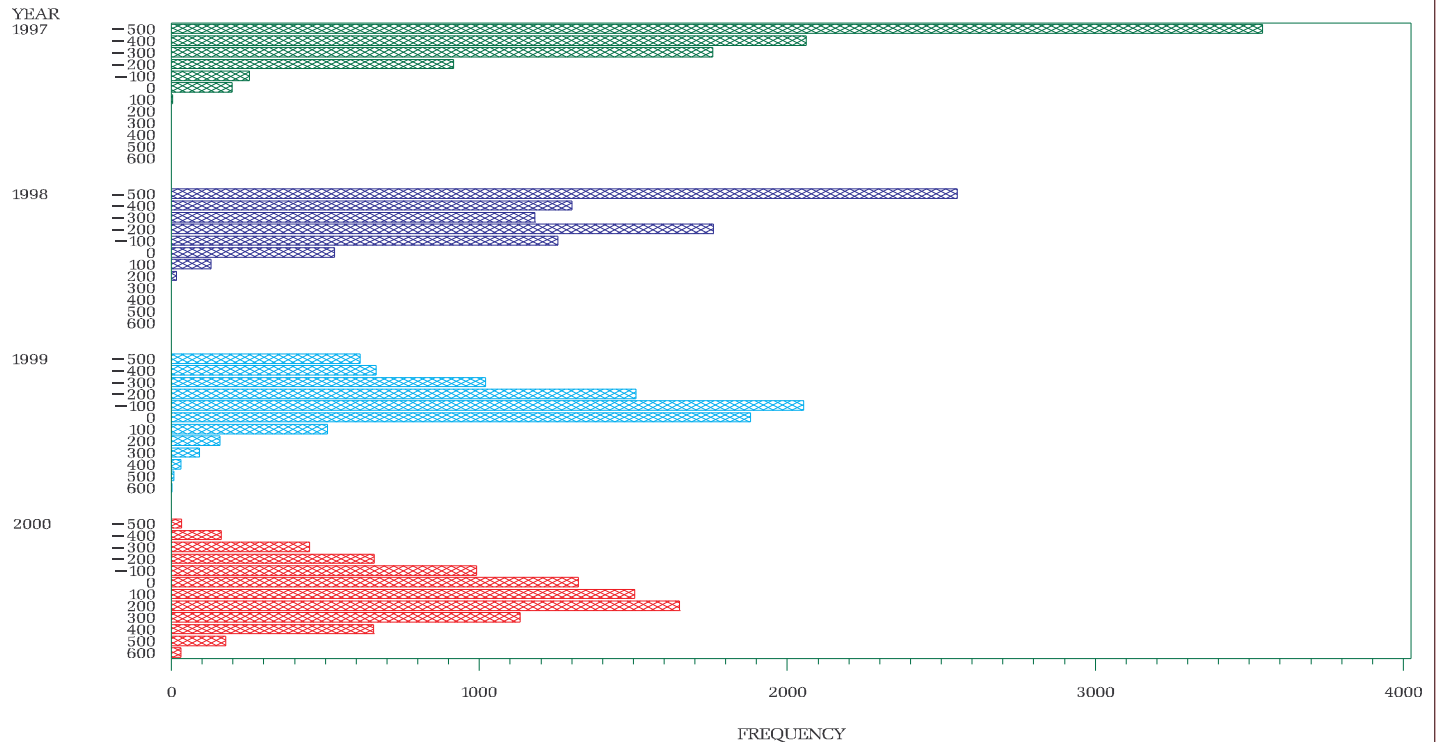
NYISO Transmission Use Statistics For January–December 2000

New England/NU South–Capital/Mid Hudson
398 Long Mt.–Pleasant Valley



NYISO Transmission Use Statistics For January 1997–December 2000

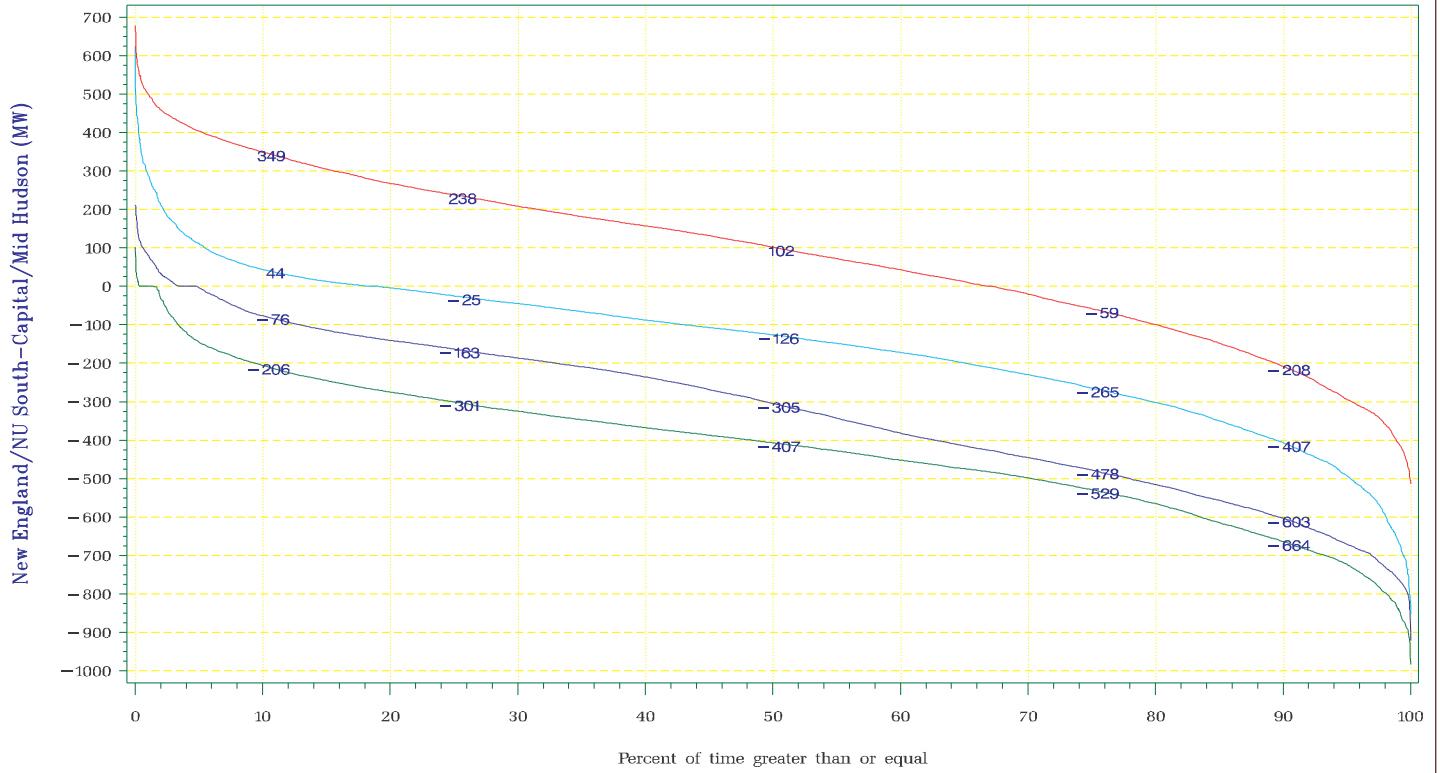
New England/NU South–Capital/Mid Hudson
398 Long Mt.–Pleasant Valley



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

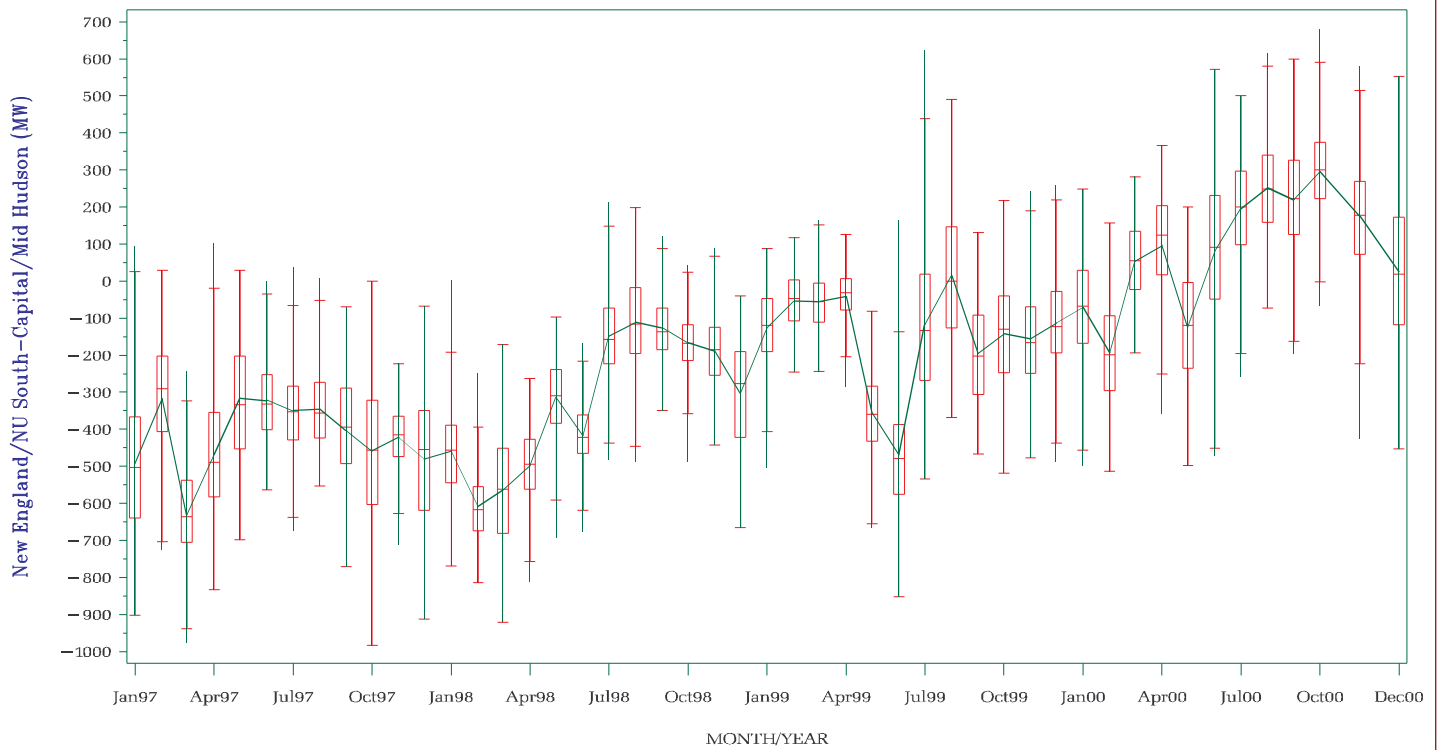
New England/NU South – Capital/Mid Hudson
398 Long Mt. – Pleasant Valley



1997 1998 1999 2000

NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

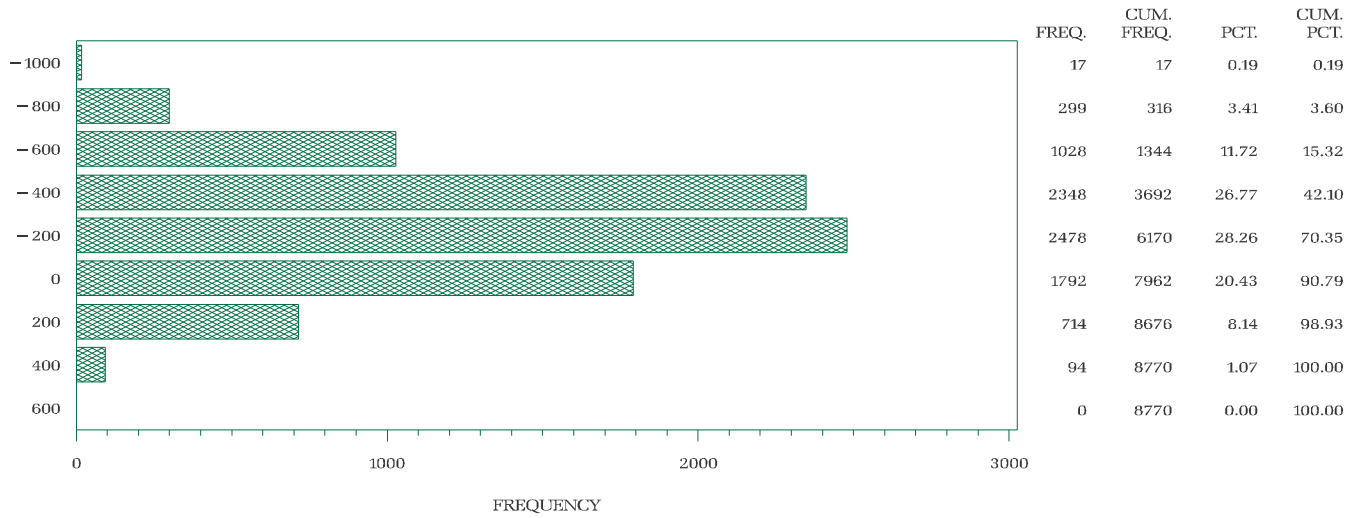
New England/NU South – Capital/Mid Hudson
398 Long Mt. – Pleasant Valley



NYISO Transmission Use Statistics For January–December 2000

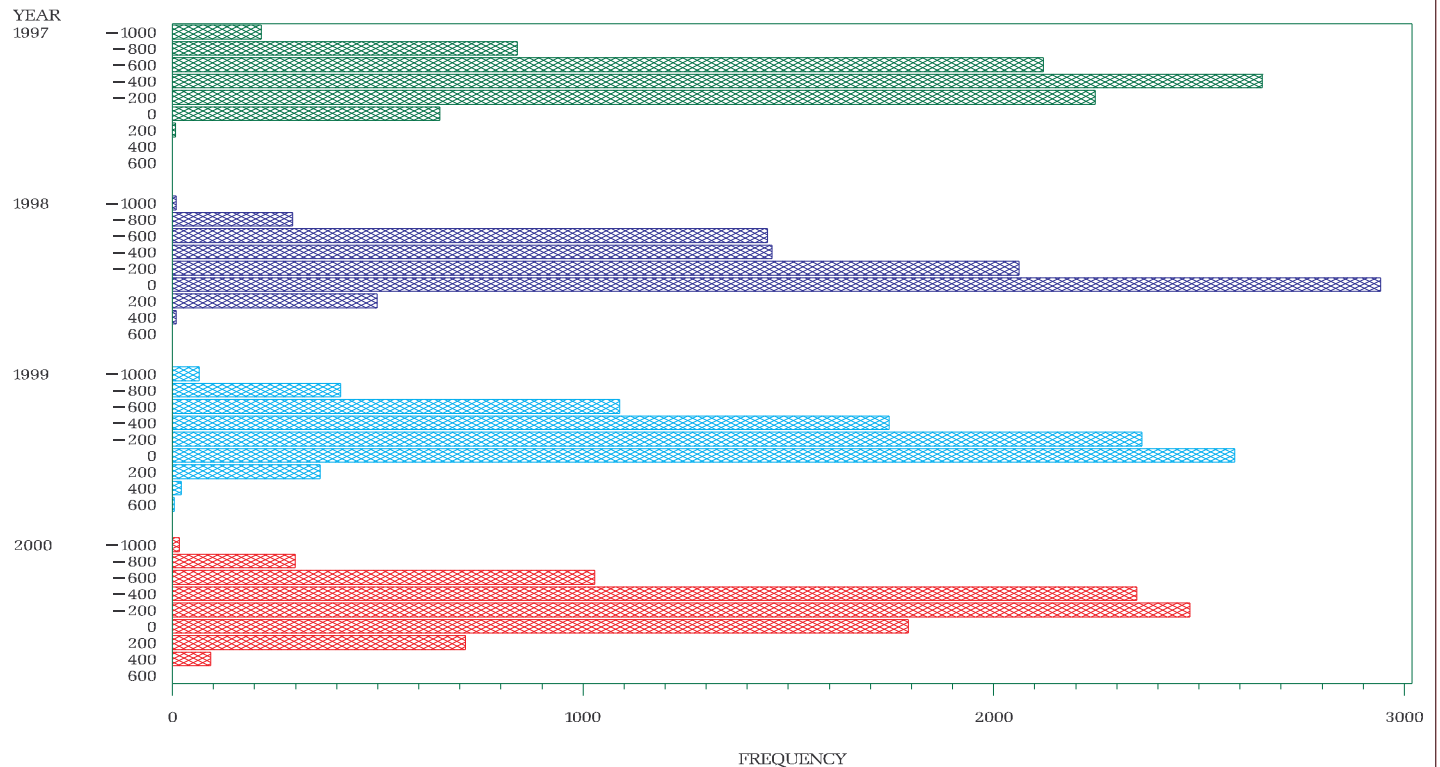
New England/Vt/NE/NU South–Capital/Mid Hudson

New England/Vt/NE/NU South–Capital/Mid Hudson (MW)



NYISO Transmission Use Statistics For January 1997–December 2000

New England/Vt/NE/NU South–Capital/Mid Hudson

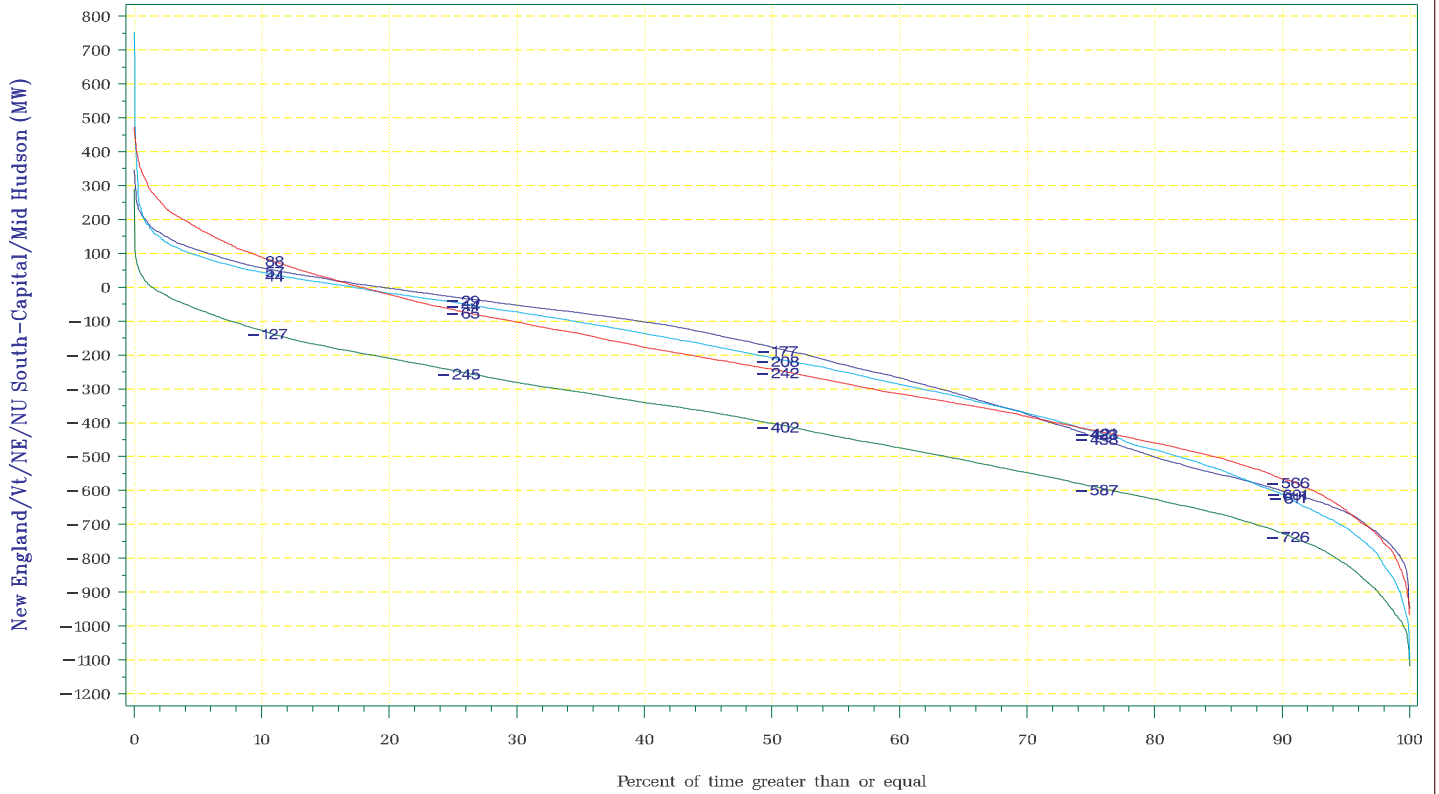


1997 1998 1999 2000

– A40 –

NYISO Flow Duration Curve For January 1997 – December 2000

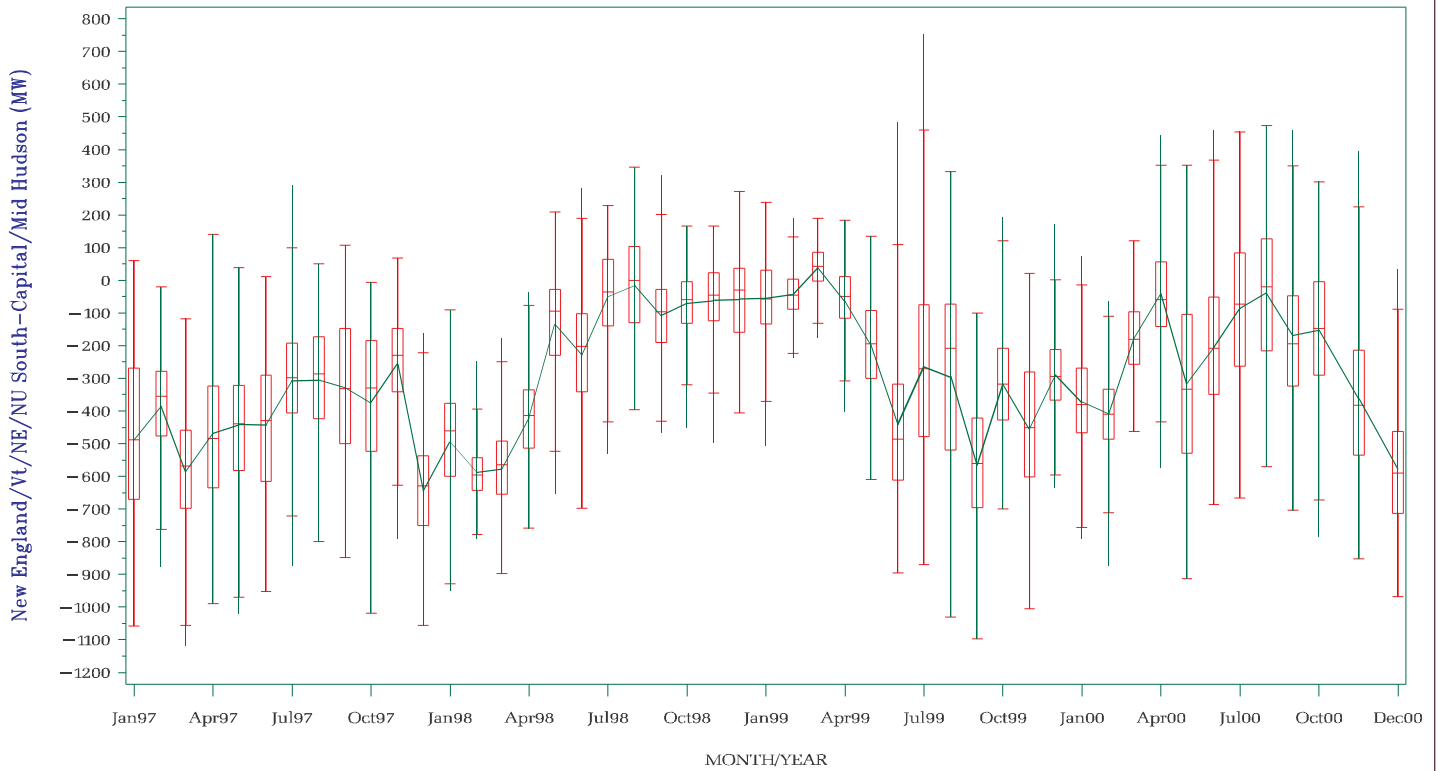
New England/Vt/NE/NU South – Capital/Mid Hudson



1997 1998 1999 2000

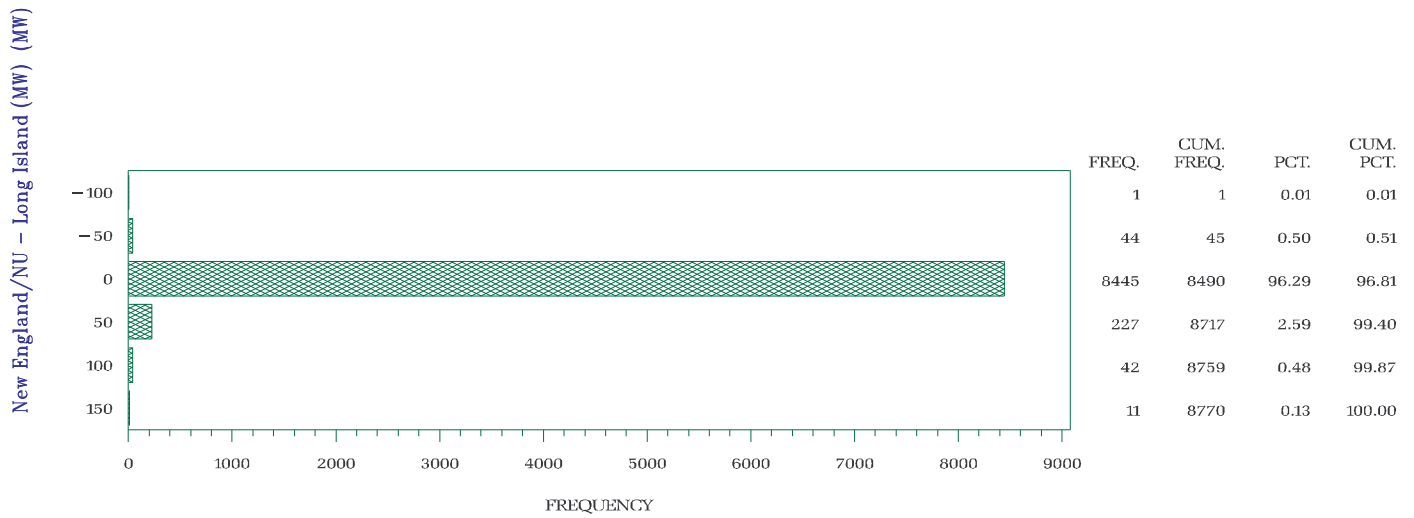
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

New England/Vt/NE/NU South – Capital/Mid Hudson



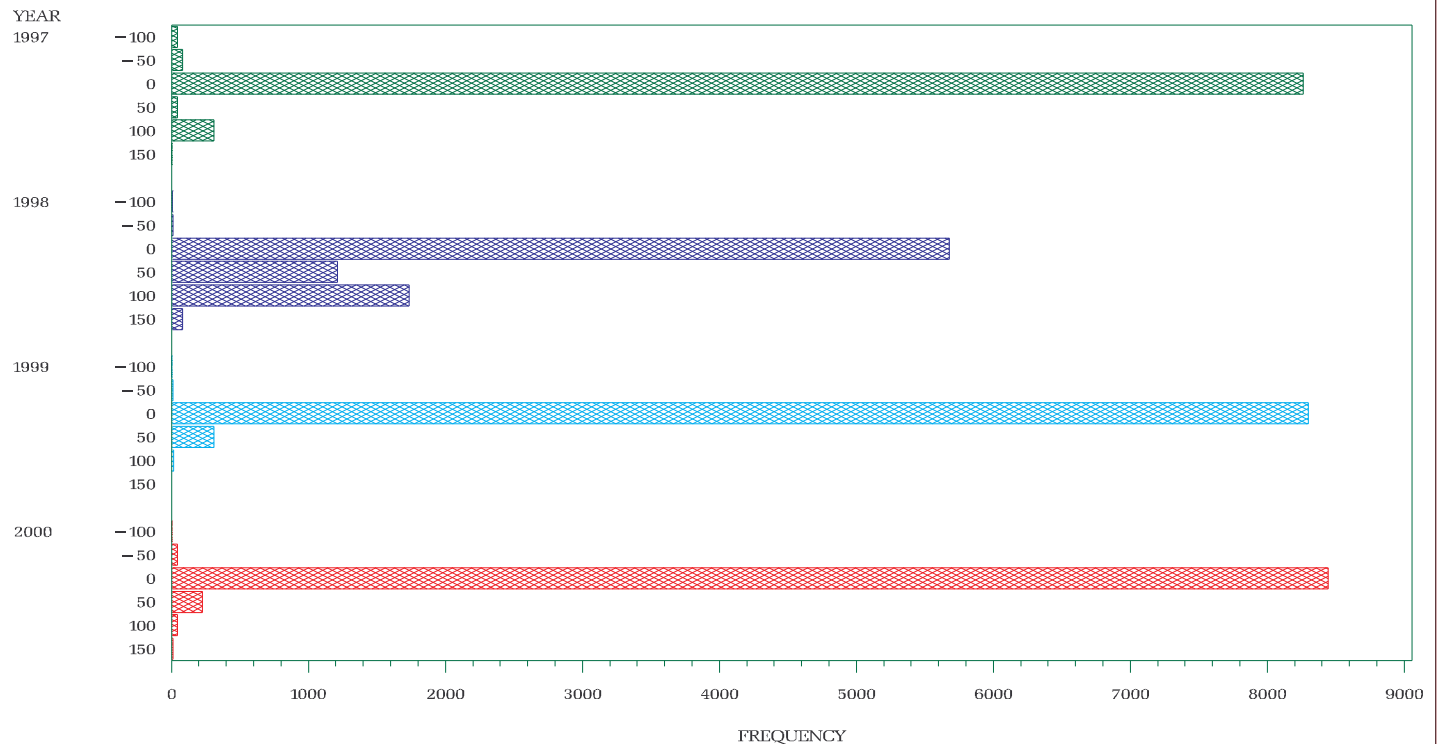
NYISO Transmission Use Statistics For January–December 2000

New England/NU – Long Island
1385 Northport–North Harbar(Long Island South Cable)



NYISO Transmission Use Statistics For January 1997–December 2000

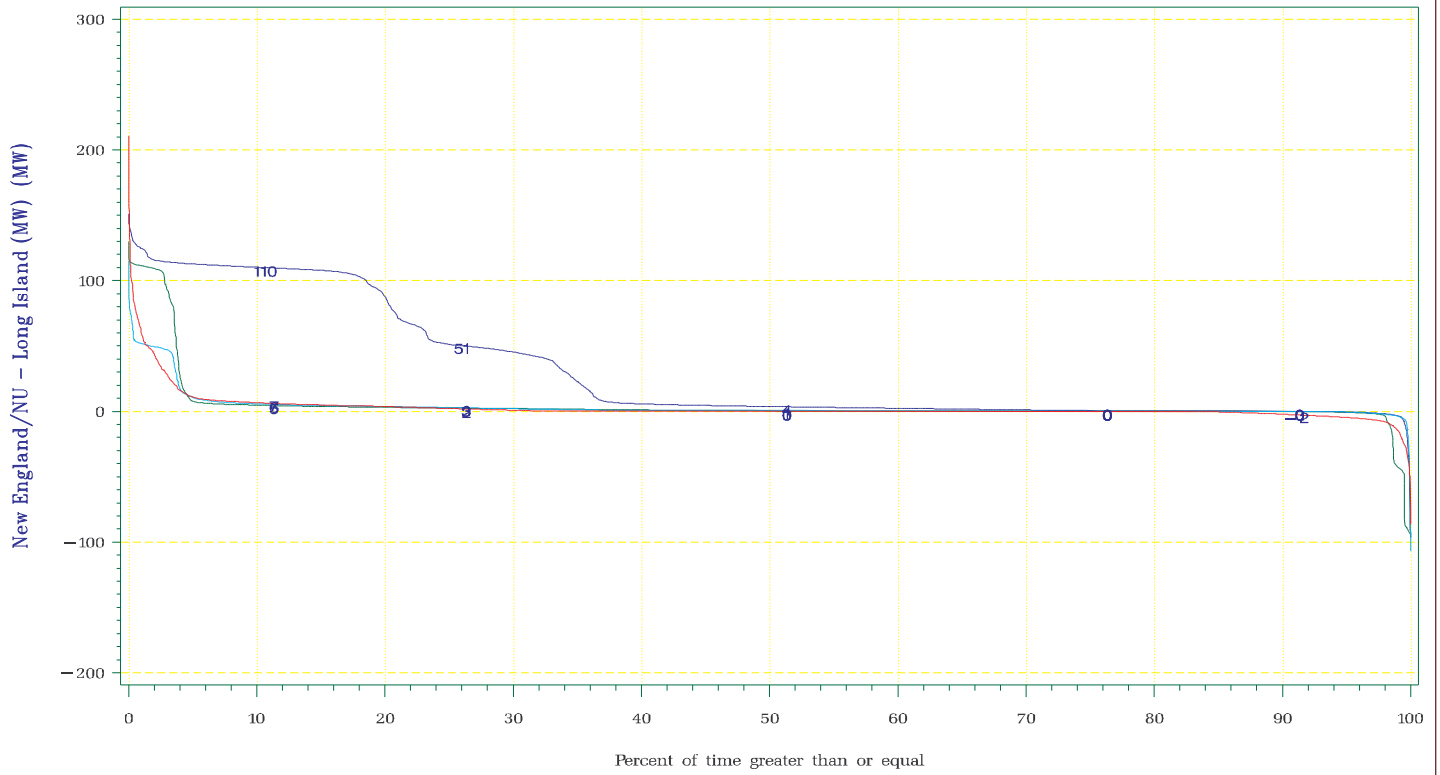
New England/NU – Long Island
1385 Northport–North Harbar(Long Island South Cable)



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

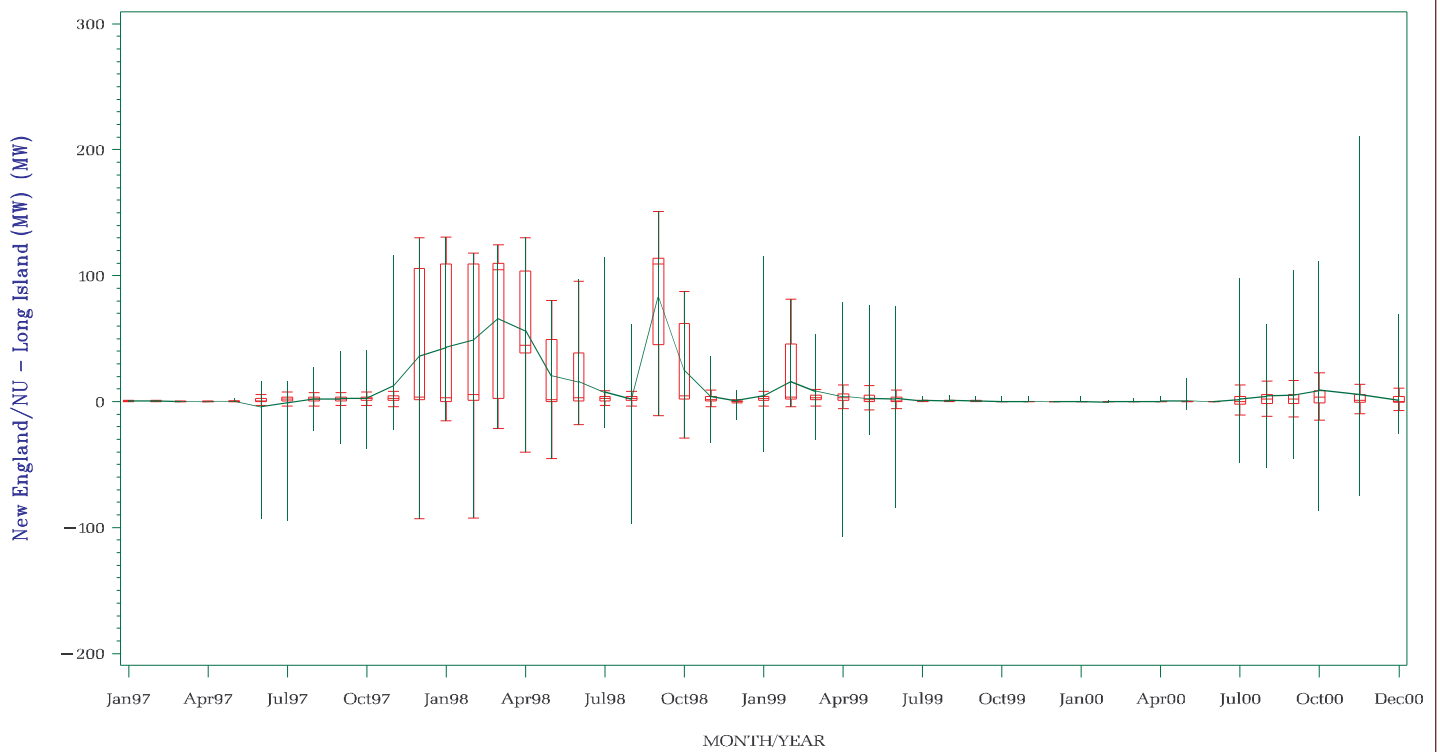
New England/NU – Long Island
1385 Northport–North Harbar(Long Island South Cable)



1997 1998 1999 2000

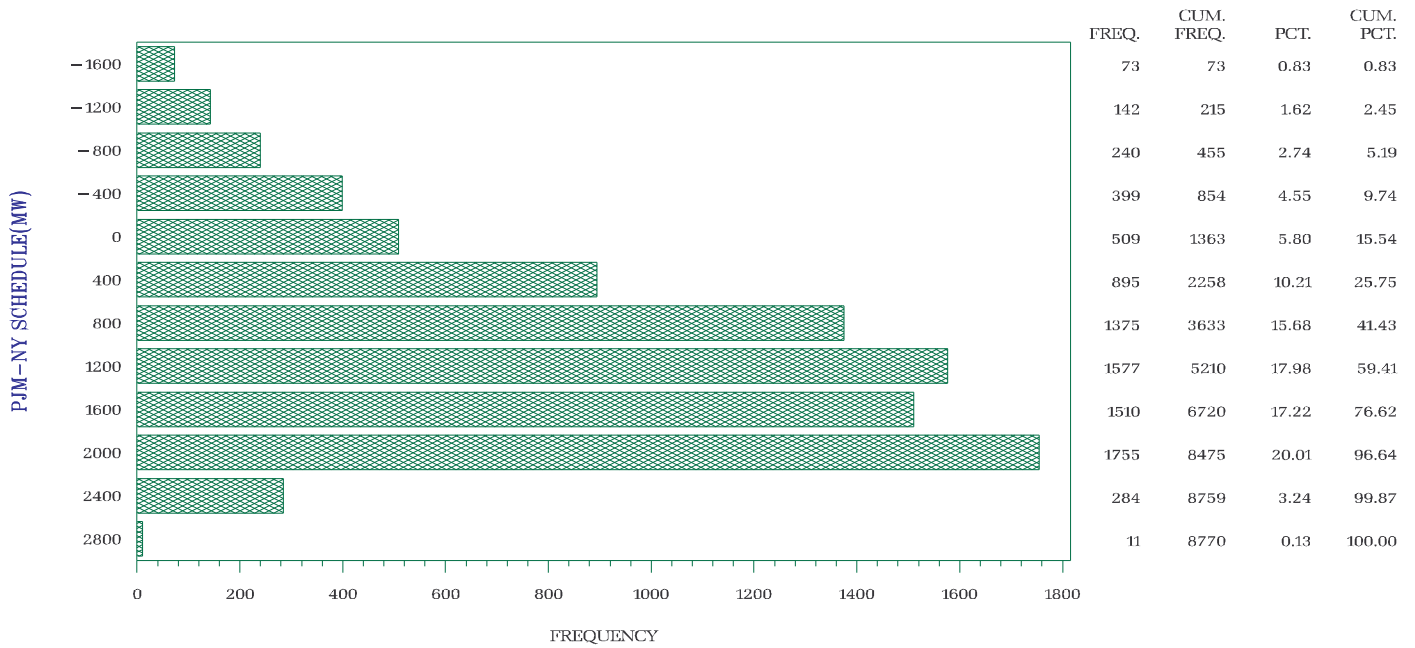
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

New England/NU – Long Island
1385 Northport–North Harbar(Long Island South Cable)



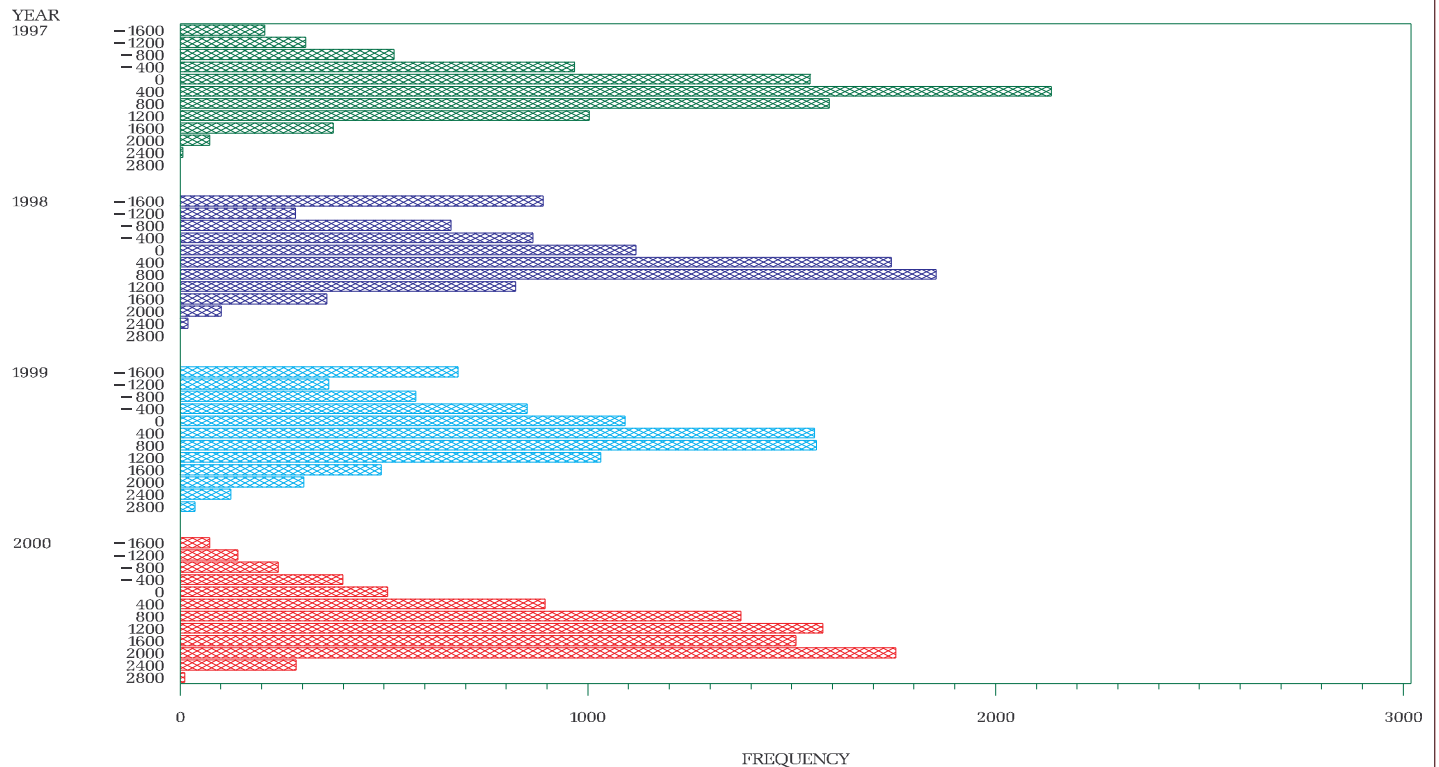
NYISO Transmission Use Statistics For January-December 2000

PJM-NY SCHEDULE



NYISO Transmission Use Statistics For January 1997-December 2000

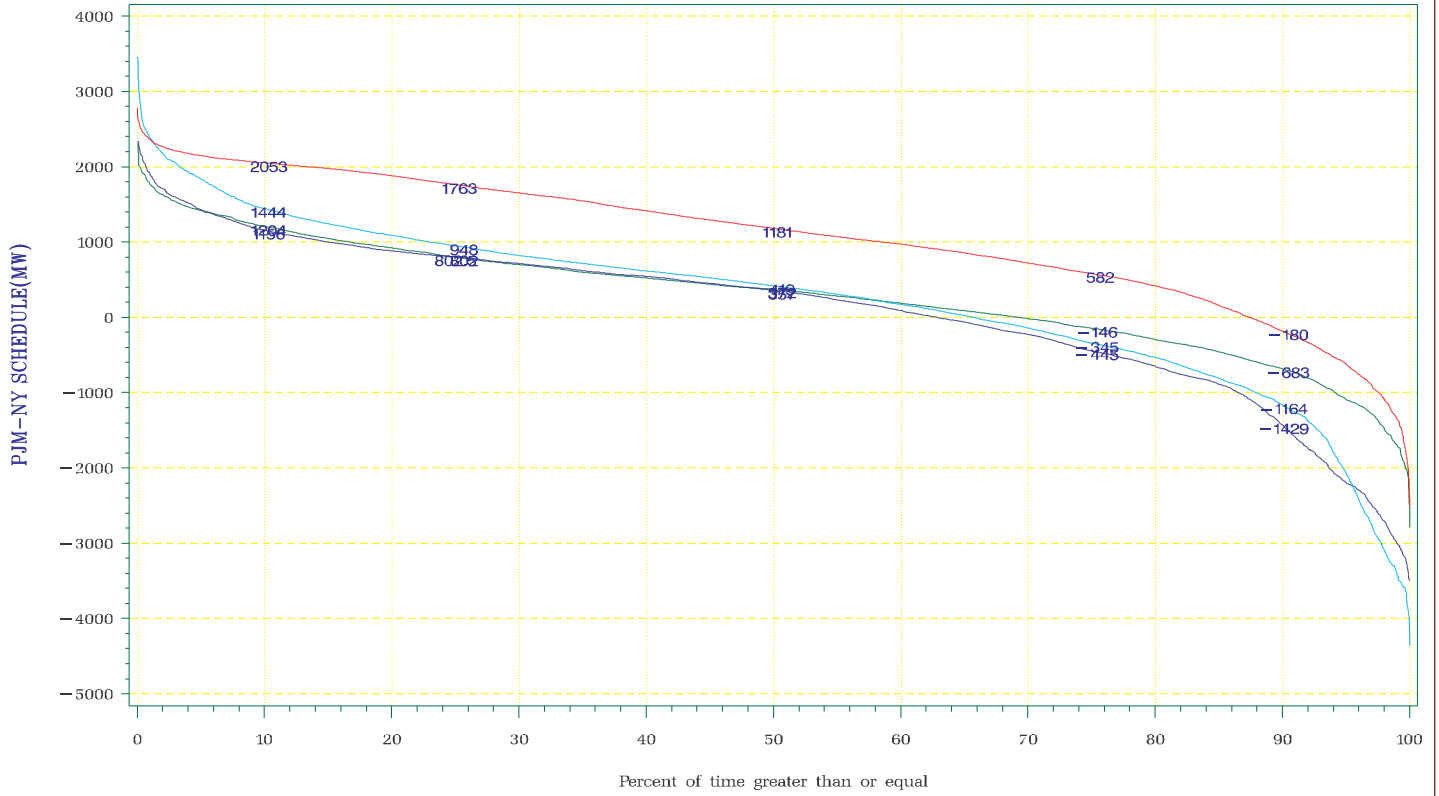
PJM-NY SCHEDULE



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

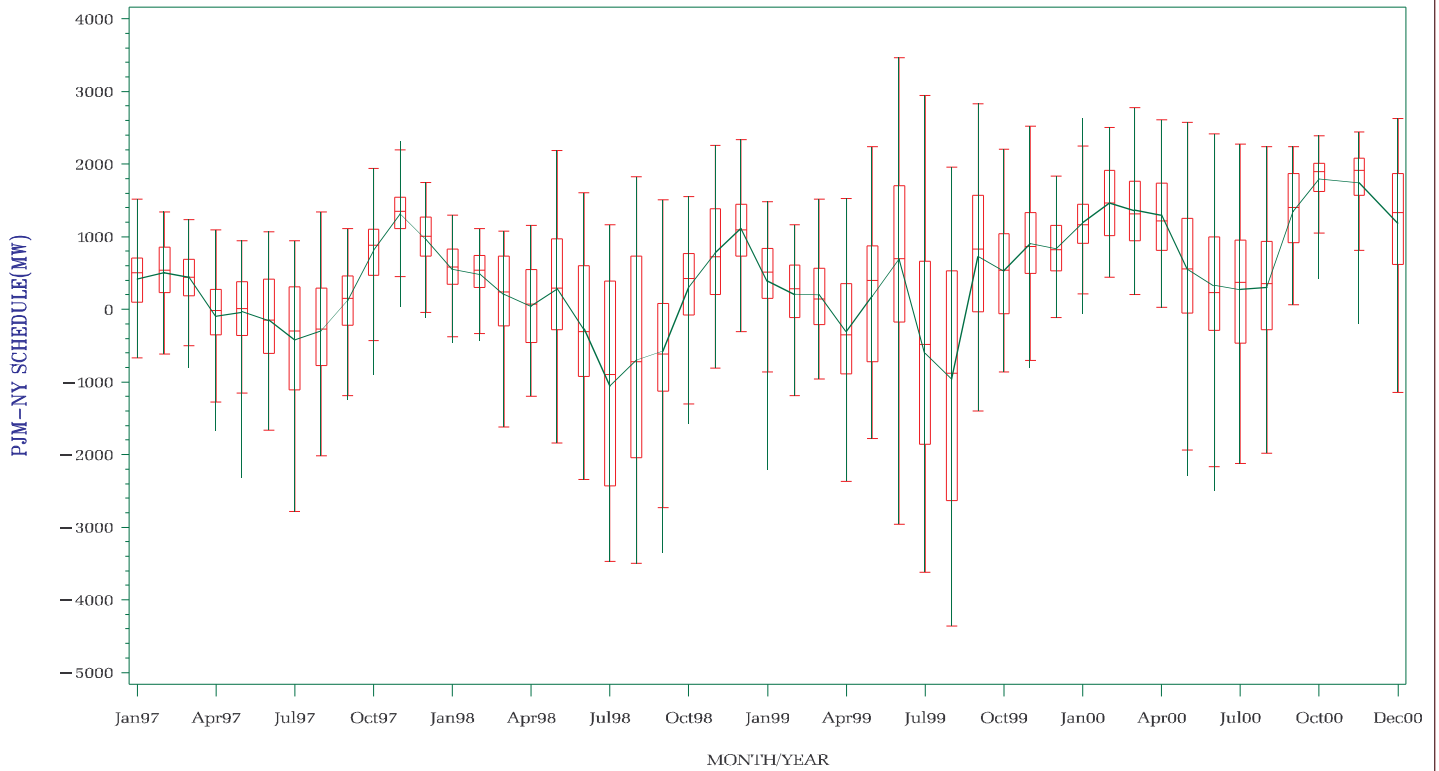
PJM – NY SCHEDULE



1997 1998 1999 2000

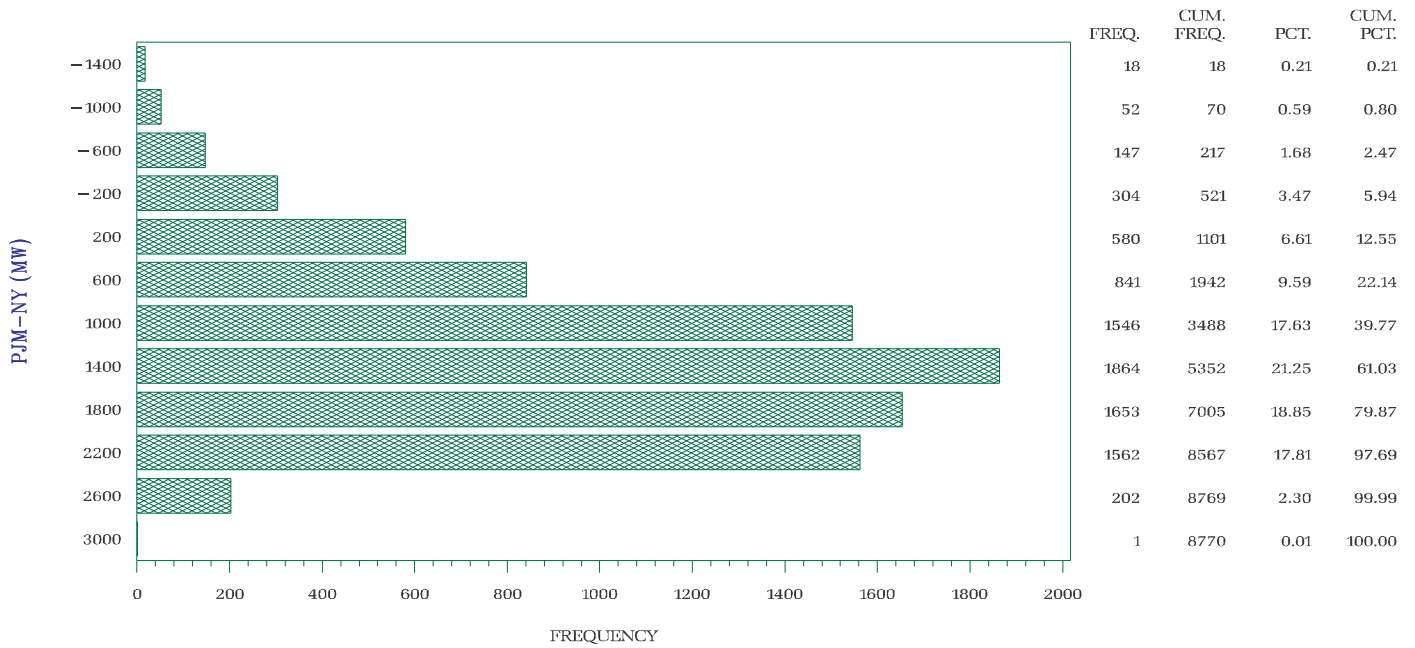
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

PJM – NY SCHEDULE



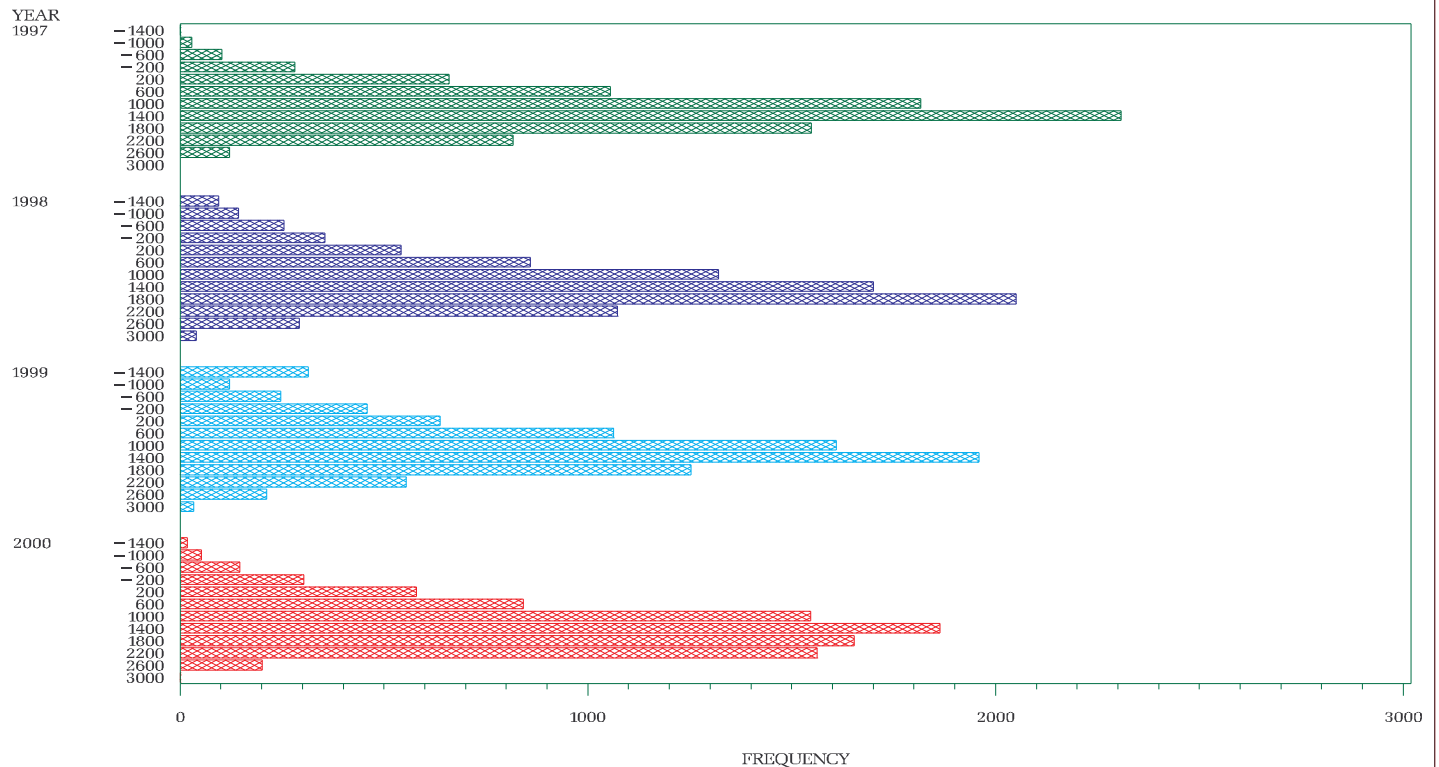
NYISO Transmission Use Statistics For January-December 2000

PJM-NY



NYISO Transmission Use Statistics For January 1997-December 2000

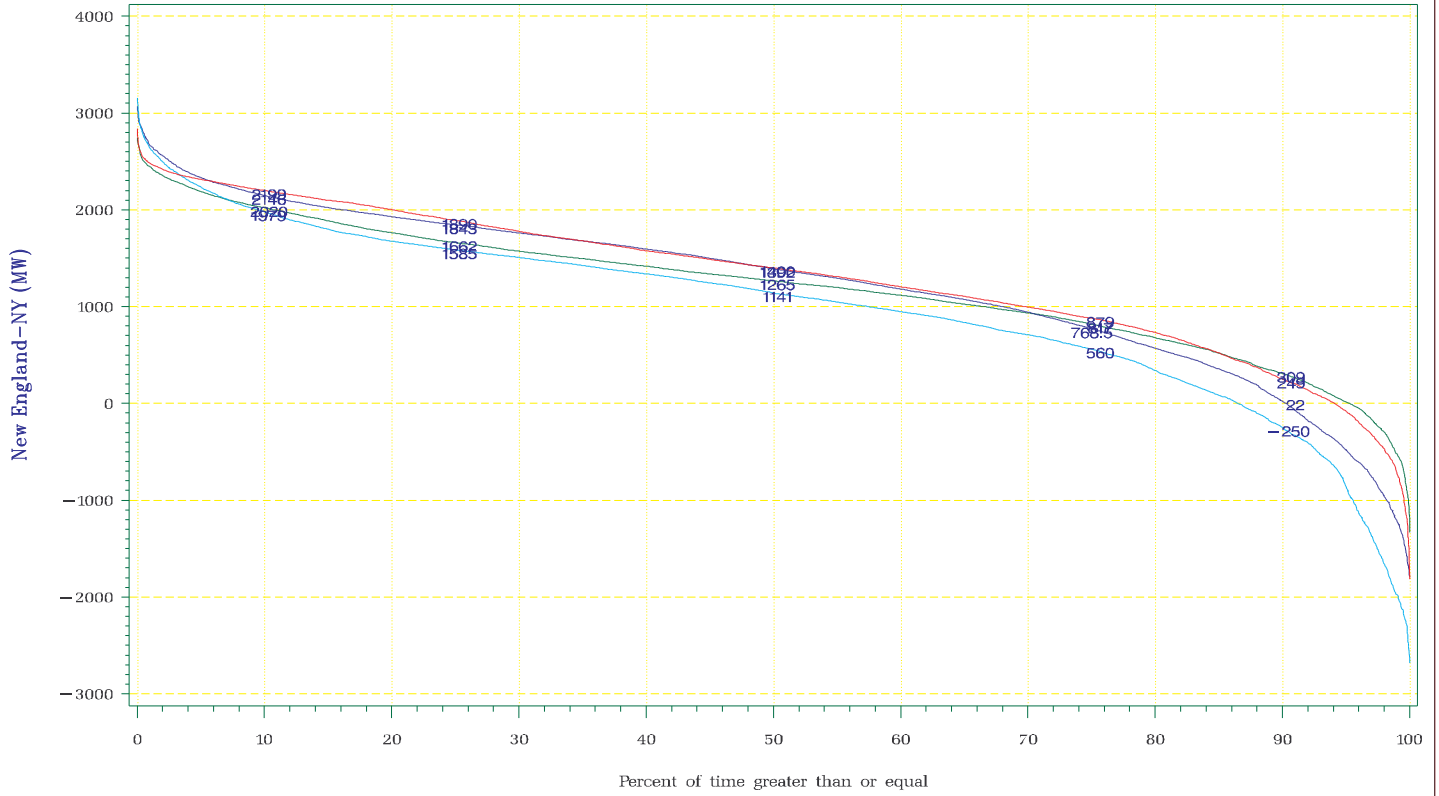
PJM-NY



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

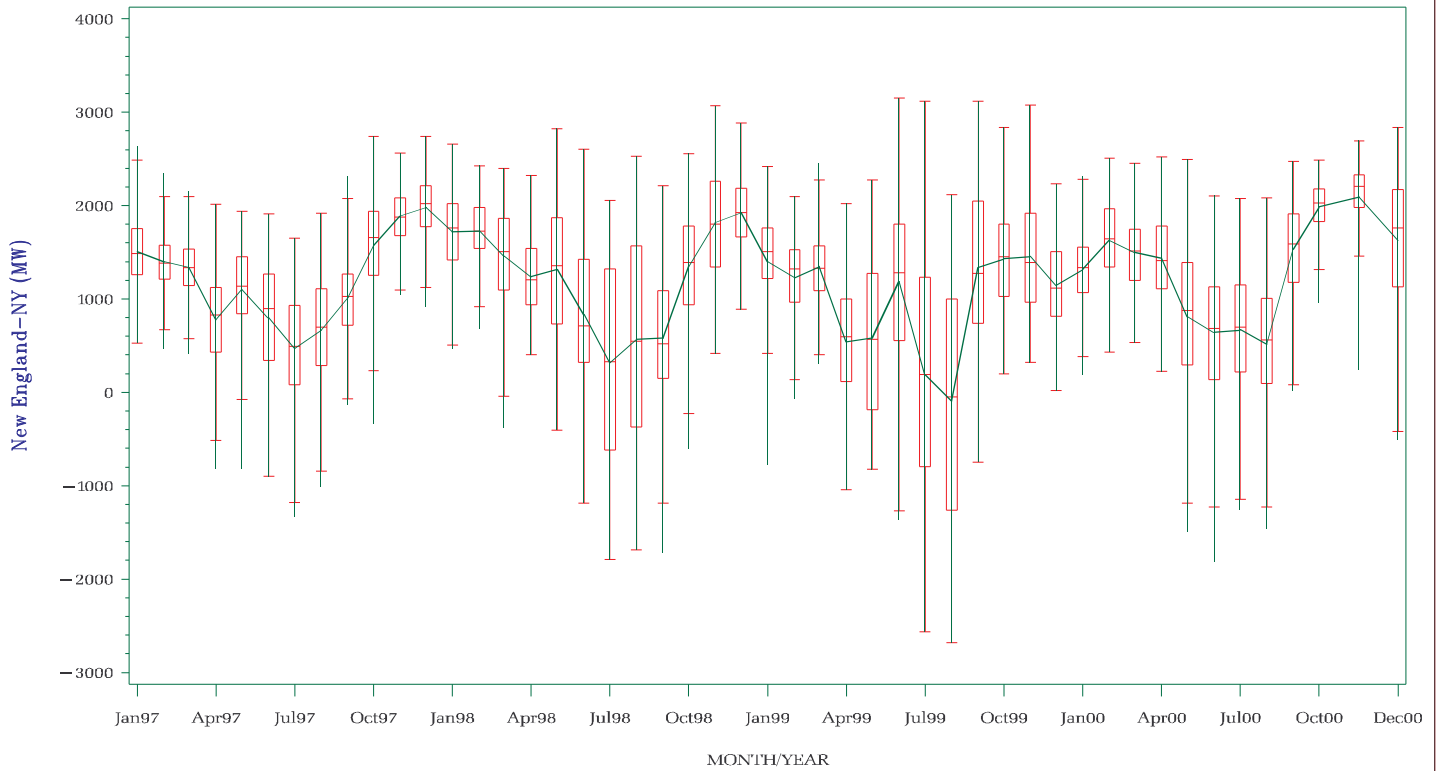
PJM – NY



1997 1998 1999 2000

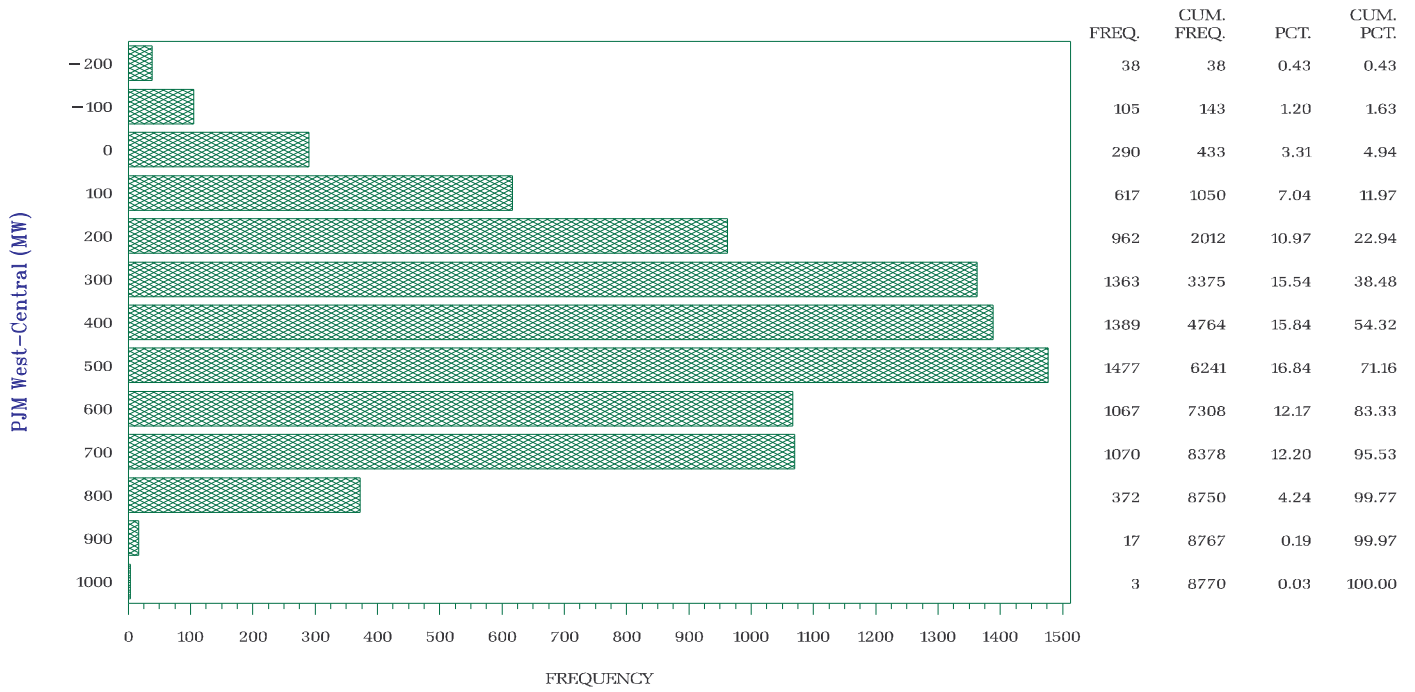
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

PJM – NY



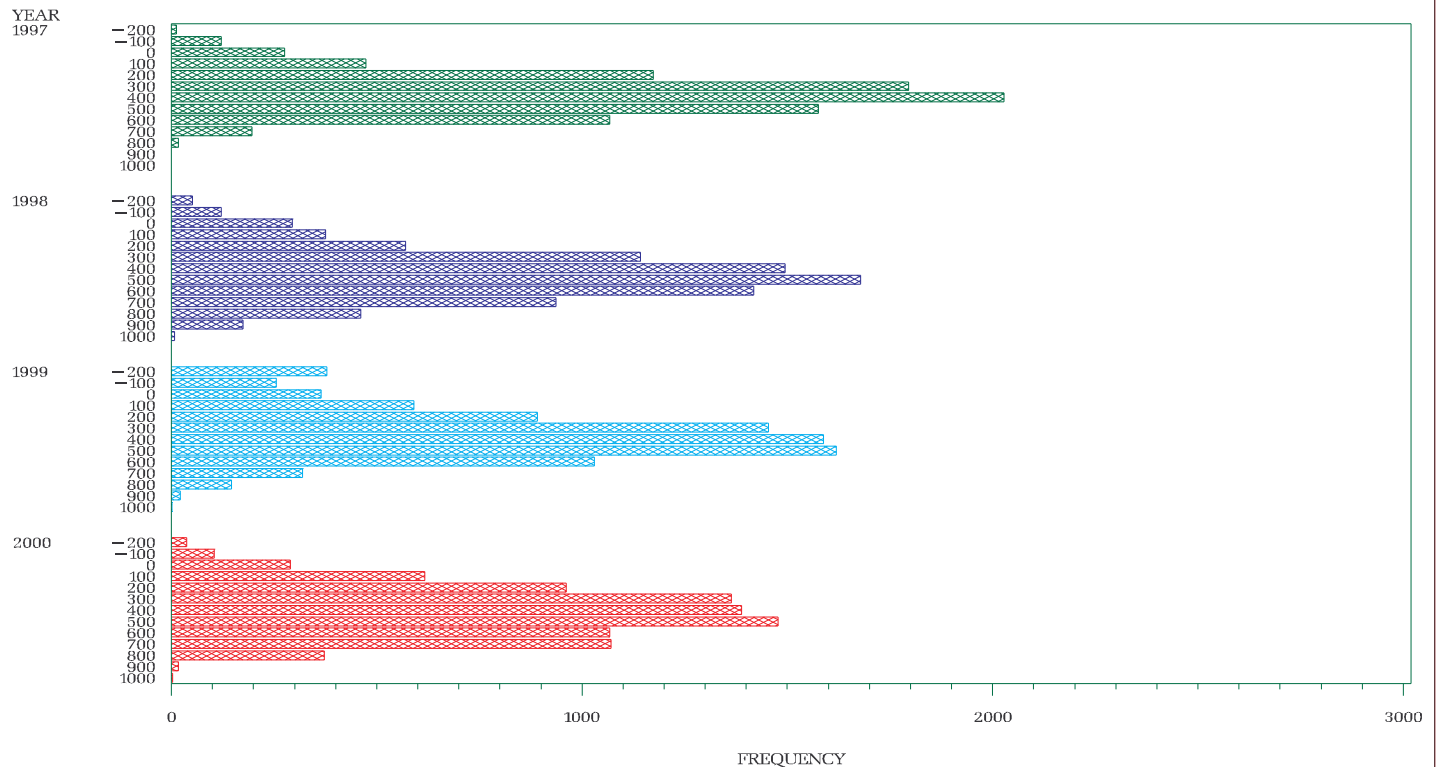
NYISO Transmission Use Statistics For January–December 2000

PJM West–Central



NYISO Transmission Use Statistics For January 1997–December 2000

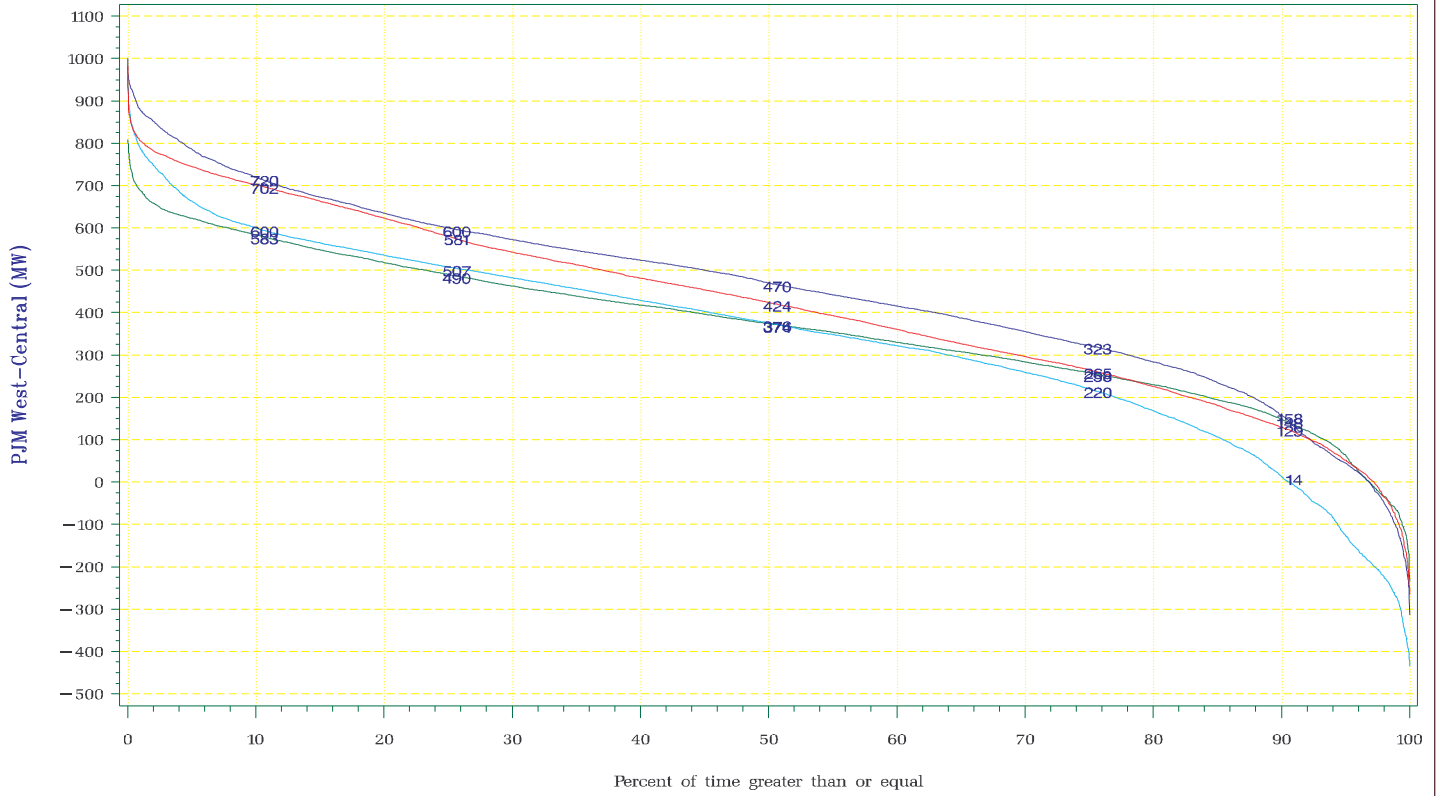
PJM West–Central



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

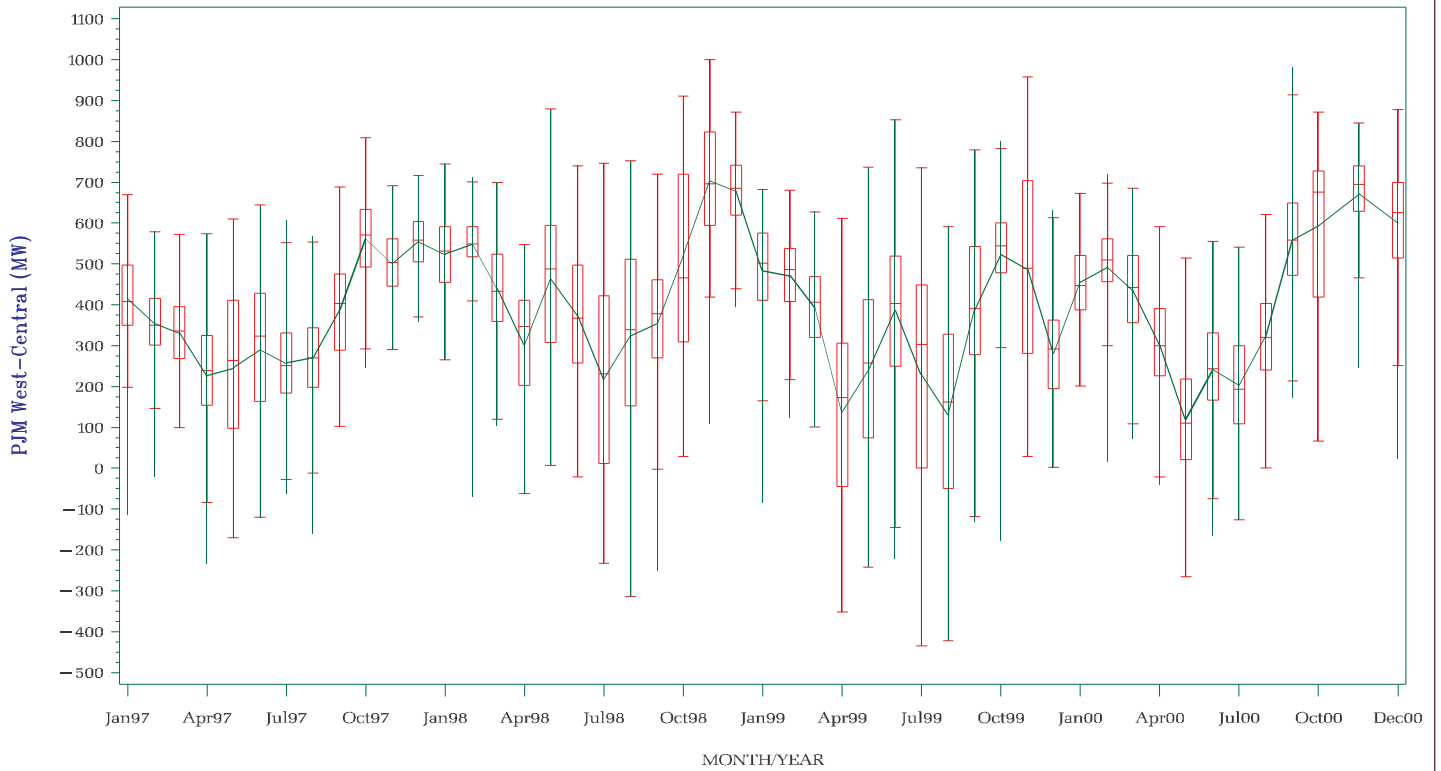
PJM West – Central



1997 1998 1999 2000

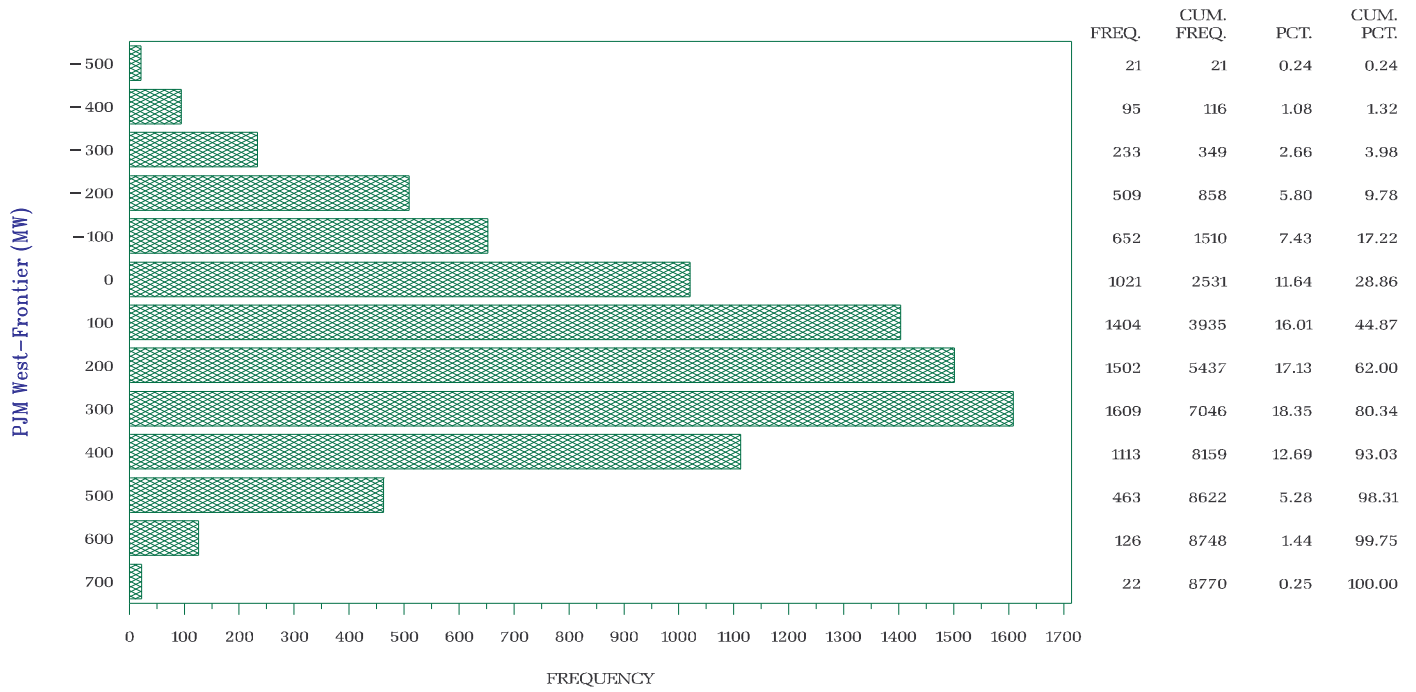
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

PJM West – Central



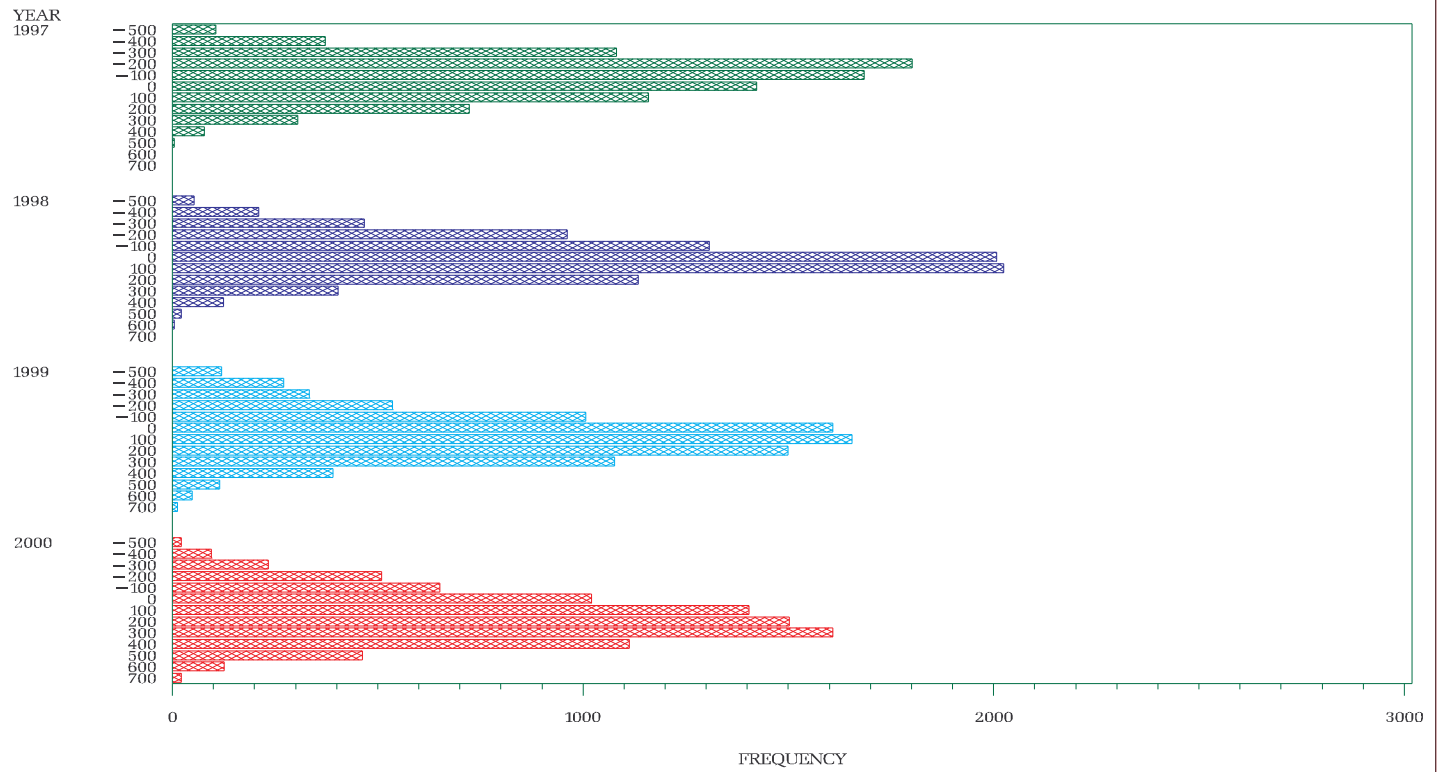
NYISO Transmission Use Statistics For January–December 2000

PJM West – Frontier



NYISO Transmission Use Statistics For January 1997–December 2000

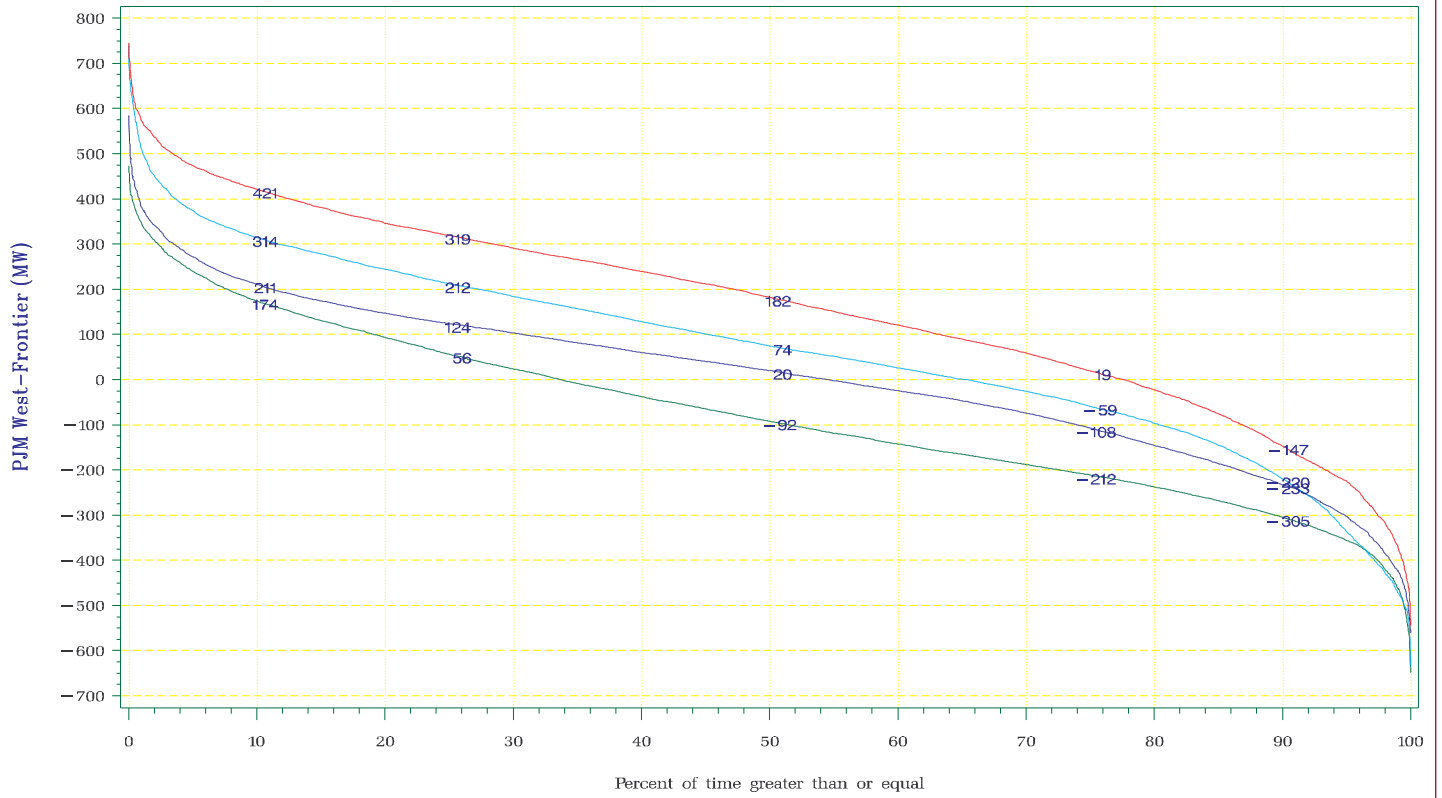
PJM West – Frontier



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

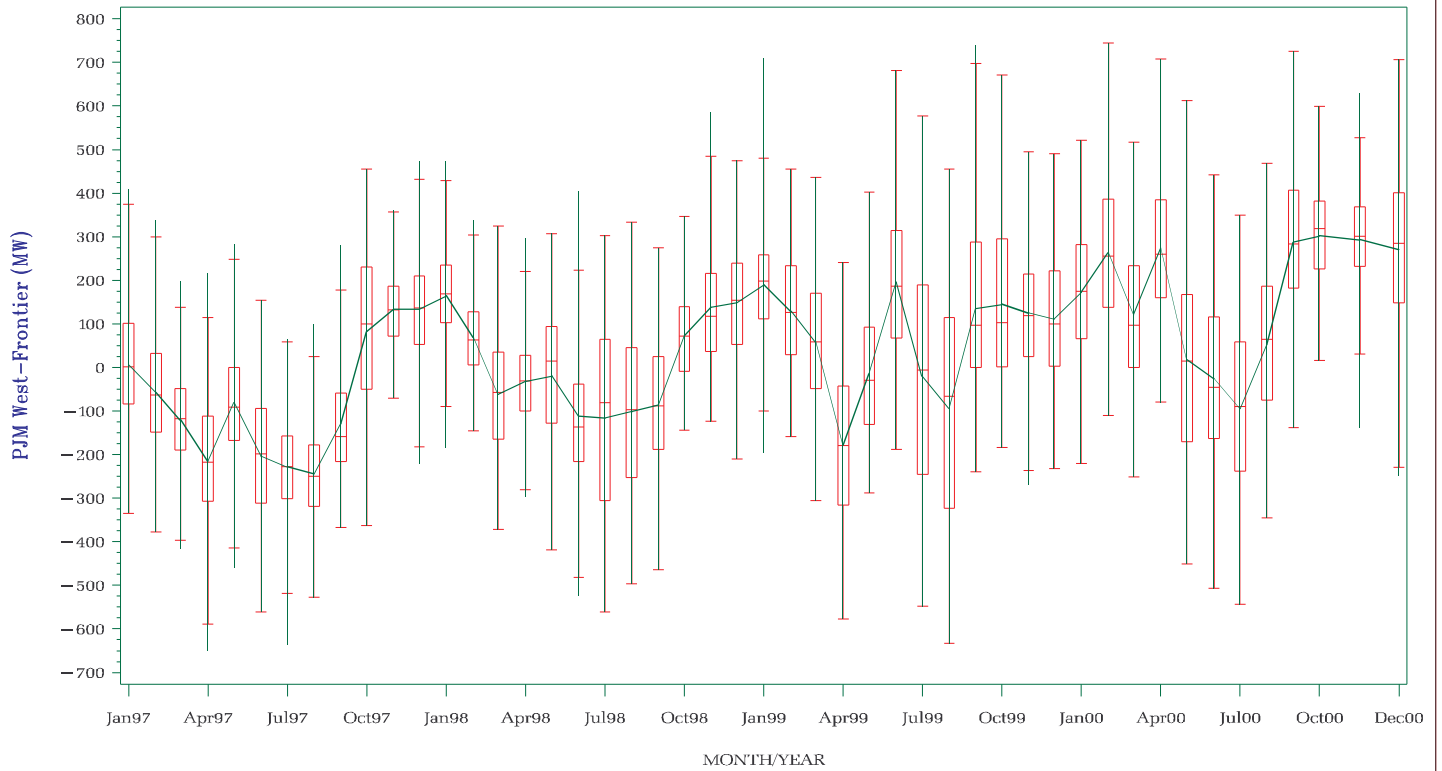
PJM West – Frontier



1997 1998 1999 2000

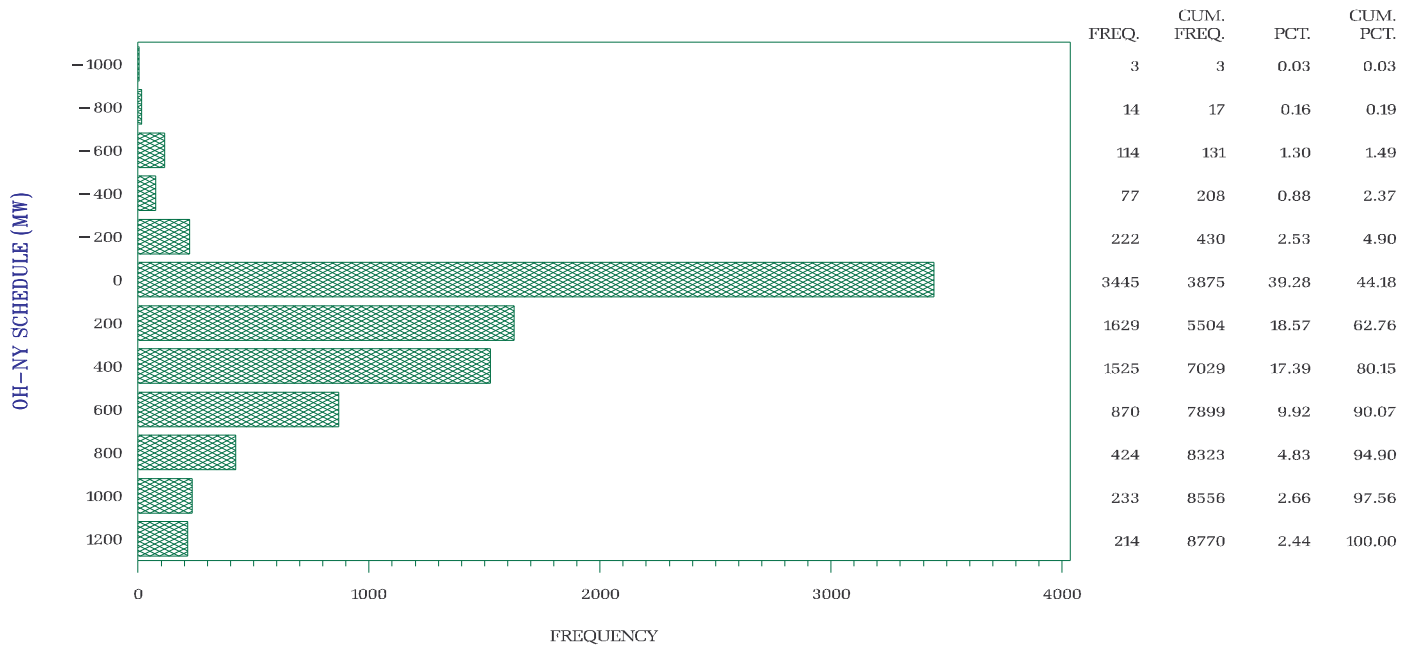
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

PJM West – Frontier



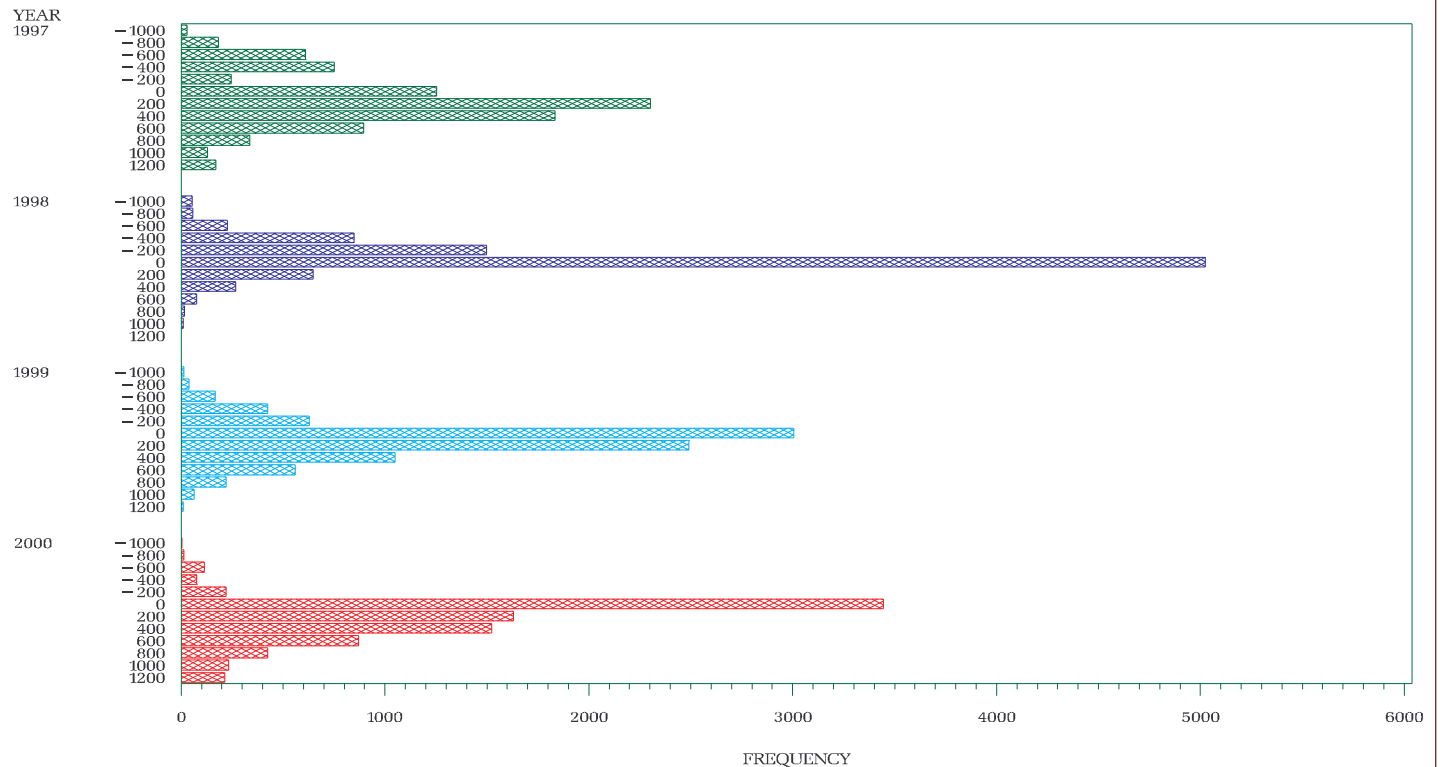
NYISO Transmission Use Statistics For January-December 2000

OH-NY SCHEDULE



NYISO Transmission Use Statistics For January 1997-December 2000

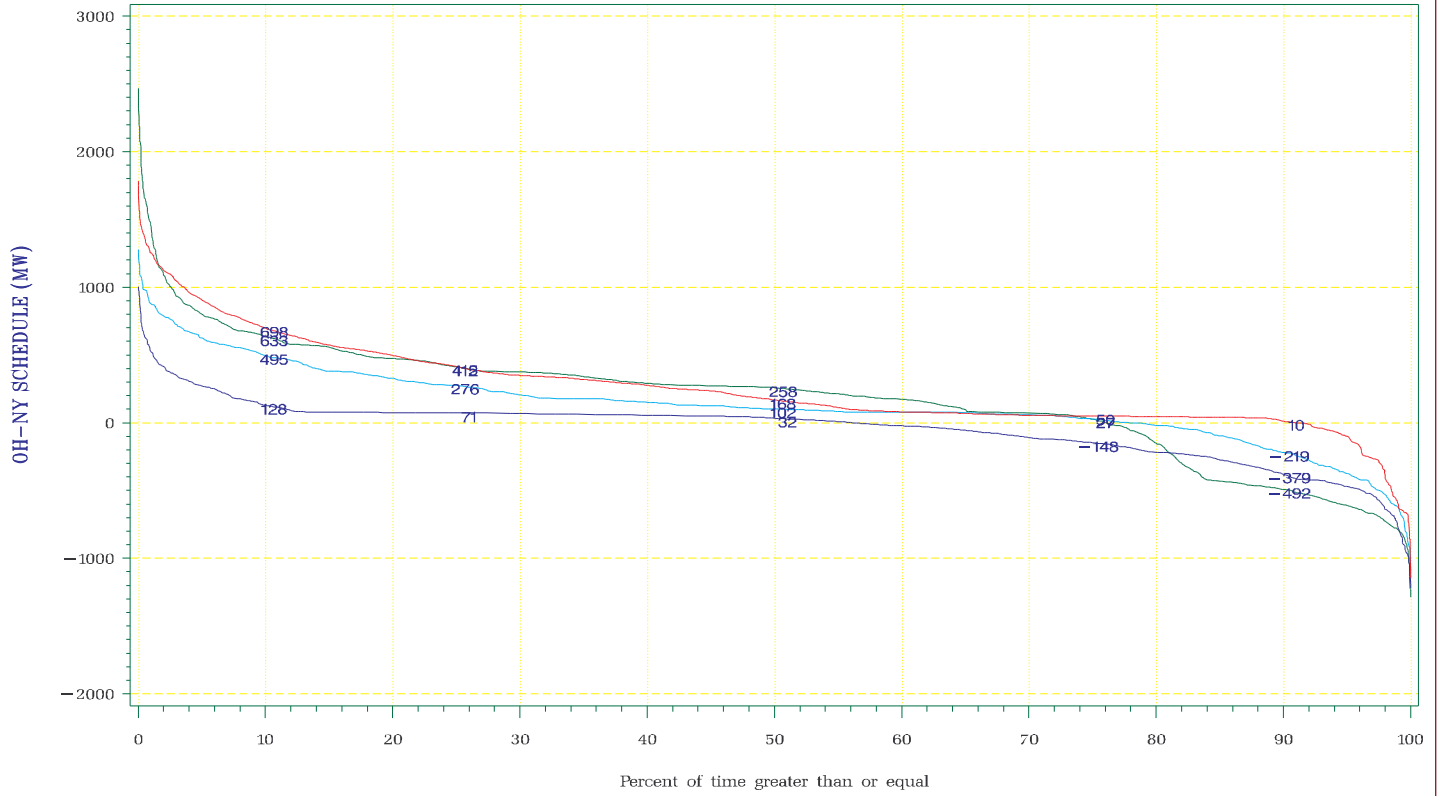
OH-NY SCHEDULE



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

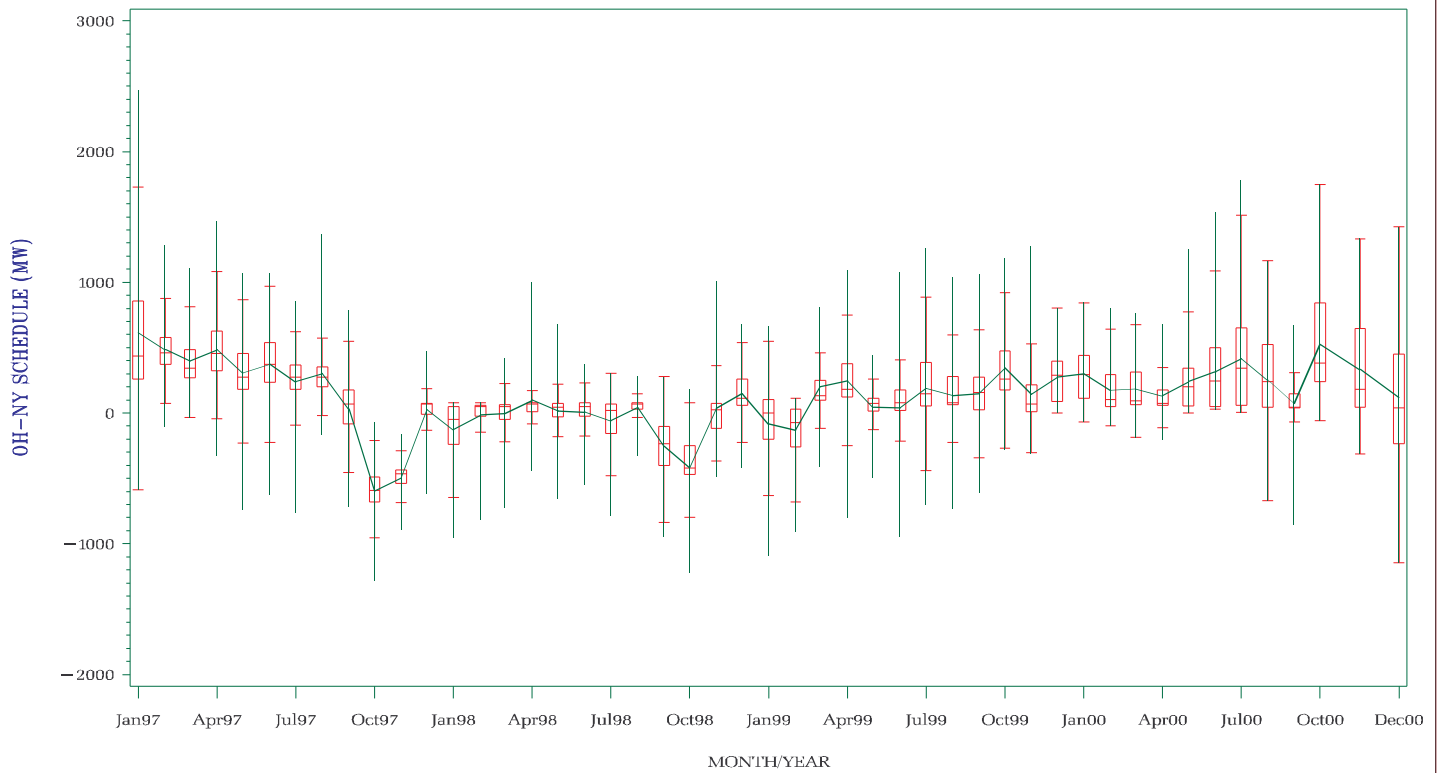
OH – NY SCHEDULE



1997 1998 1999 2000

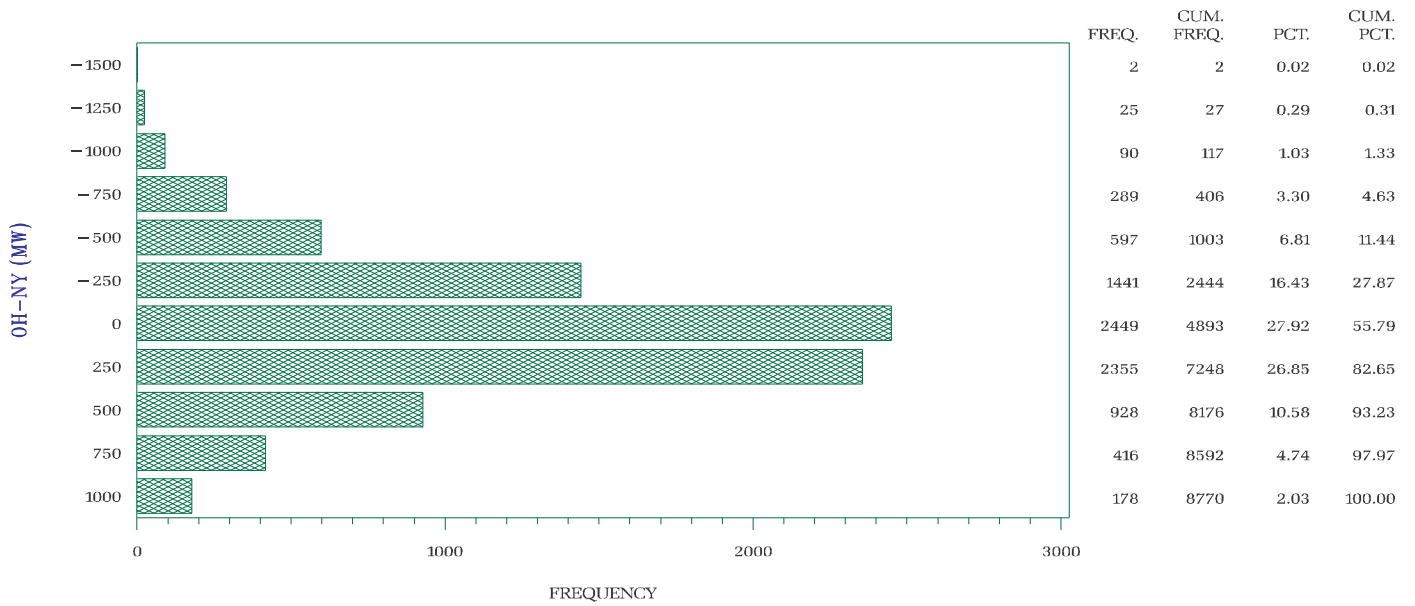
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

OH – NY SCHEDULE



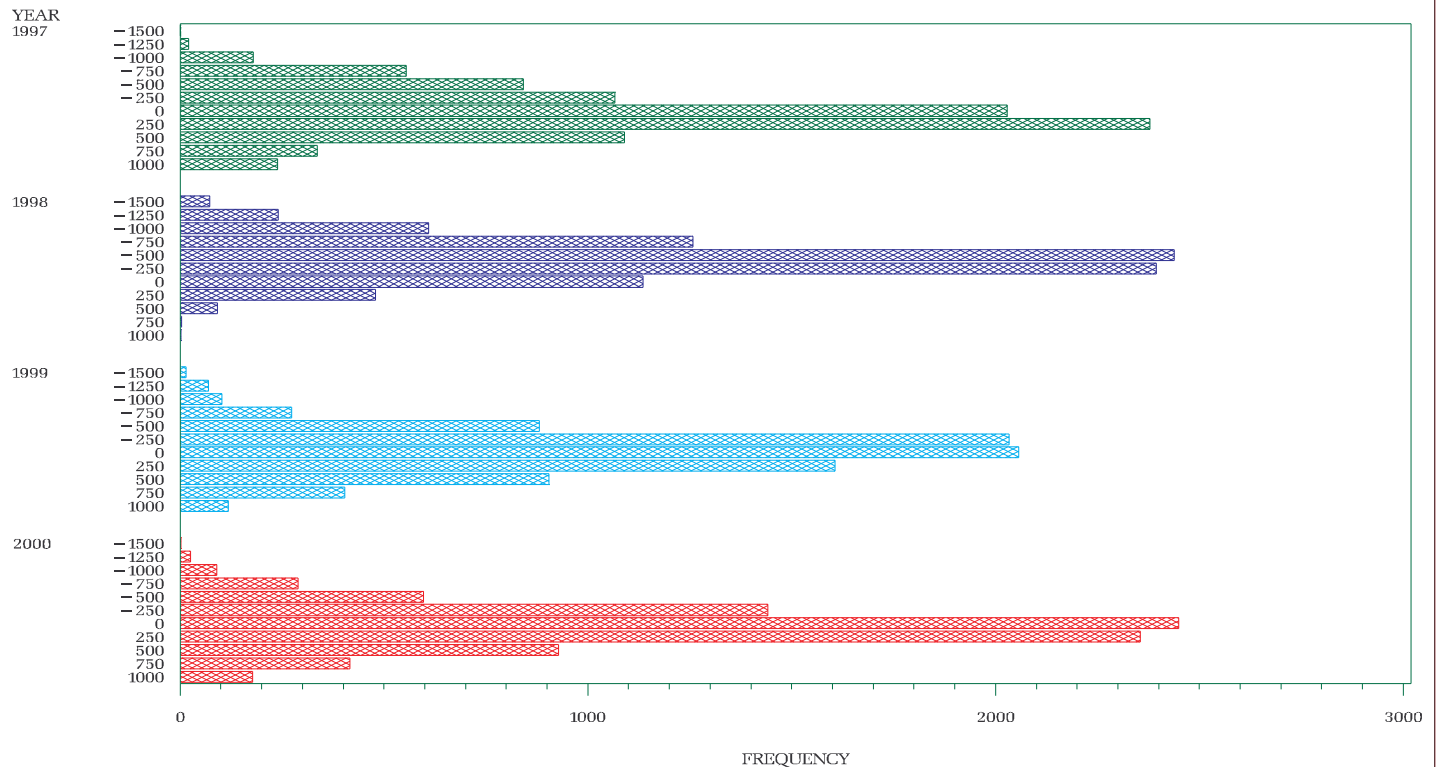
NYISO Transmission Use Statistics For January-December 2000

OH-NY



NYISO Transmission Use Statistics For January 1997-December 2000

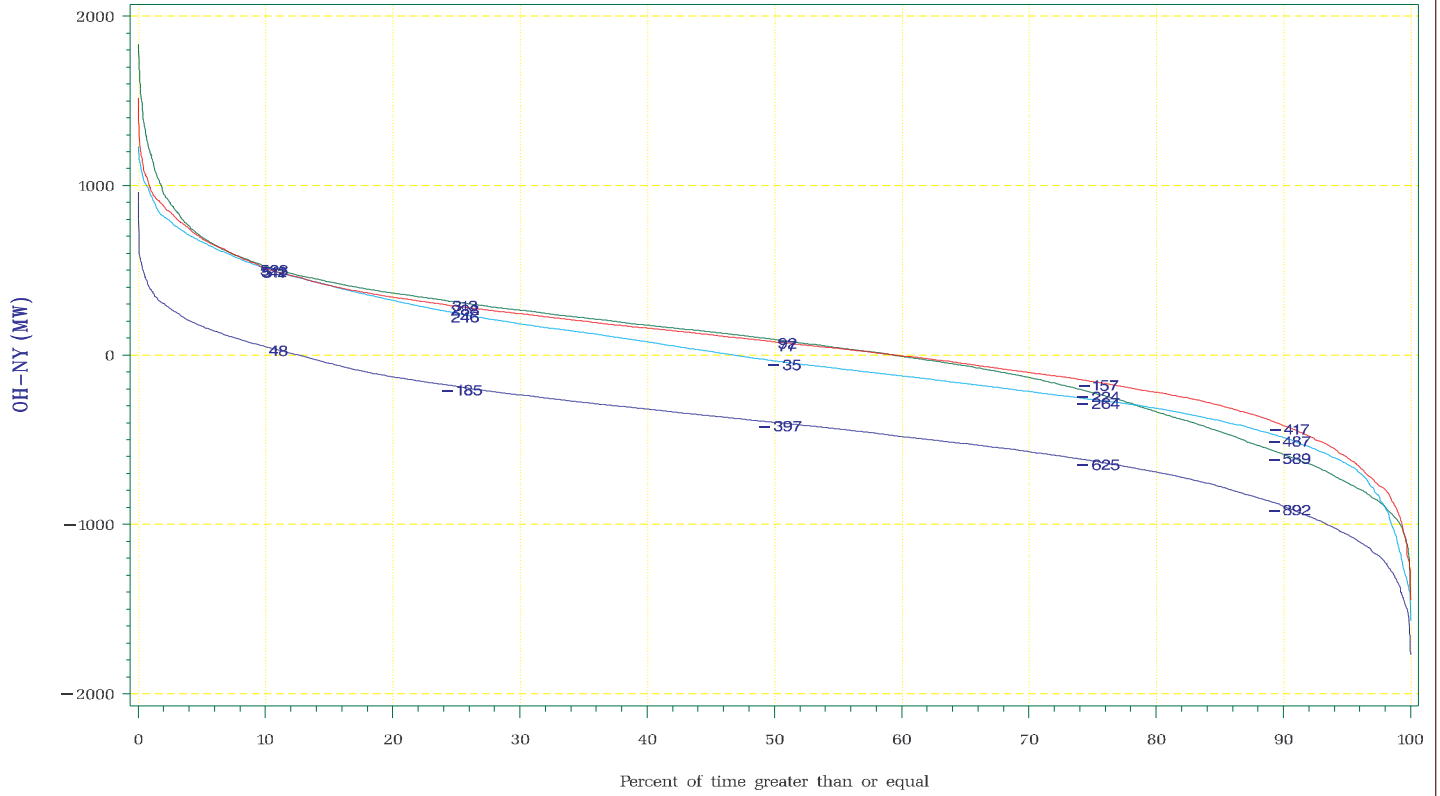
OH-NY



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

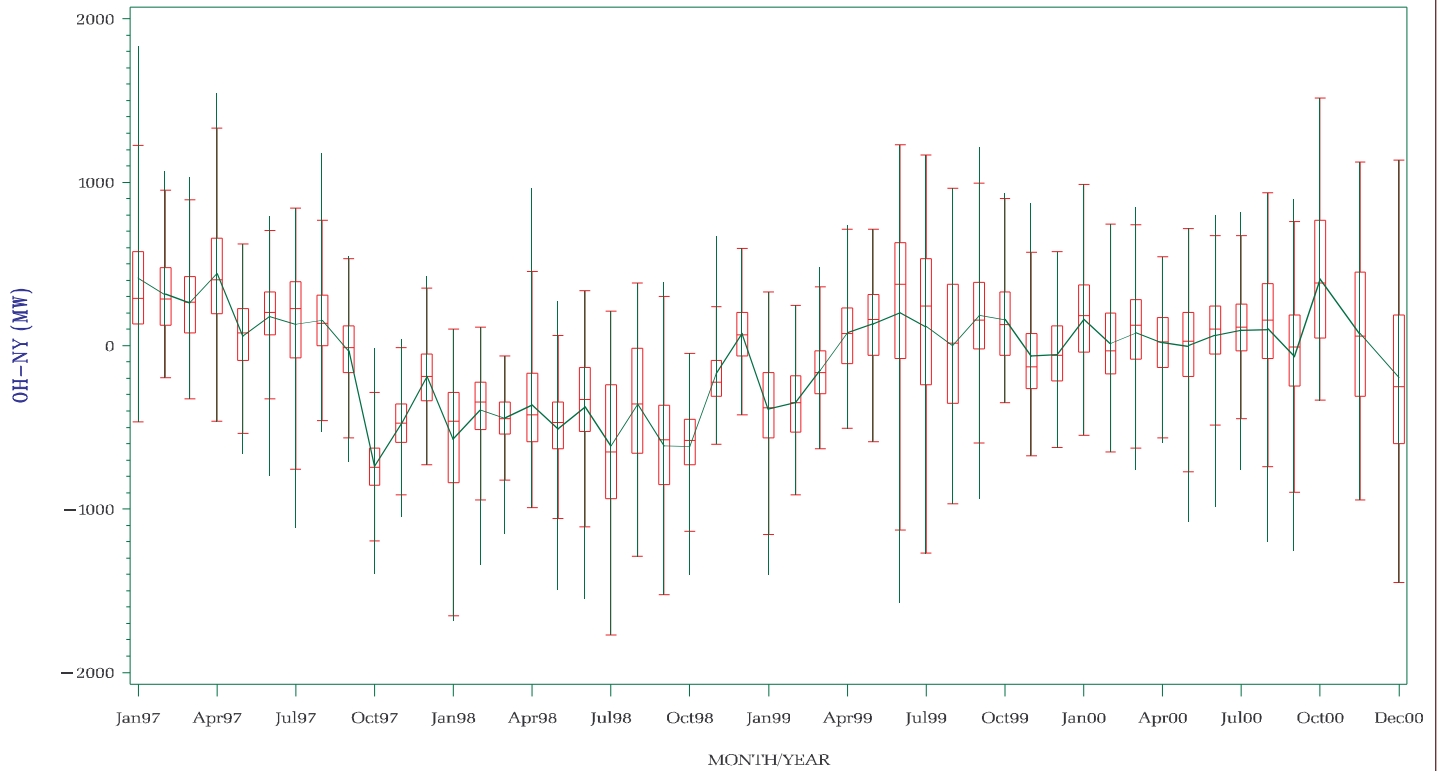
OH-NY



1997 1998 1999 2000

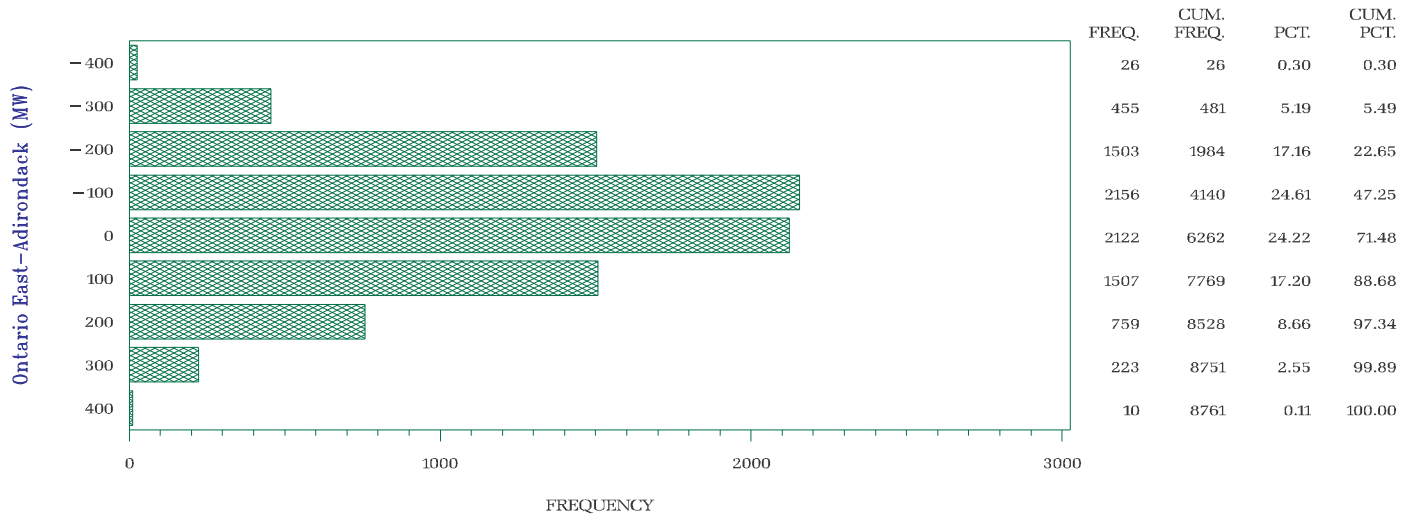
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

OH-NY



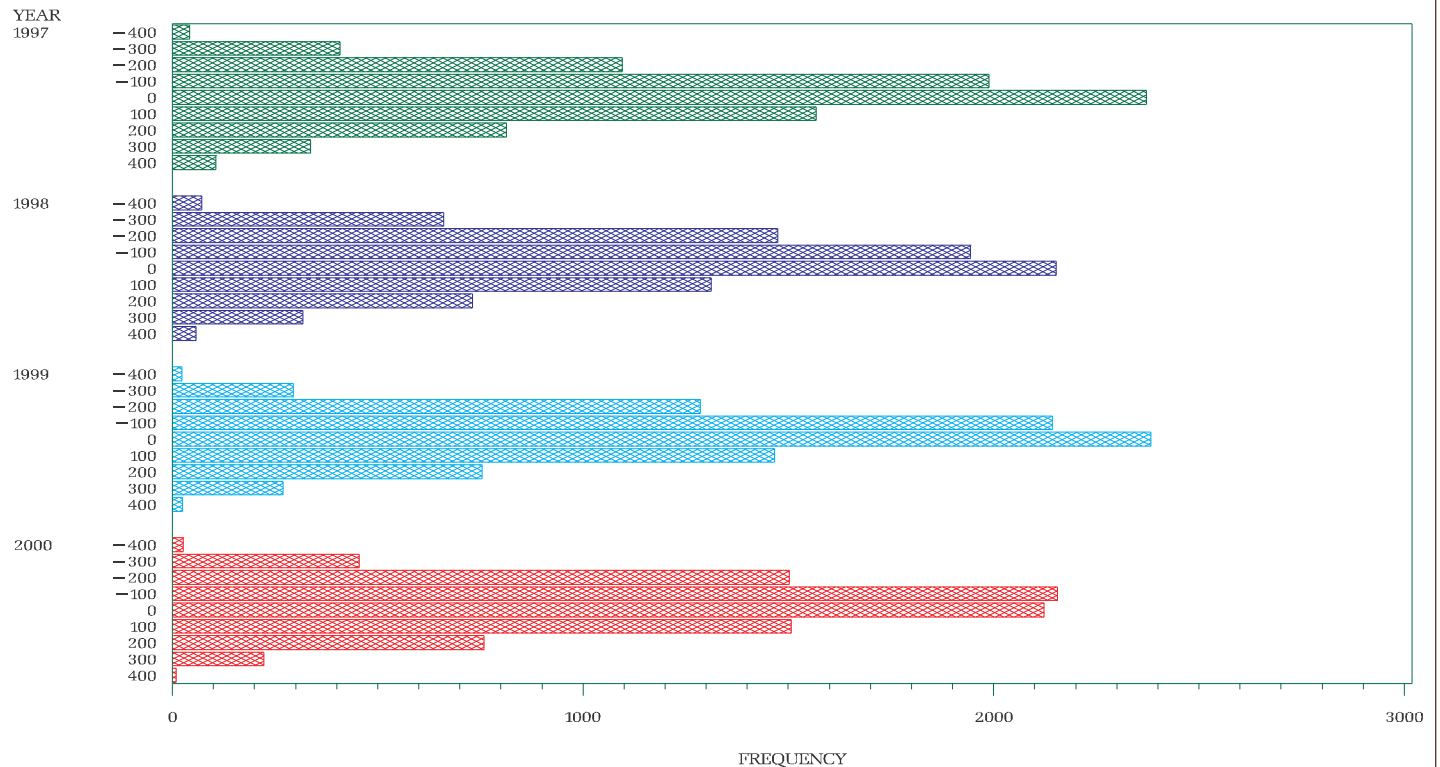
NYISO Transmission Use Statistics For January–December 2000

Ontario East – Adirondack



NYISO Transmission Use Statistics For January 1997–December 2000

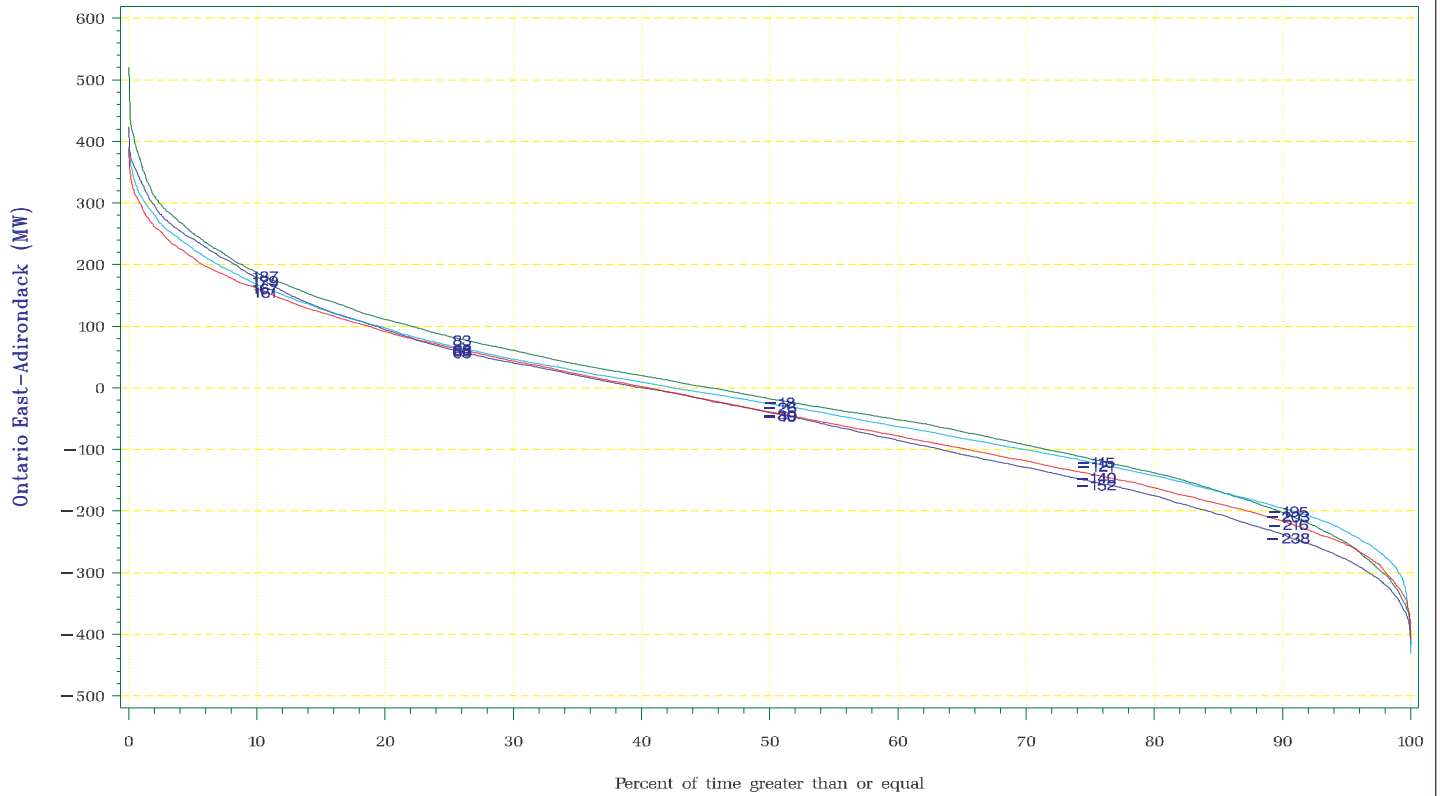
Ontario East – Adirondack



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

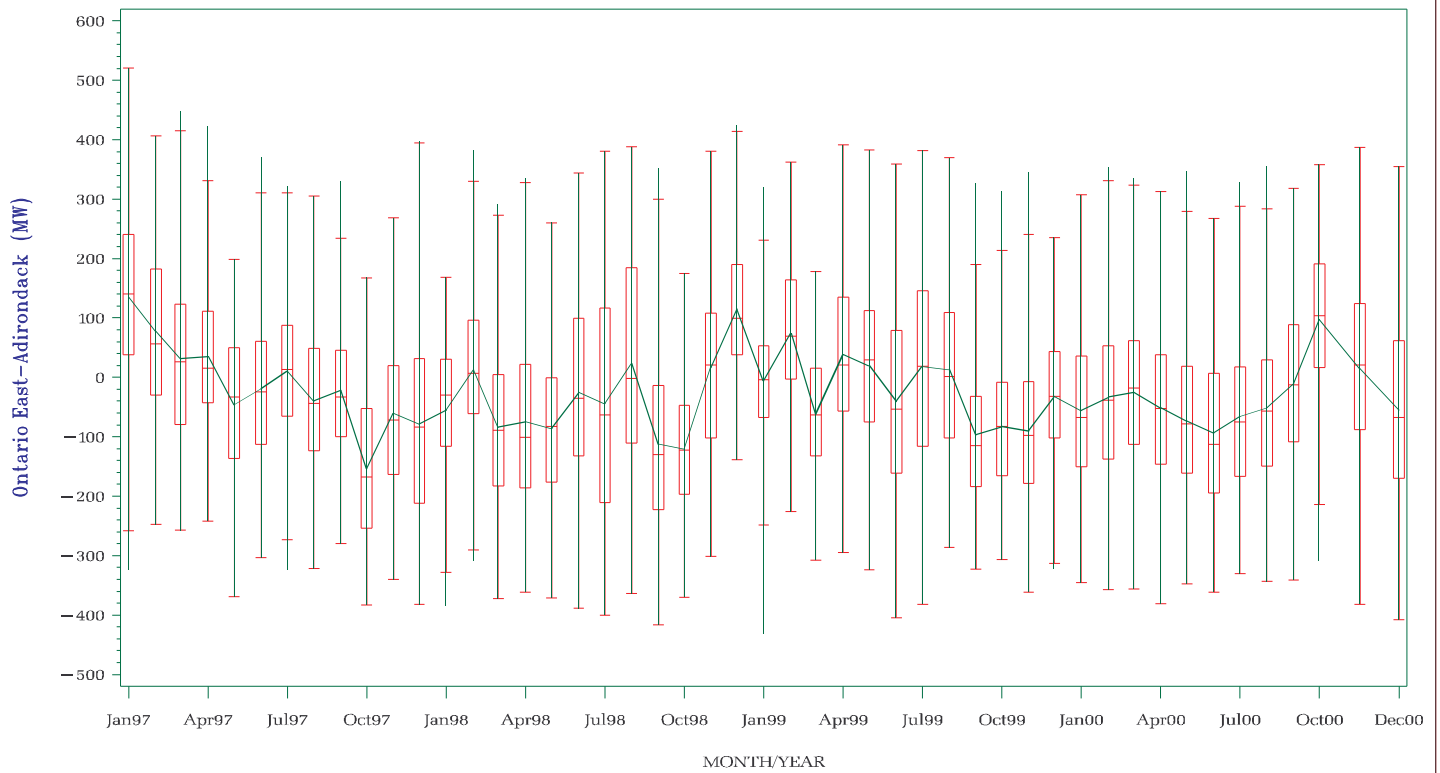
Ontario East – Adirondack



1997 1998 1999 2000

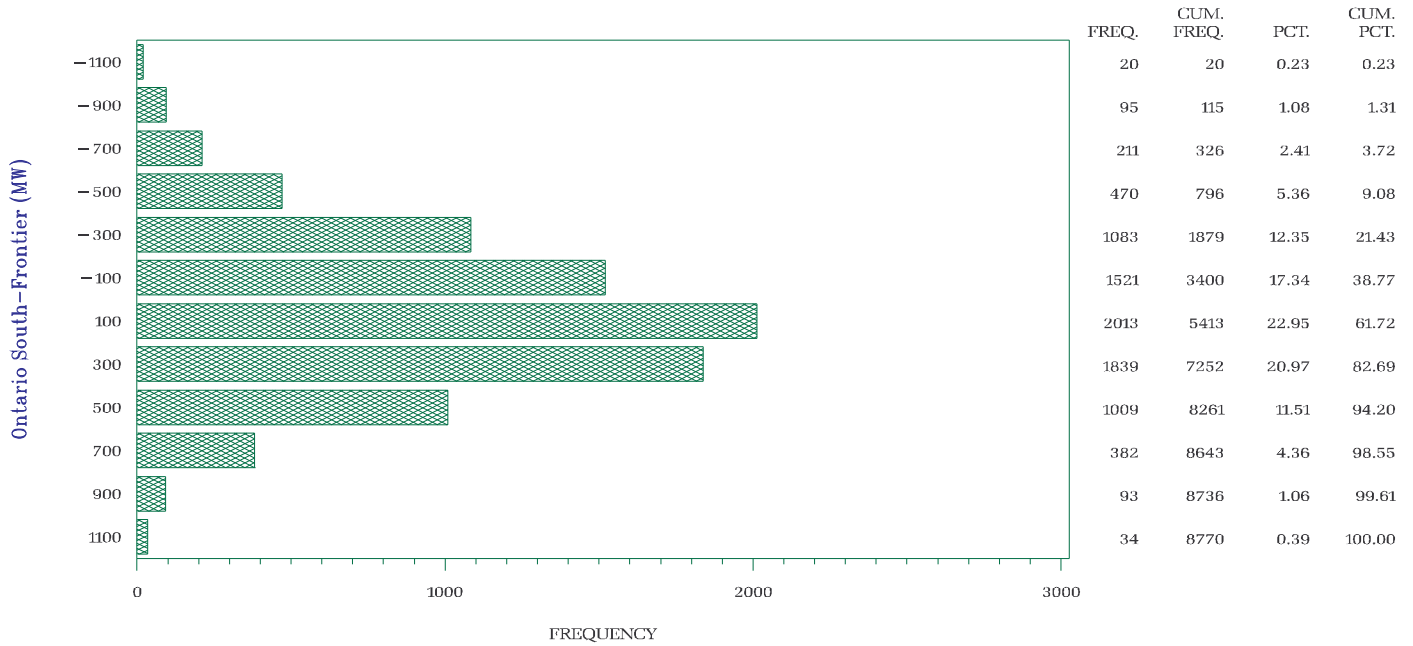
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

Ontario East – Adirondack



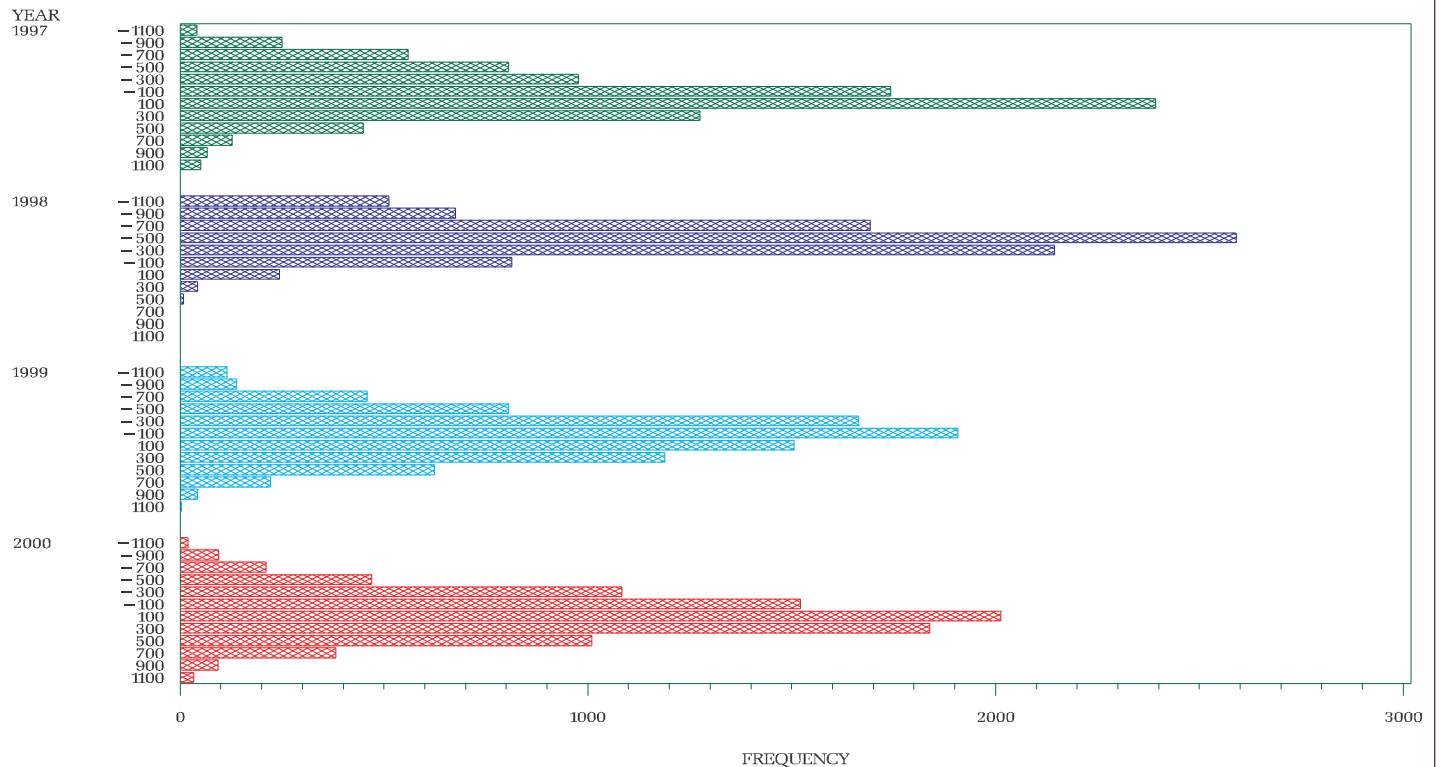
NYISO Transmission Use Statistics For January–December 2000

Ontario South – Frontier



NYISO Transmission Use Statistics For January 1997–December 2000

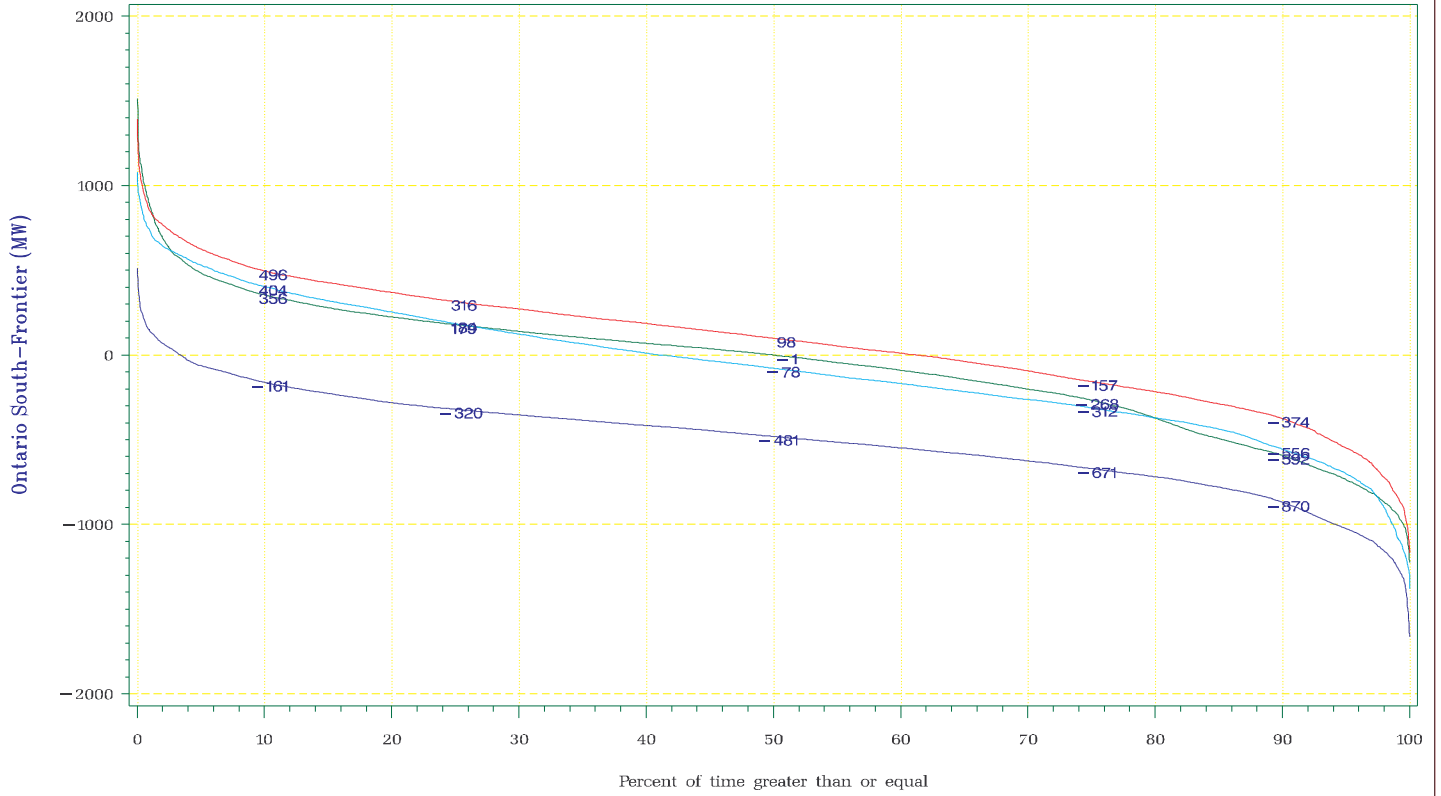
Ontario South – Frontier



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

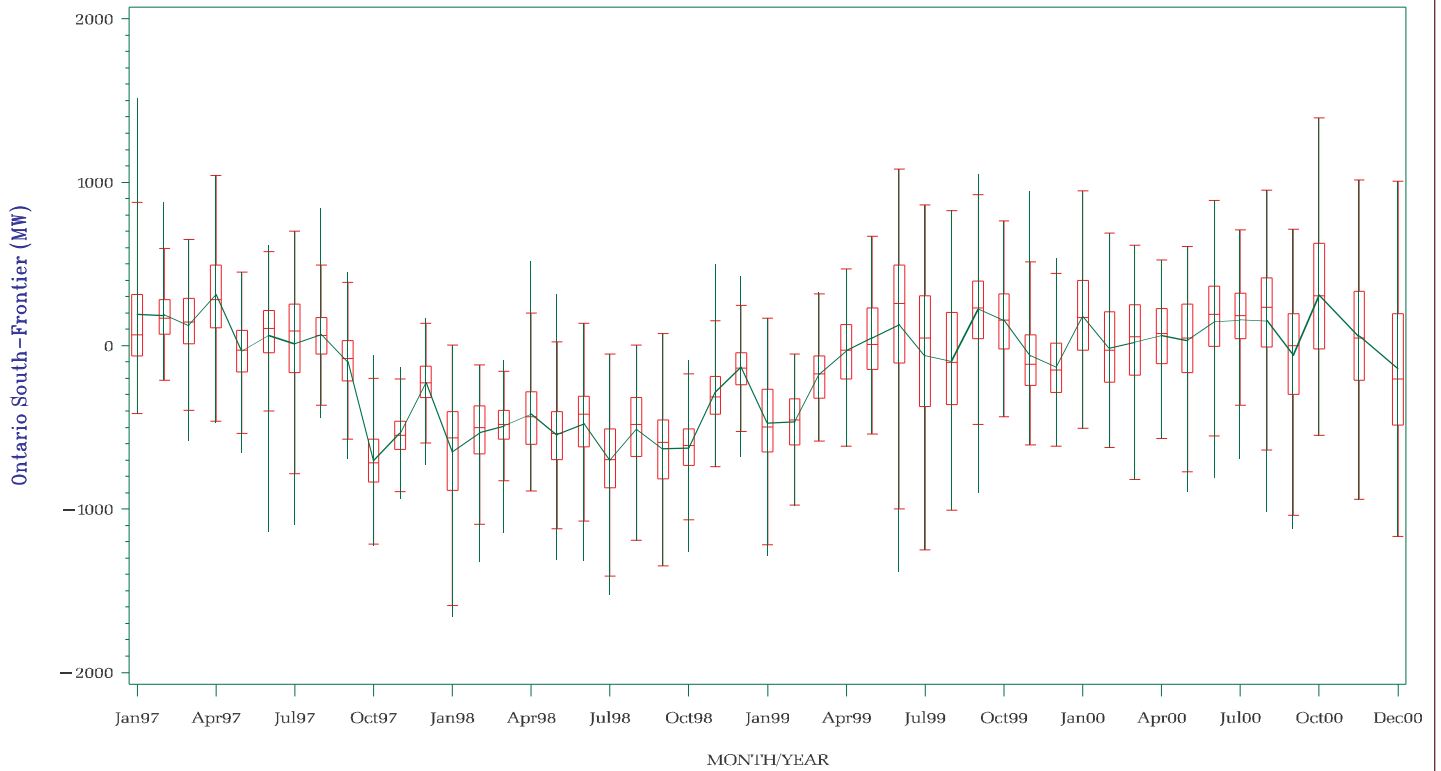
Ontario South – Frontier



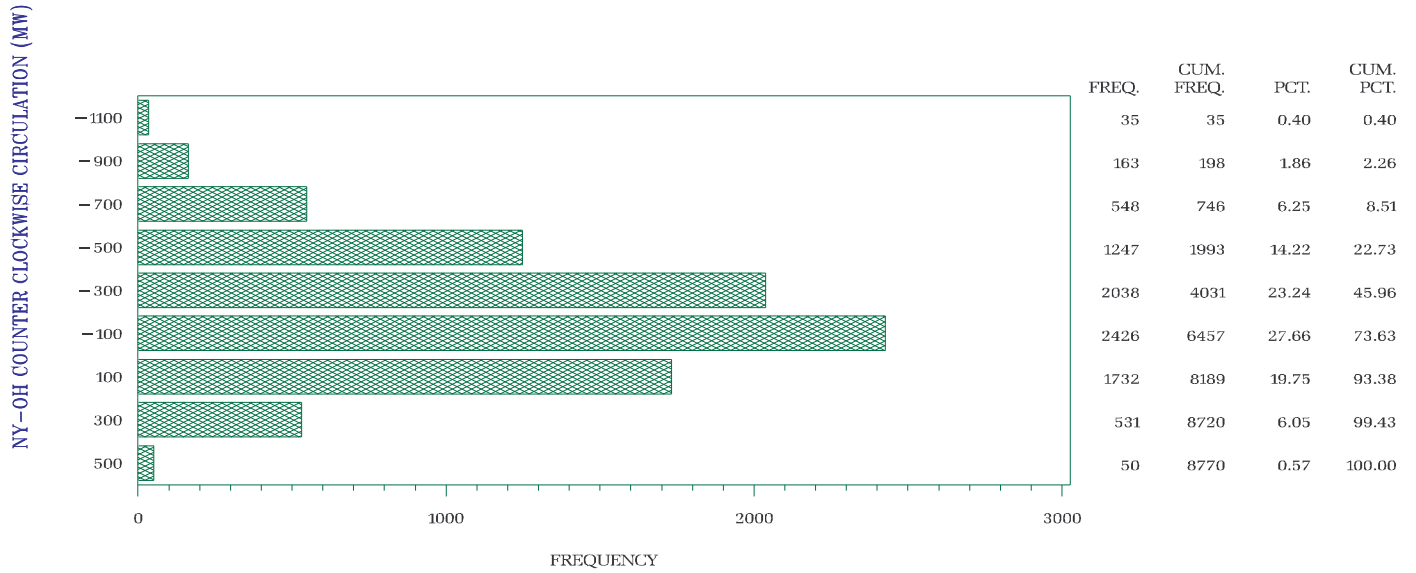
1997 1998 1999 2000

NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

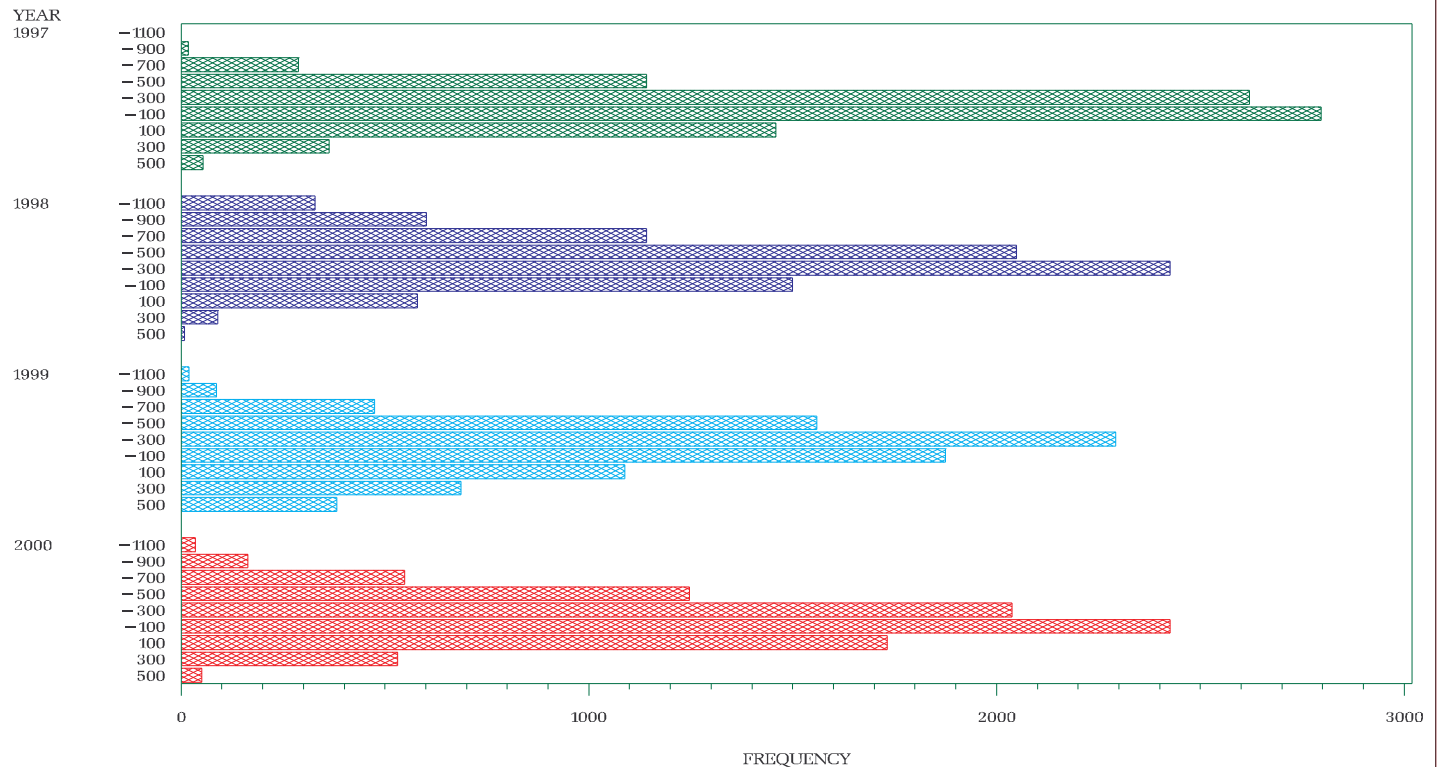
Ontario South – Frontier



NY–OH COUNTER CLOCKWISE CIRCULATION



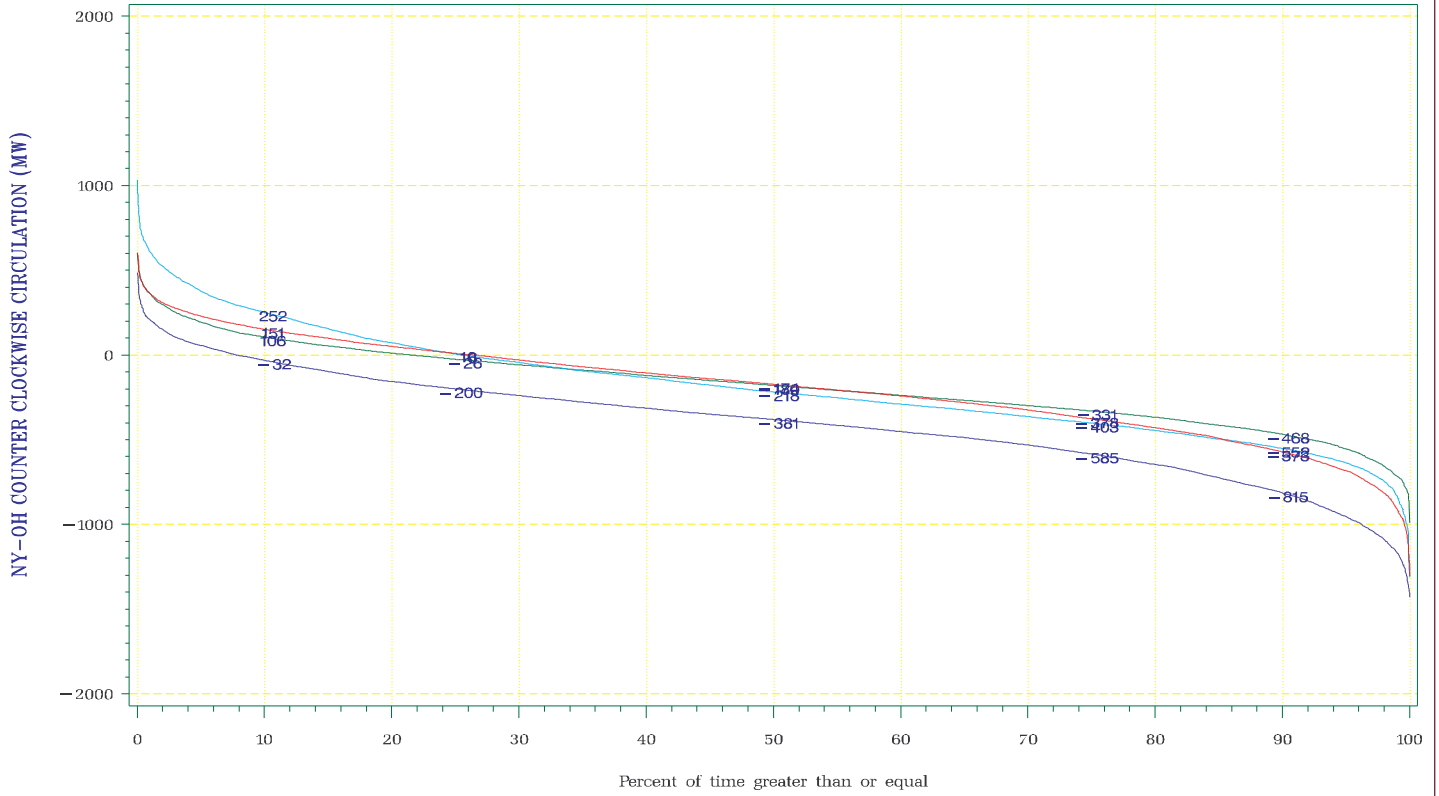
NY–OH COUNTER CLOCKWISE CIRCULATION



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

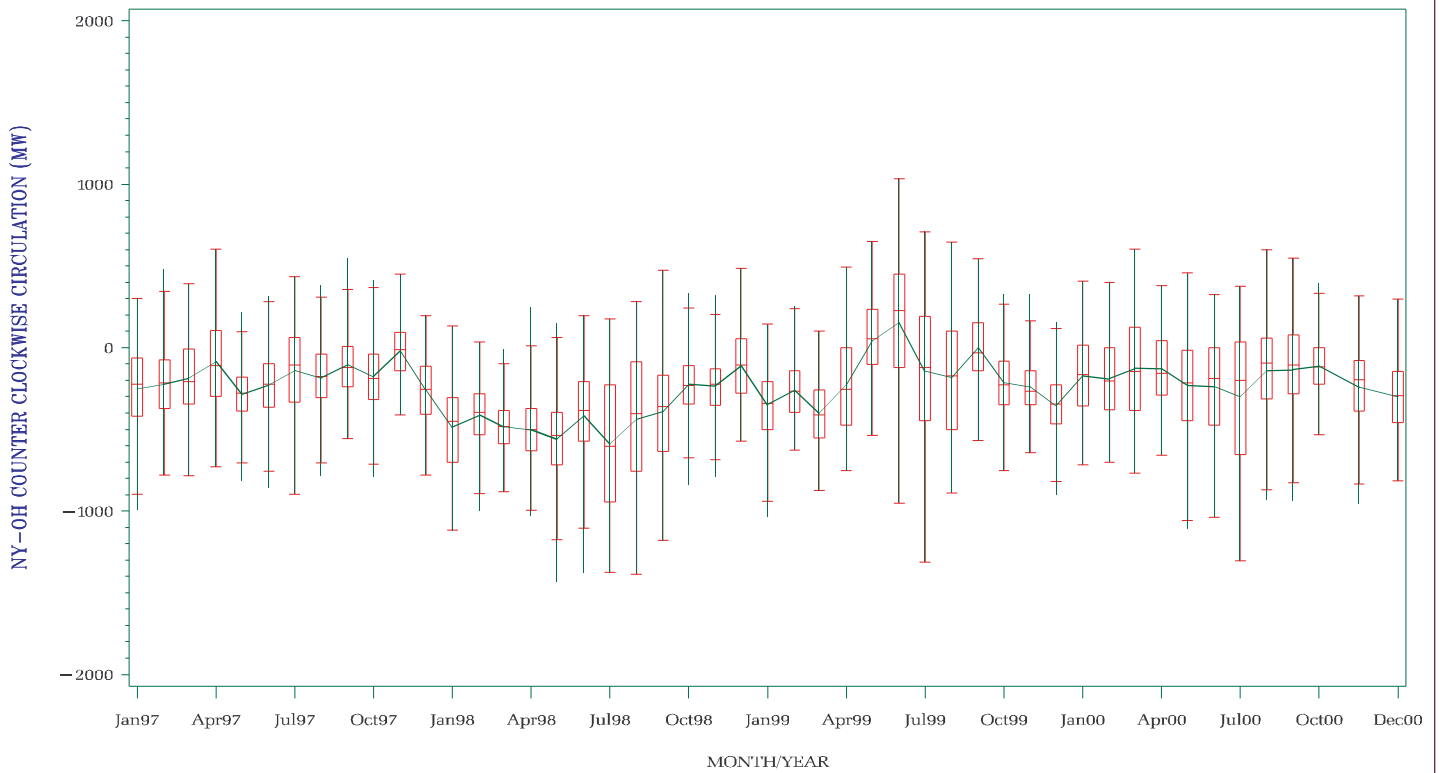
NY-OH COUNTER CLOCKWISE CIRCULATION



1997 1998 1999 2000

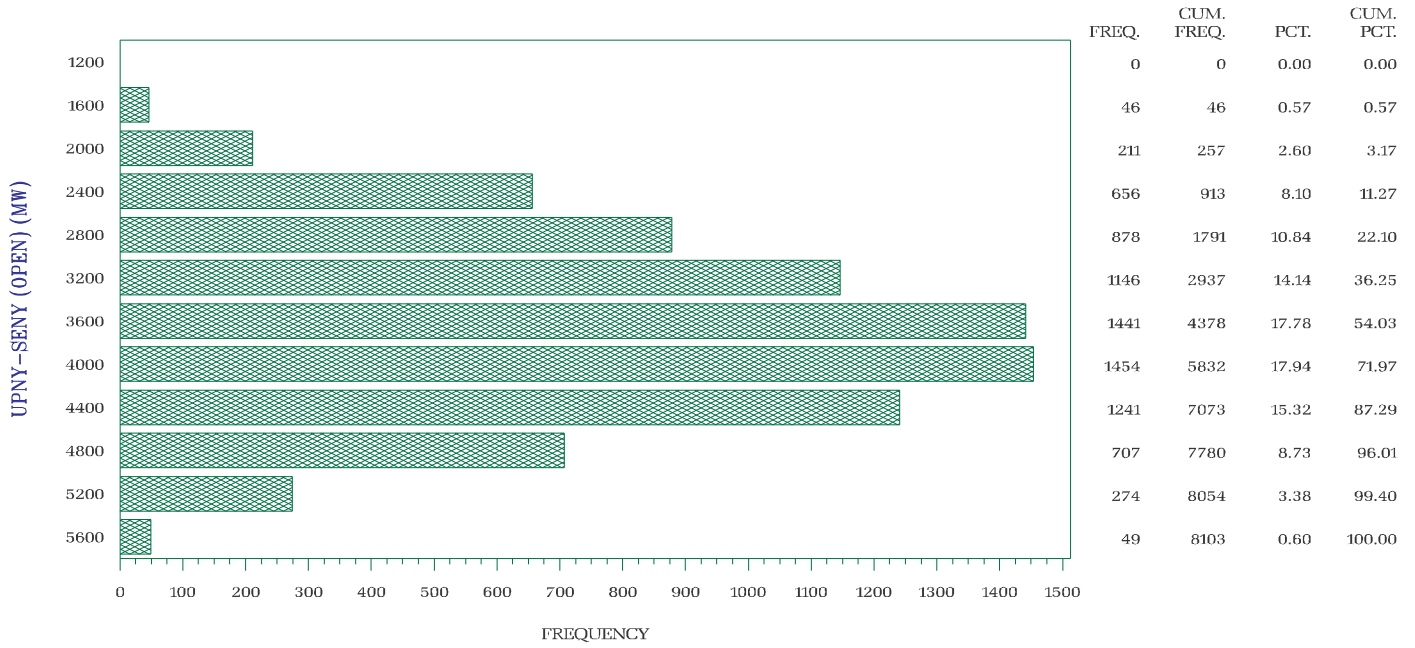
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

NY-OH COUNTER CLOCKWISE CIRCULATION



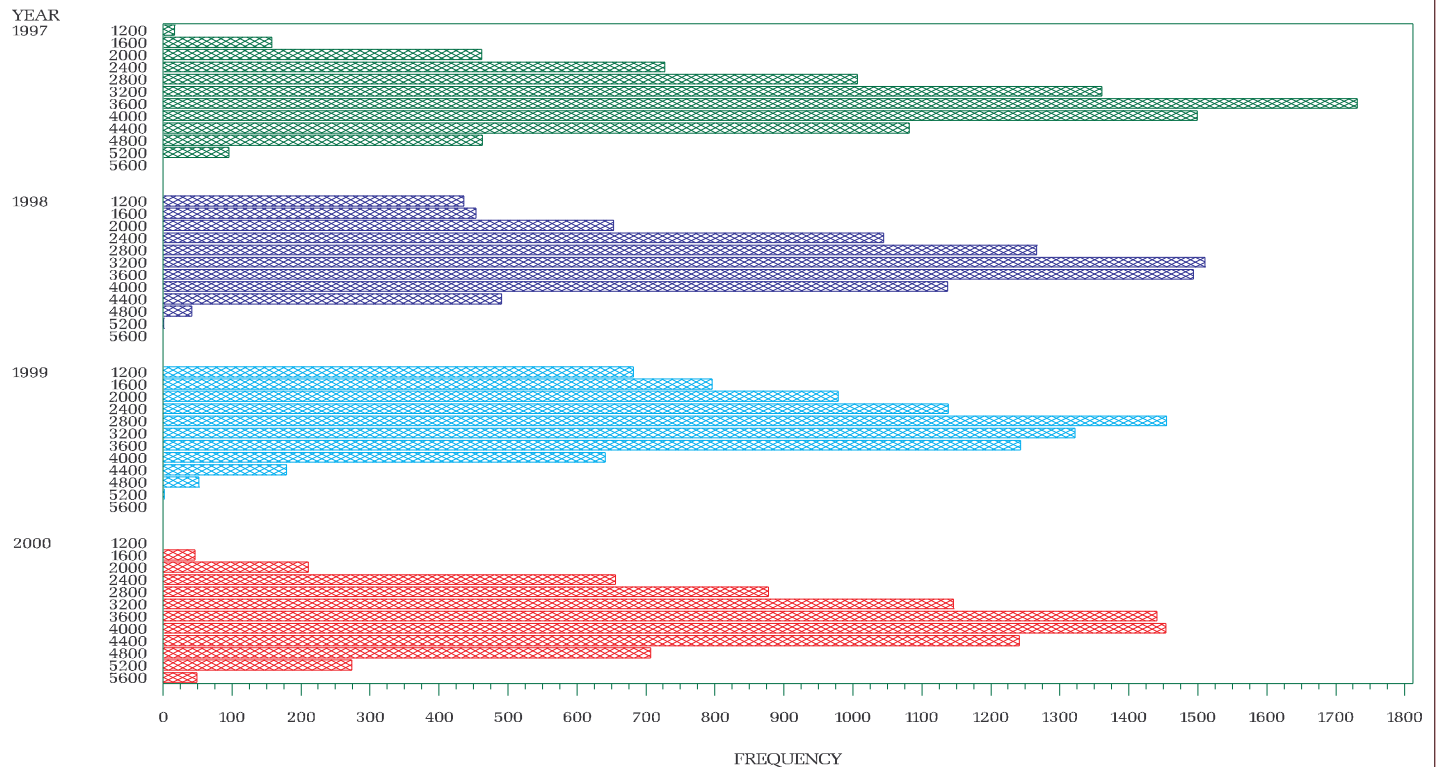
NYISO Transmission Use Statistics For January–December 2000

UPNY – SENY (OPEN)



NYISO Transmission Use Statistics For January 1997–December 2000

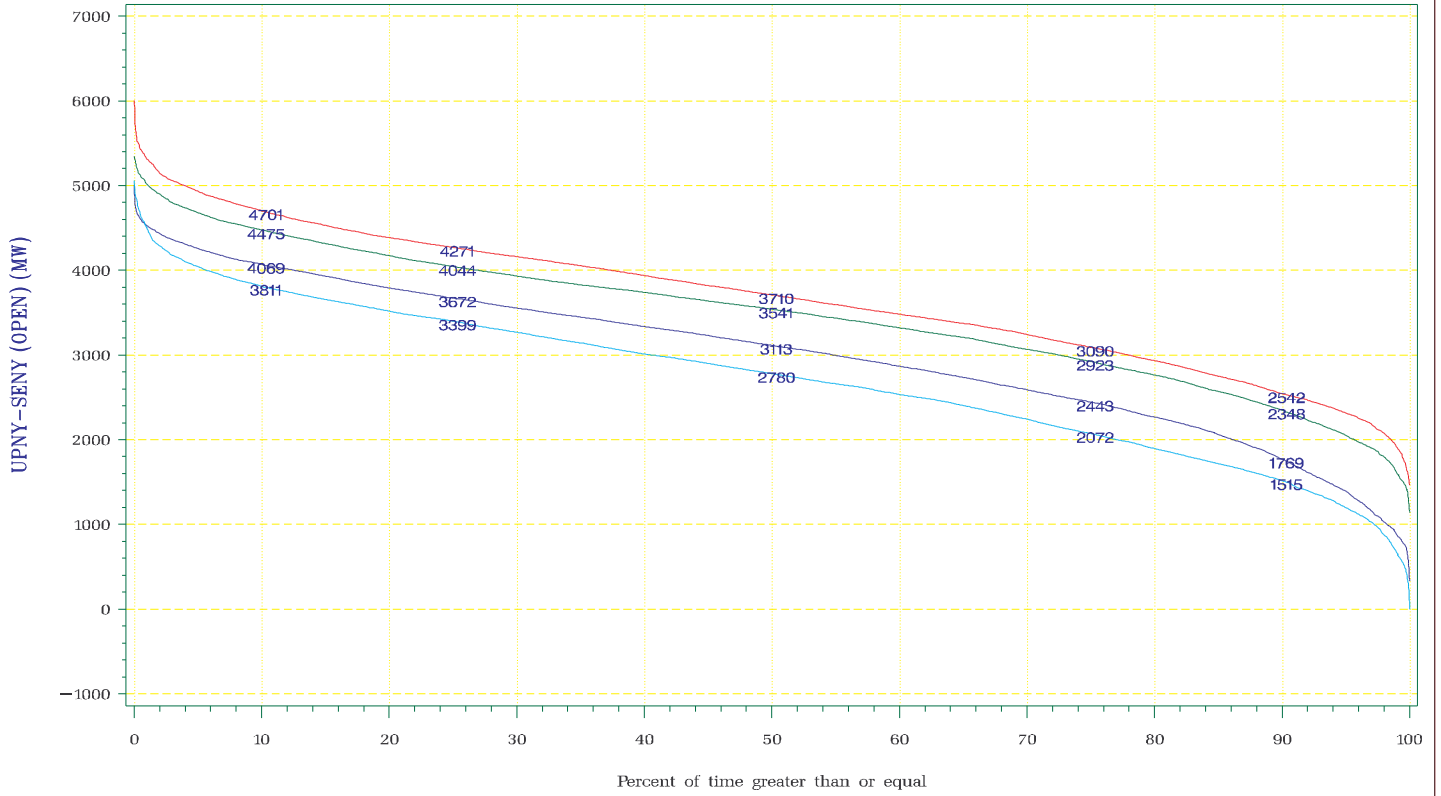
UPNY – SENY (OPEN)



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

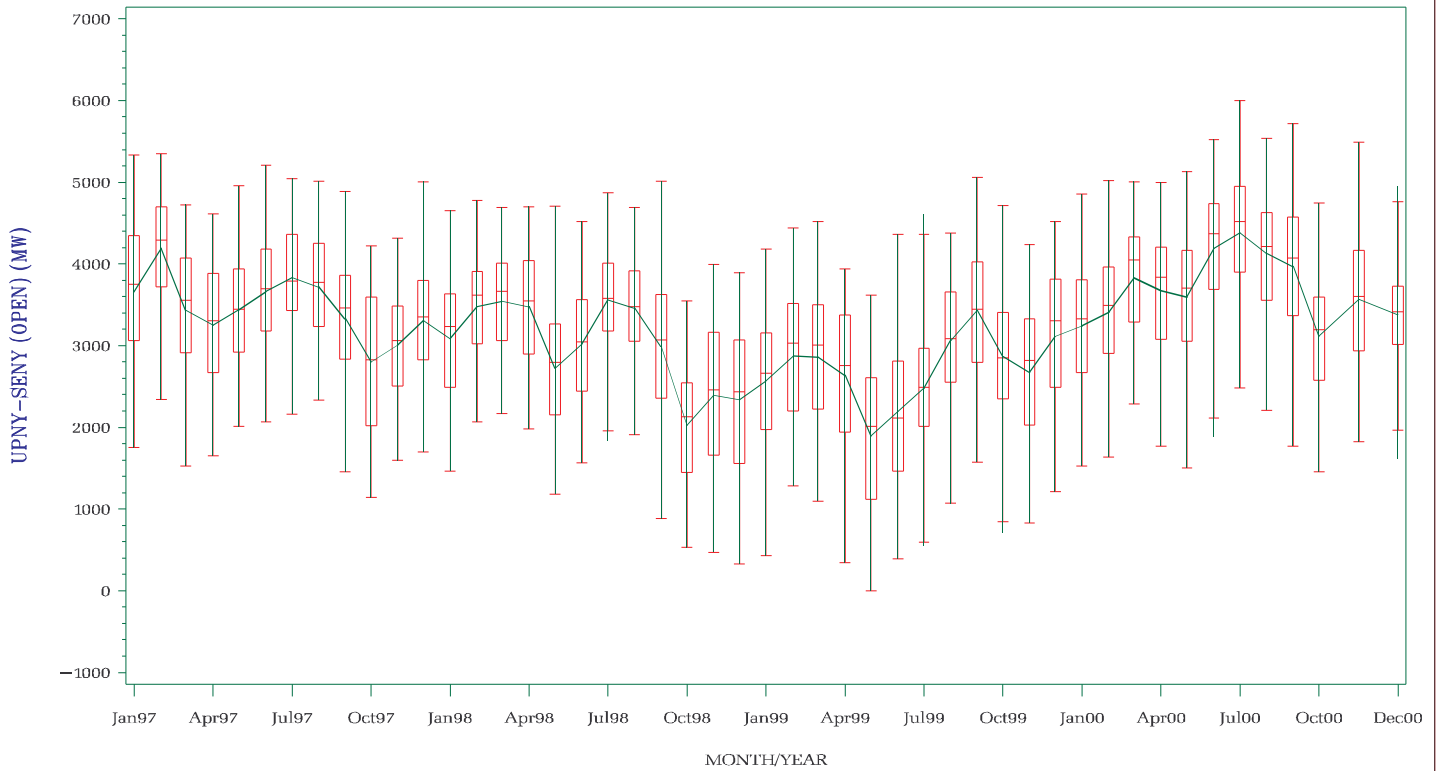
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1997 1998 1999 2000

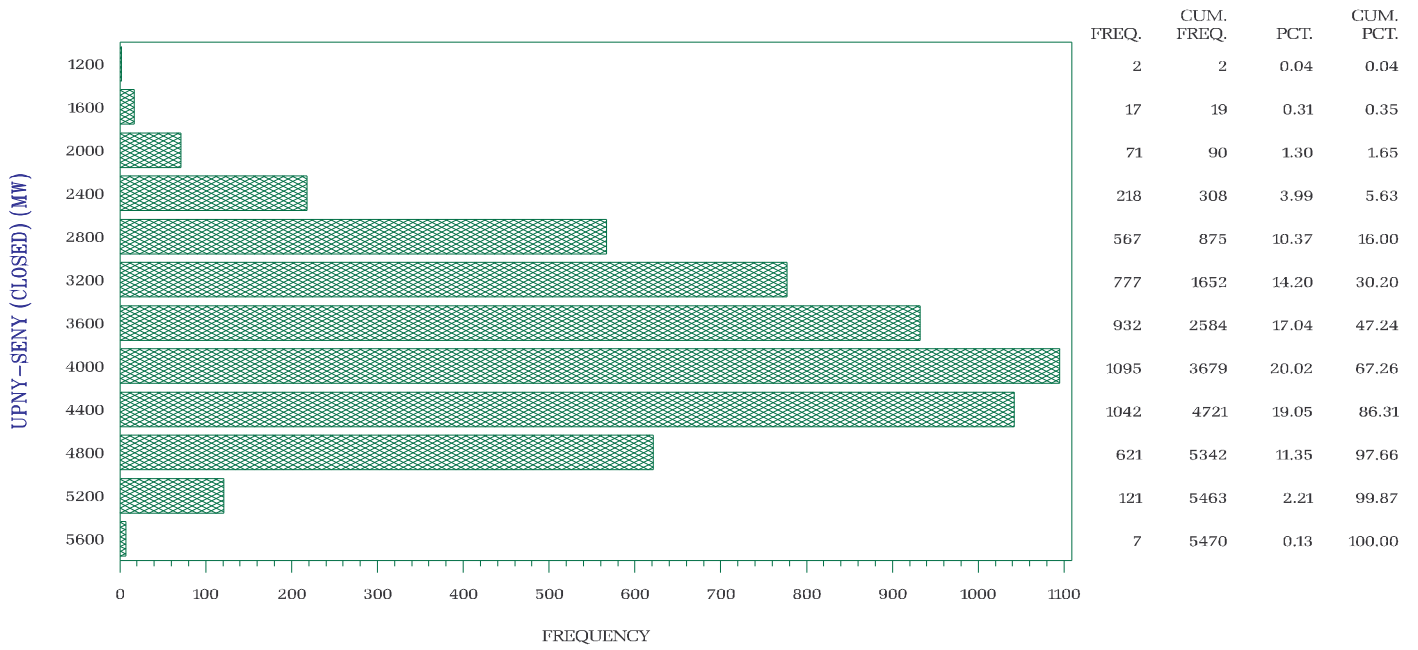
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

UPNY – SENY (OPEN)



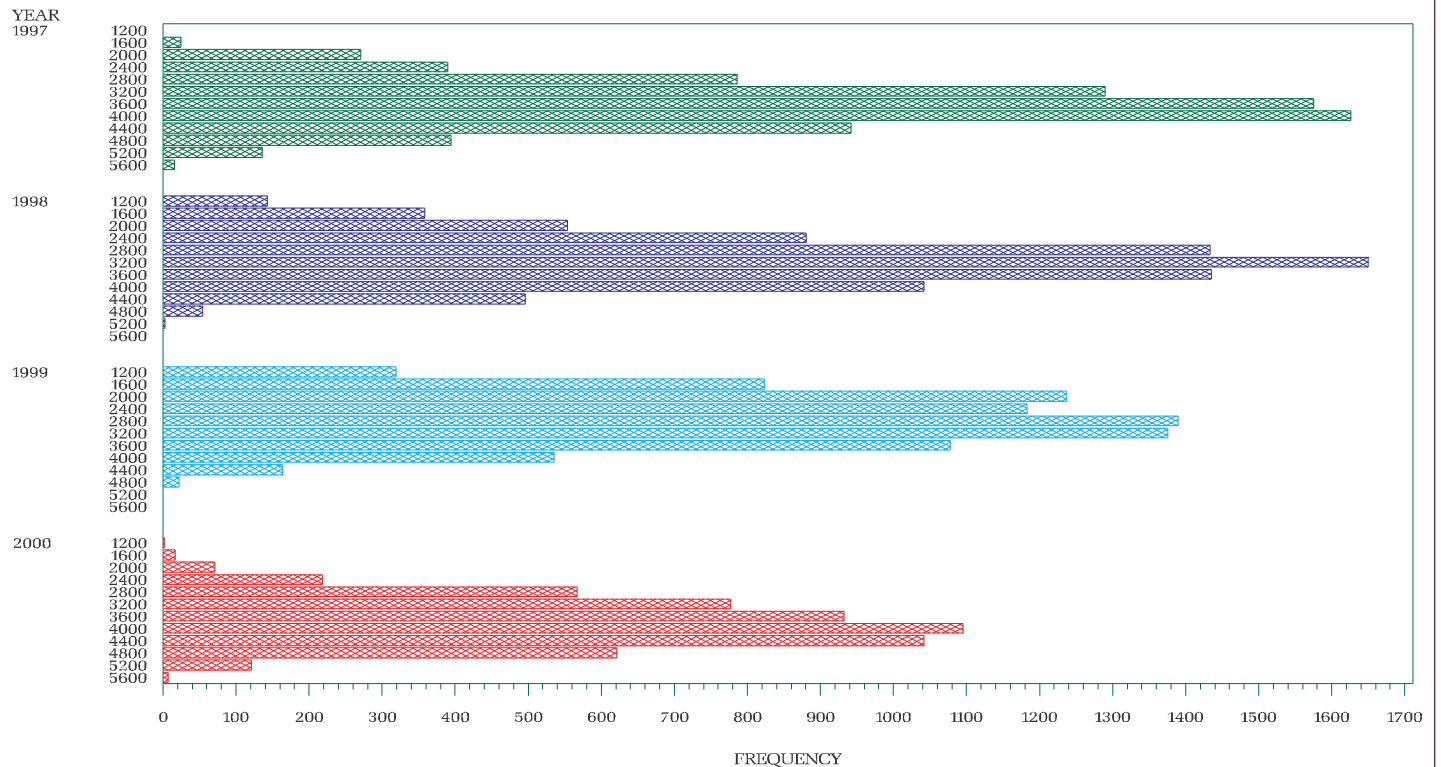
NYISO Transmission Use Statistics For January-December 2000

UPNY - SENY (CLOSED)



NYISO Transmission Use Statistics For January 1997-December 2000

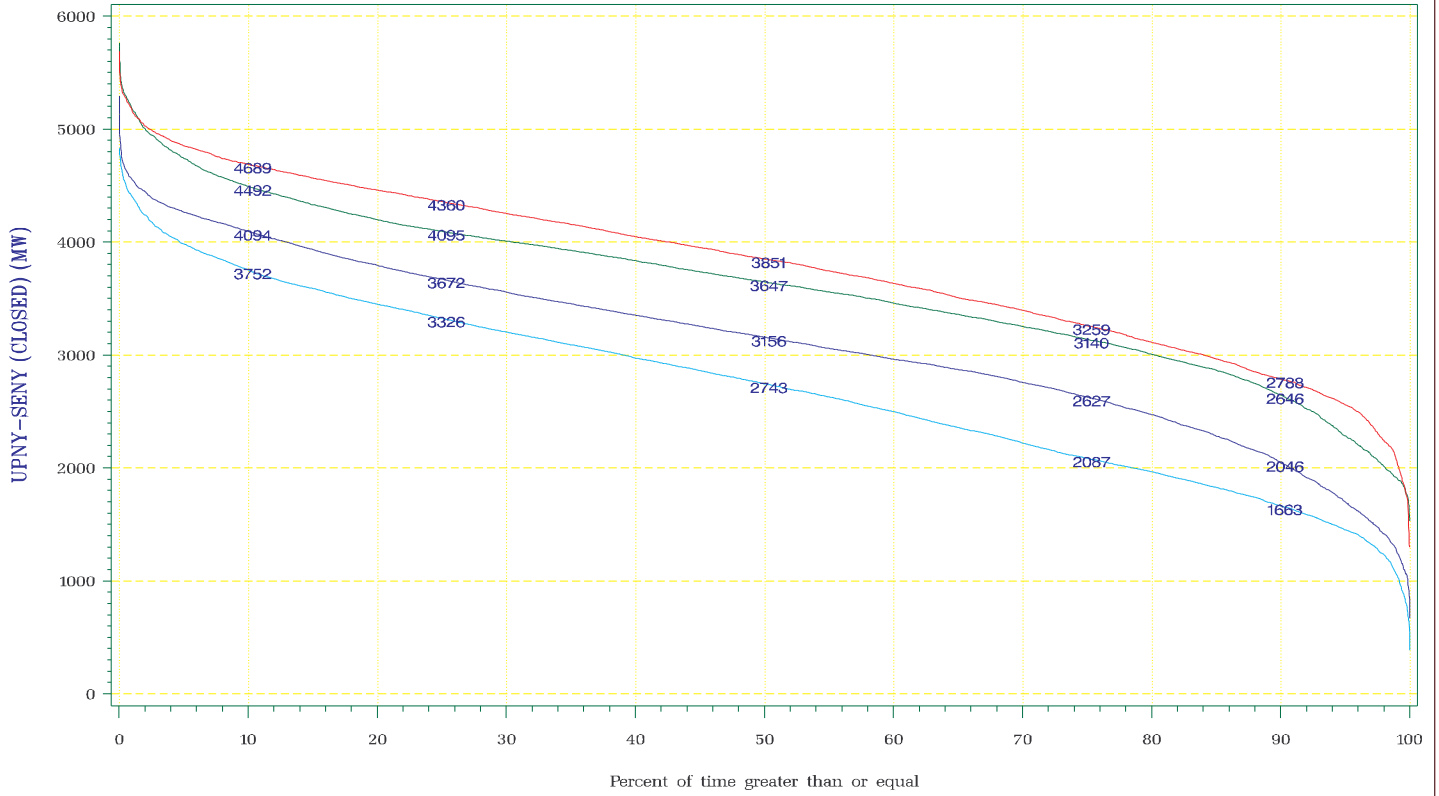
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1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

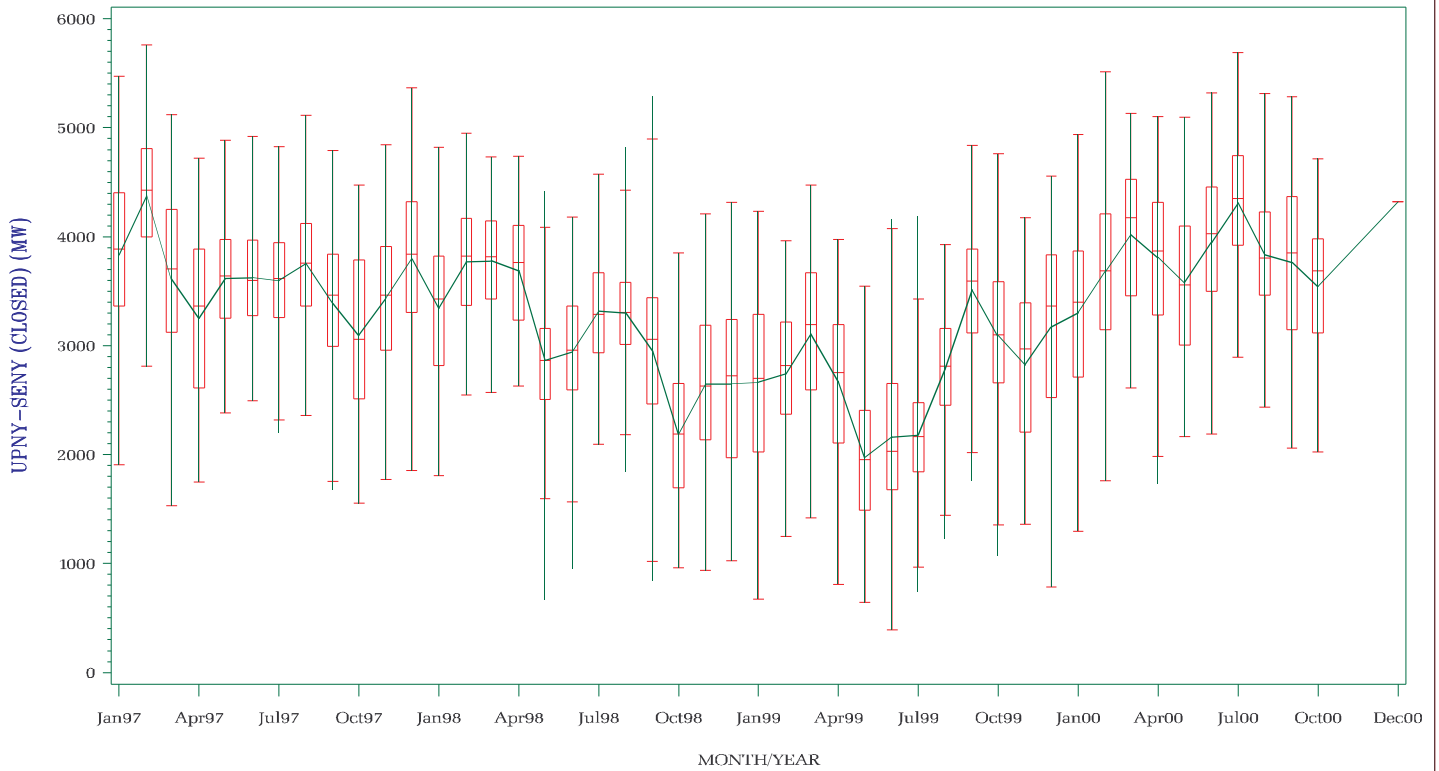
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1997 1998 1999 2000

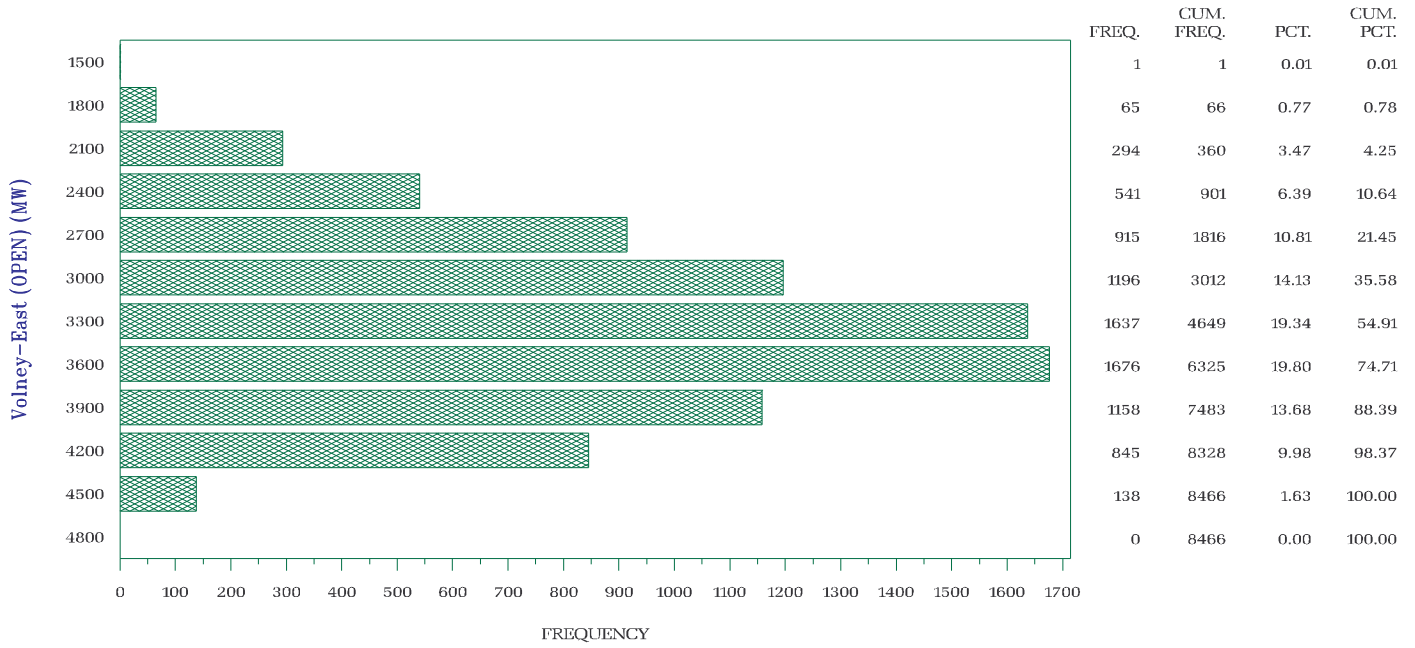
NYISO Average Monthly Interface Flow
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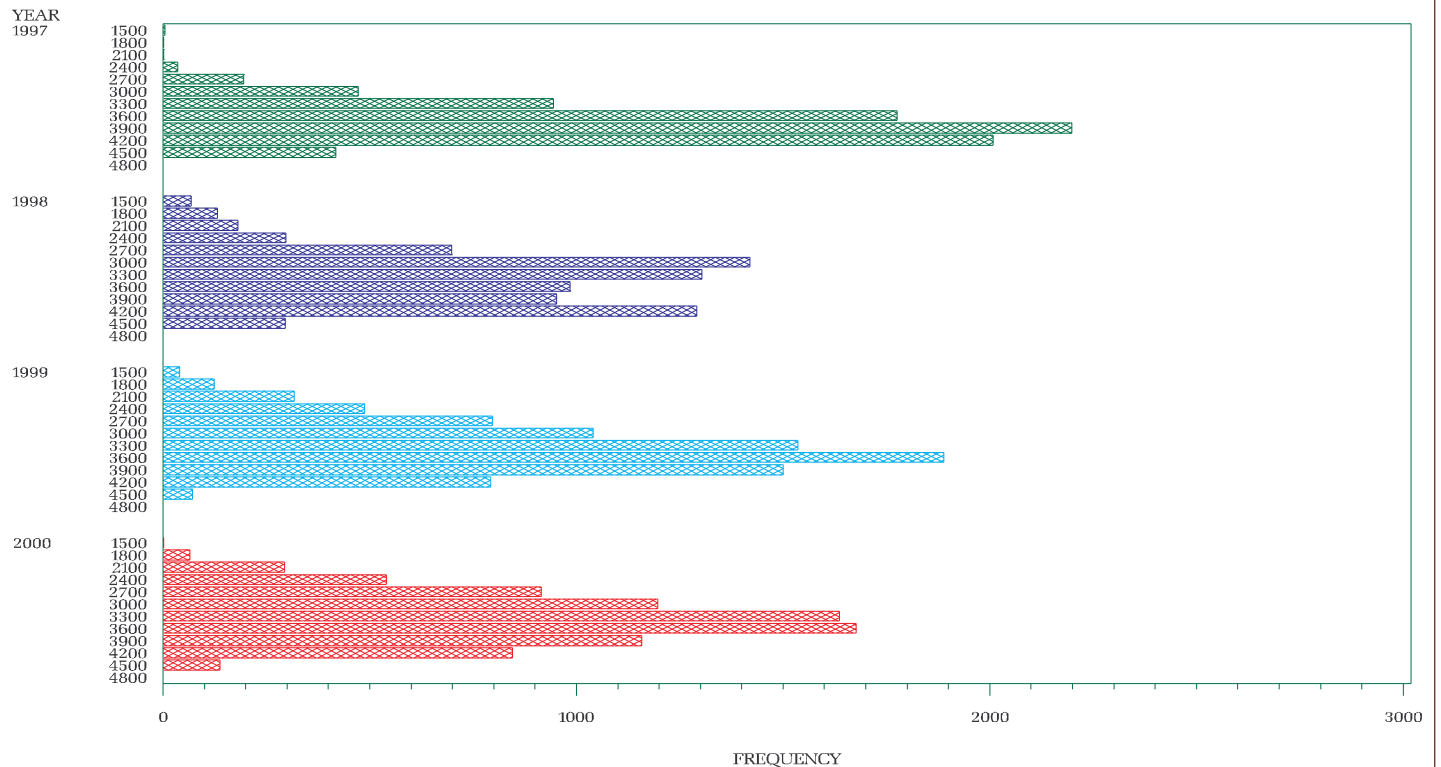
NYISO Transmission Use Statistics For January–December 2000

Volney – East (OPEN)



NYISO Transmission Use Statistics For January 1997–December 2000

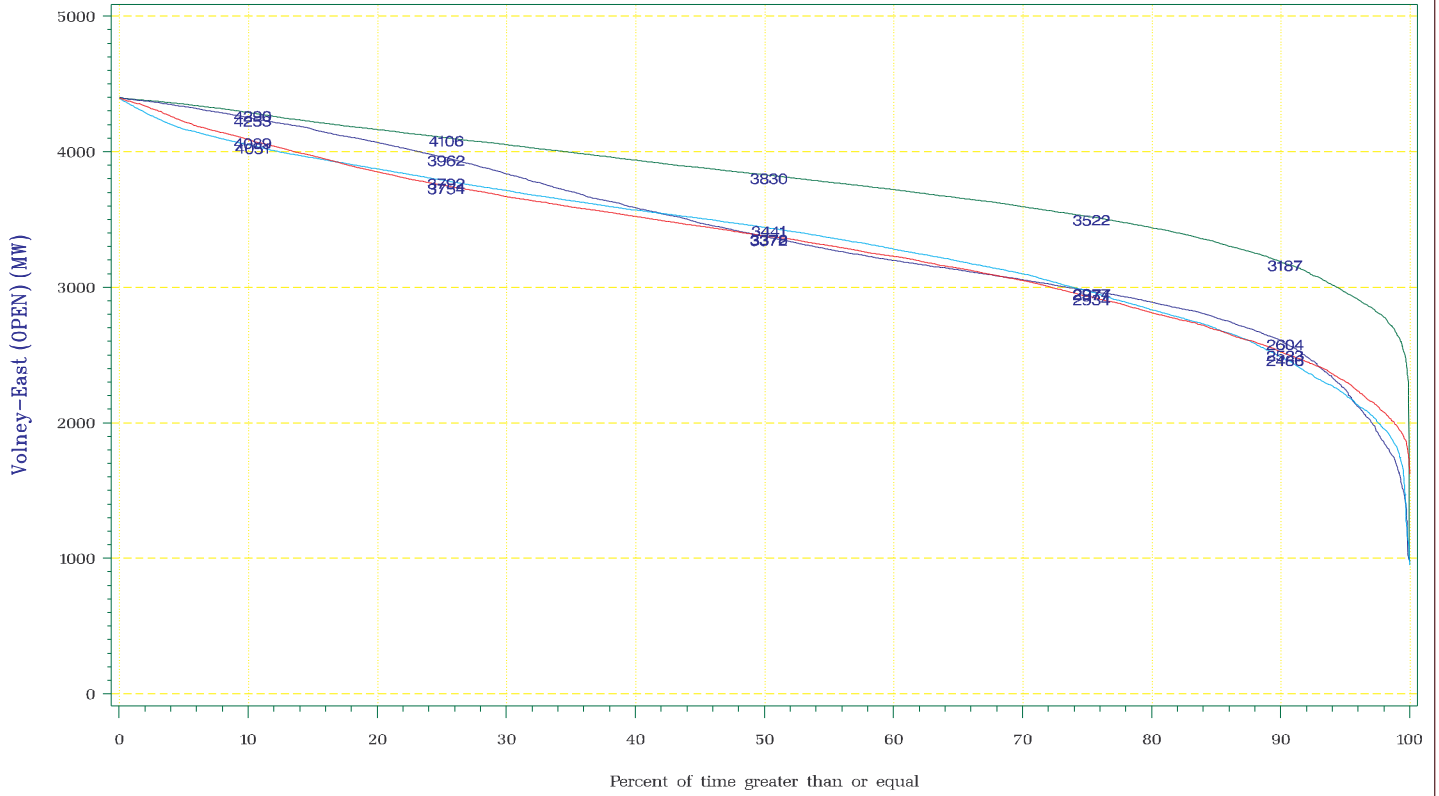
Volney – East (OPEN)



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

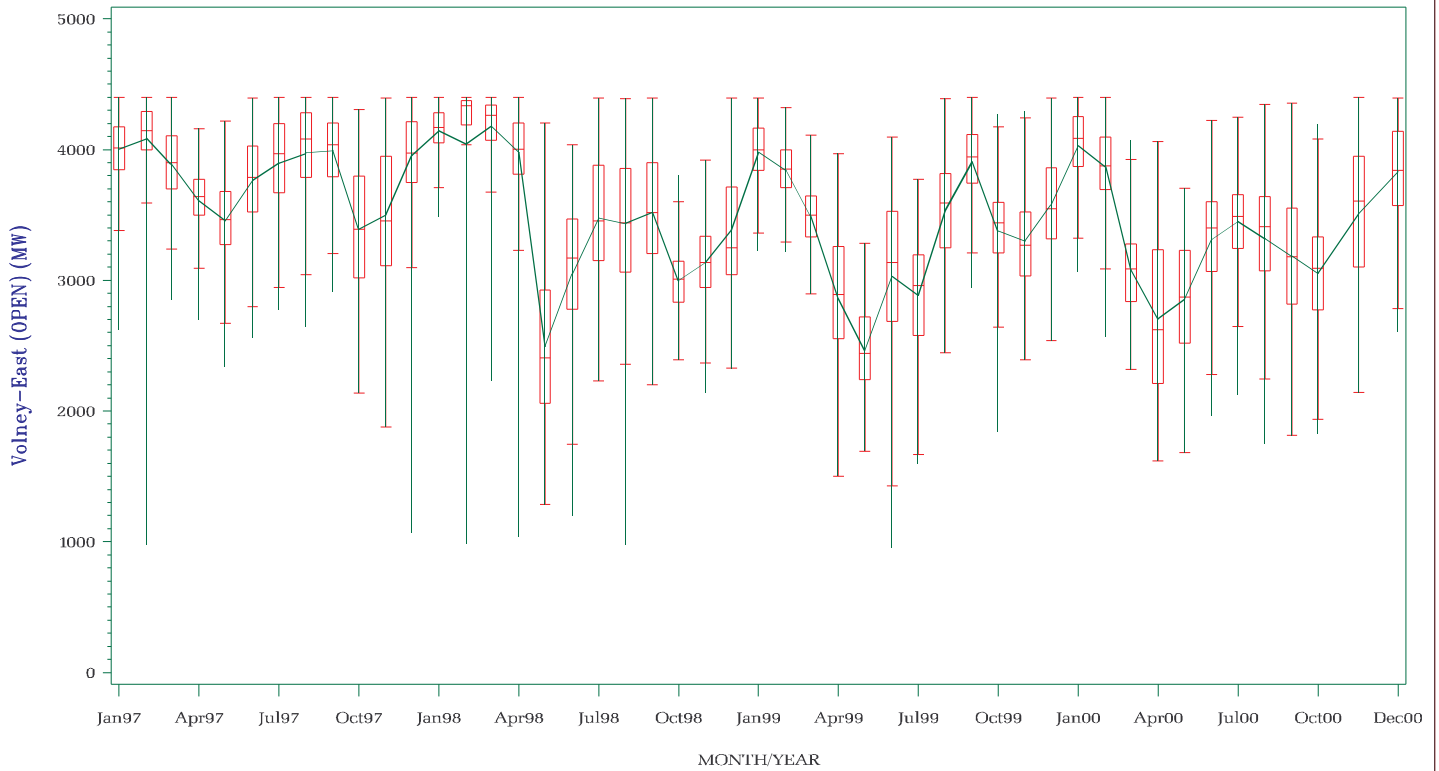
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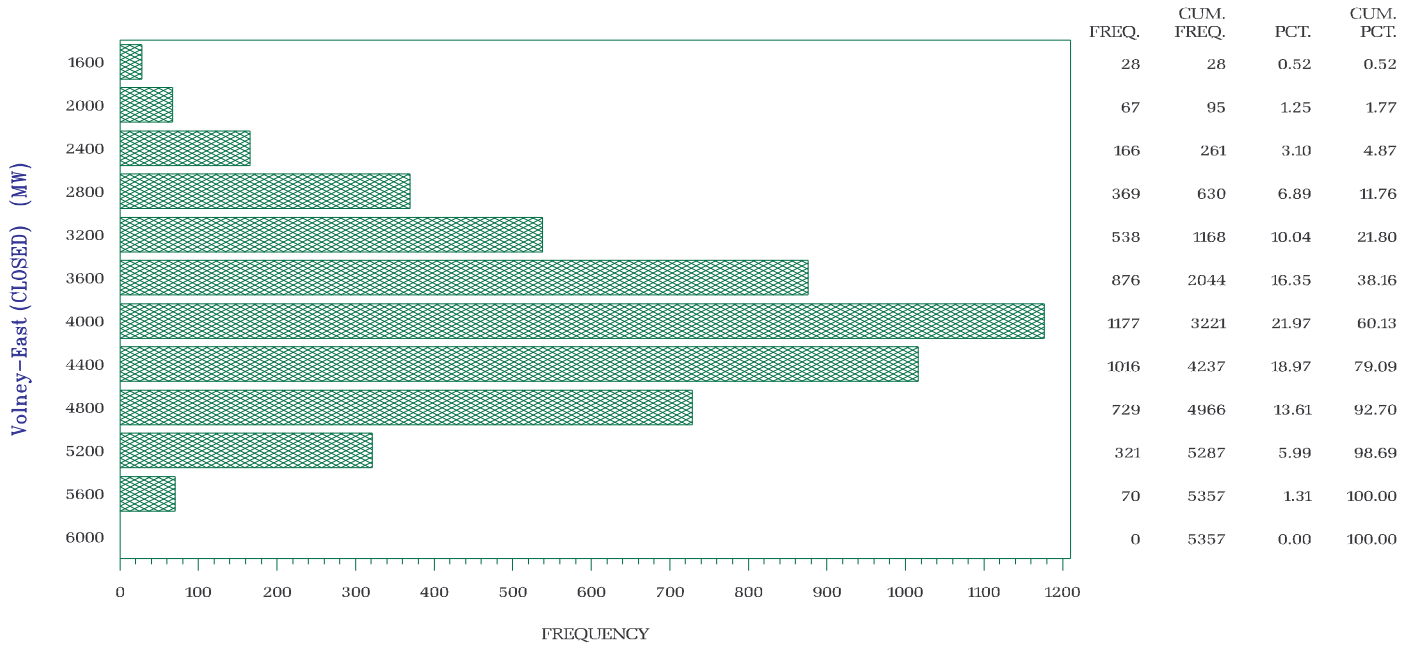
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January 1, 1997 – December 31, 2000

Volney – East (OPEN)



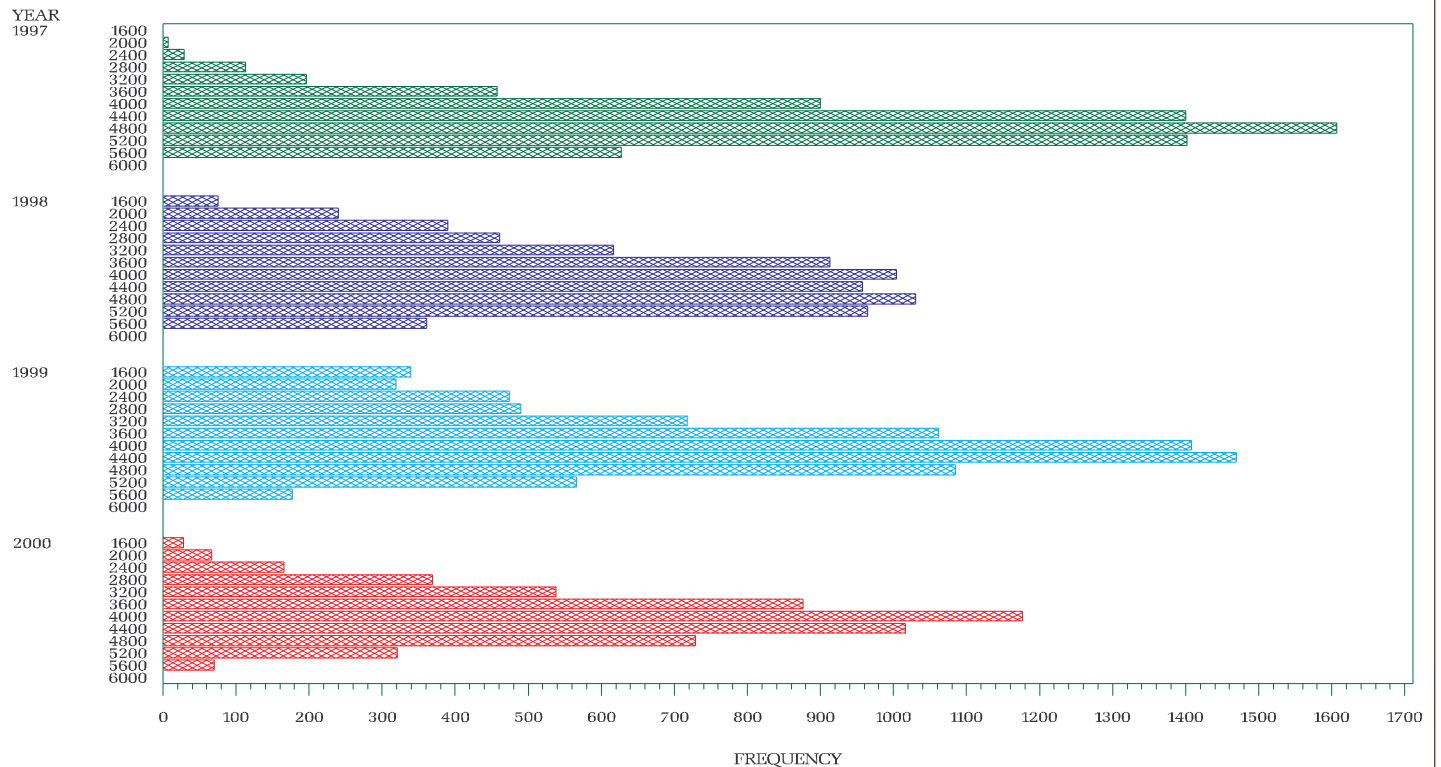
NYISO Transmission Use Statistics For January–December 2000

Volney – East (CLOSED)



NYISO Transmission Use Statistics For January 1997–December 2000

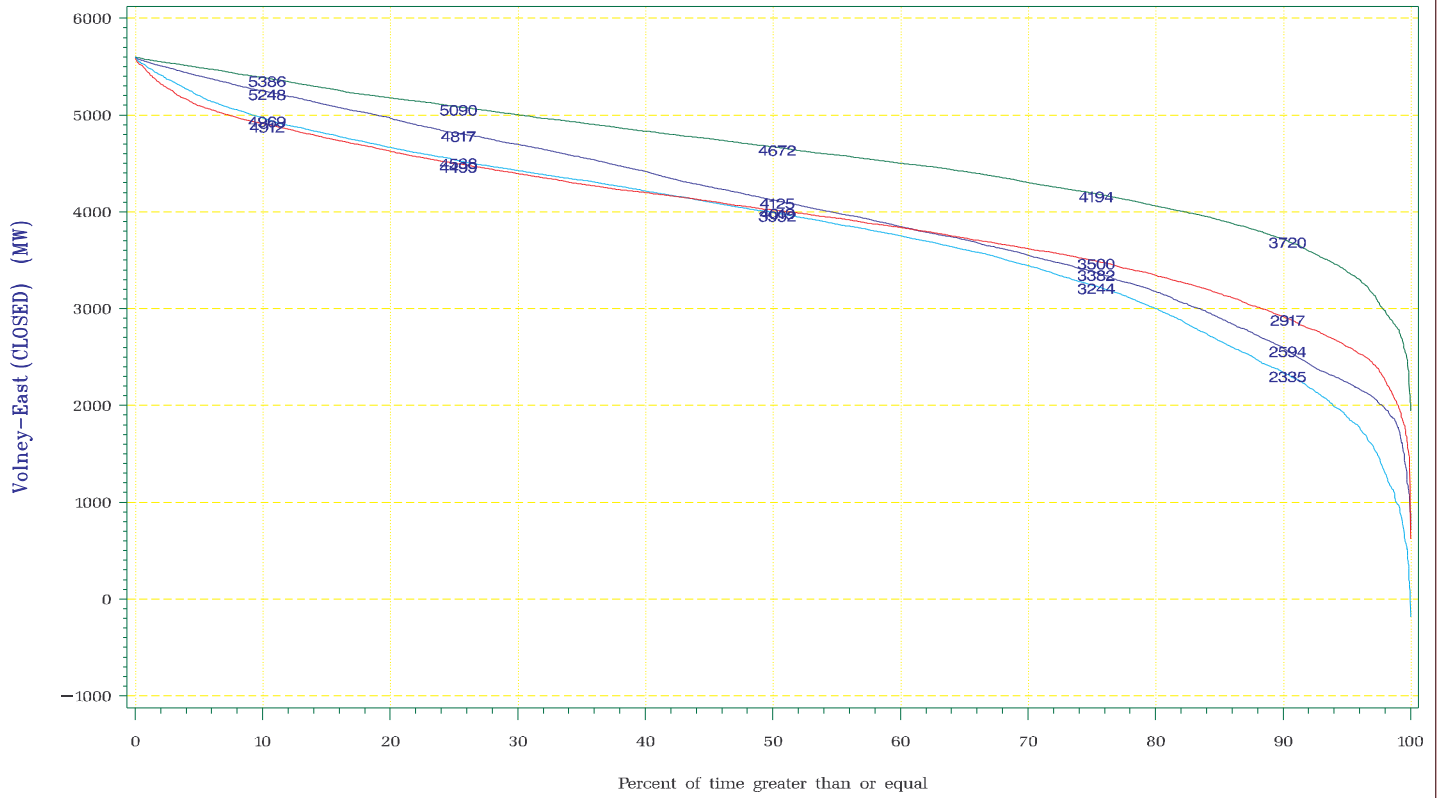
Volney – East (CLOSED)



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

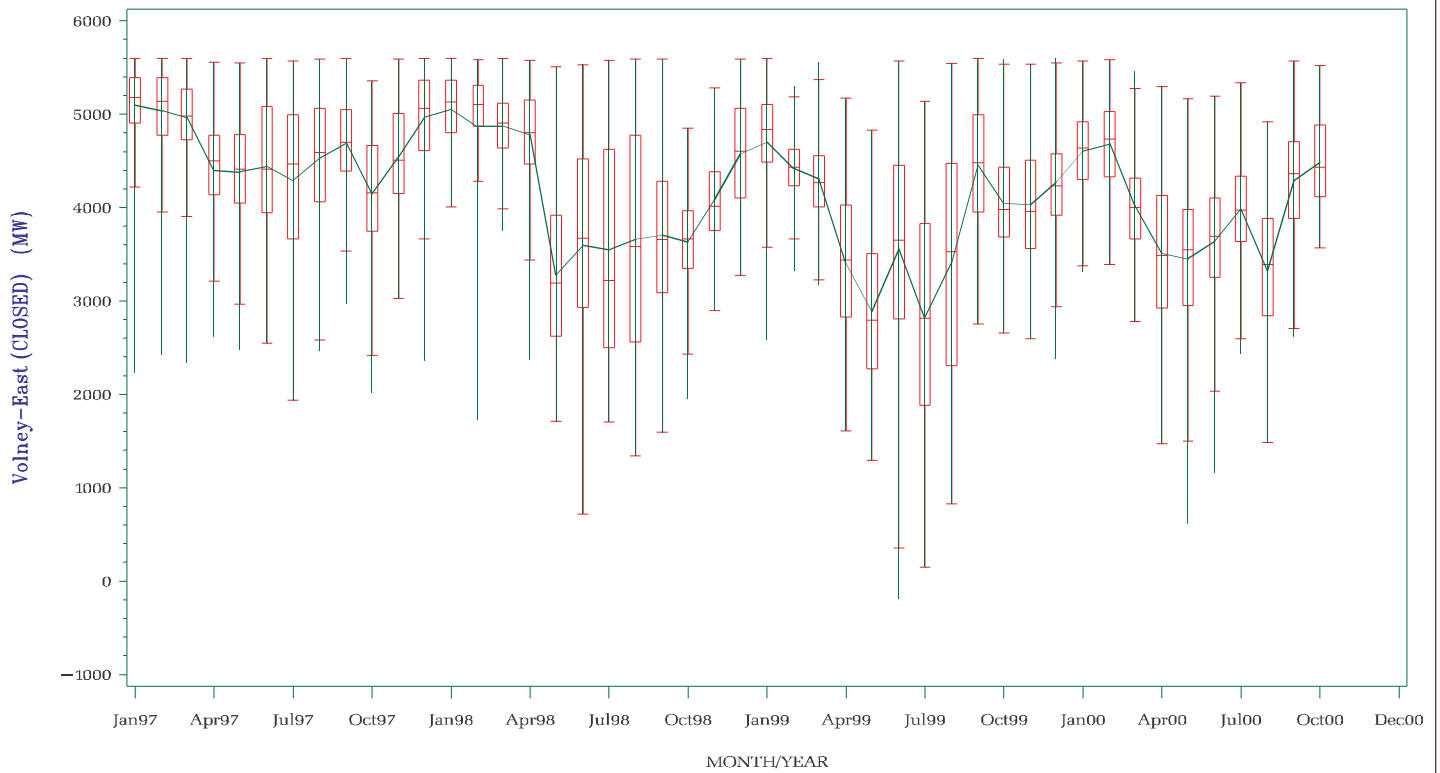
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1997 1998 1999 2000

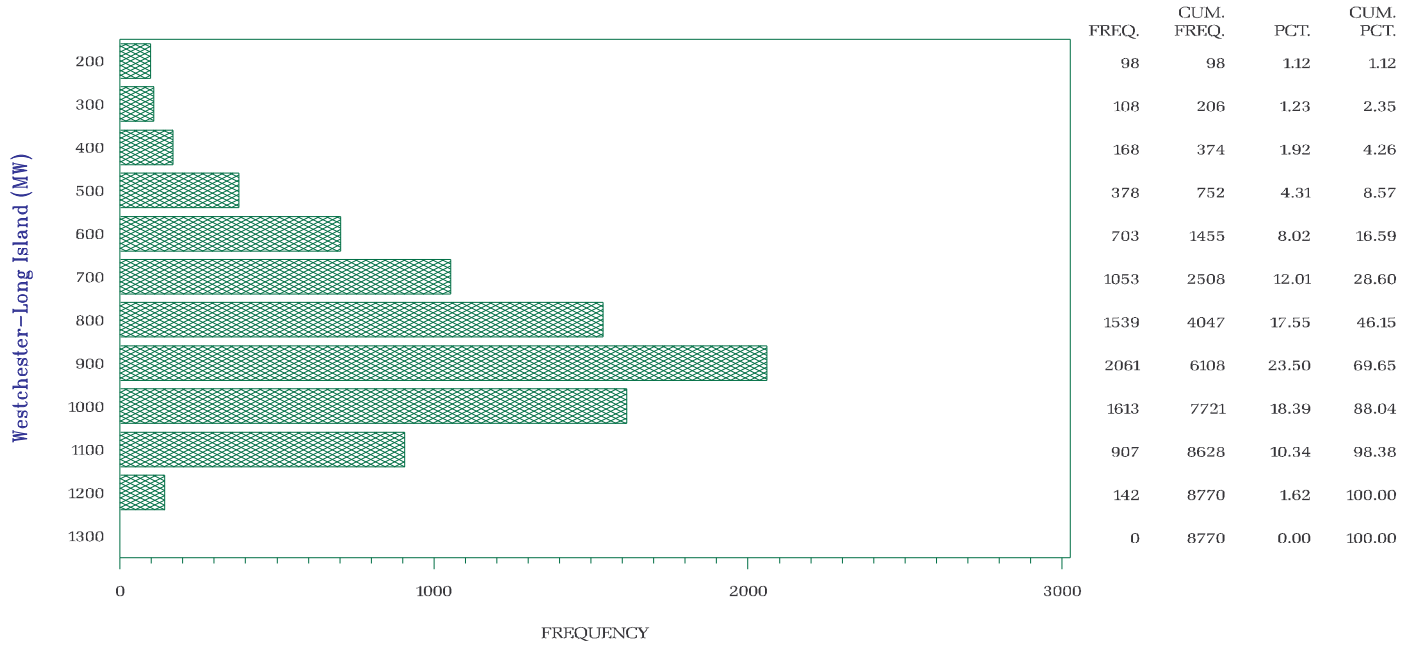
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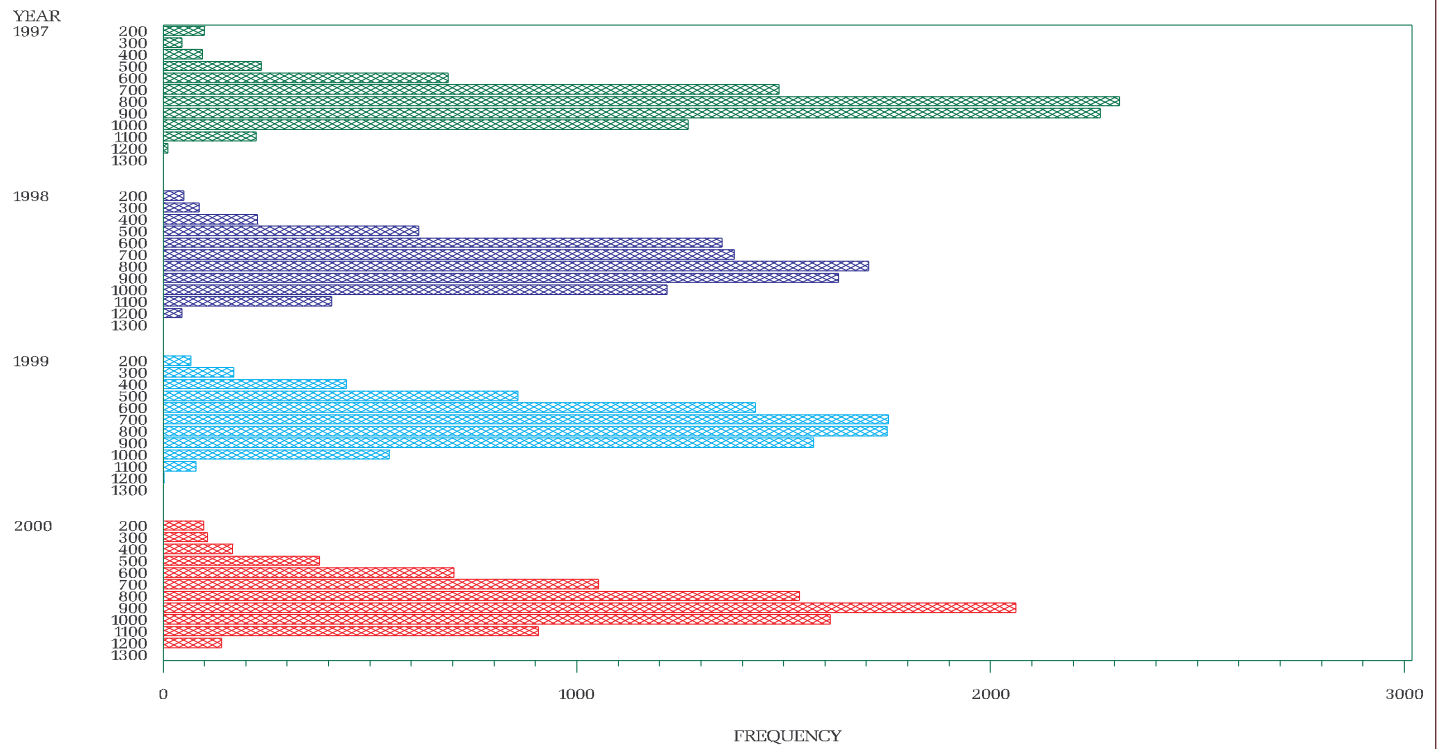
NYISO Transmission Use Statistics For January–December 2000

Westchester–Long Island
Y49 + Y50



NYISO Transmission Use Statistics For January 1997–December 2000

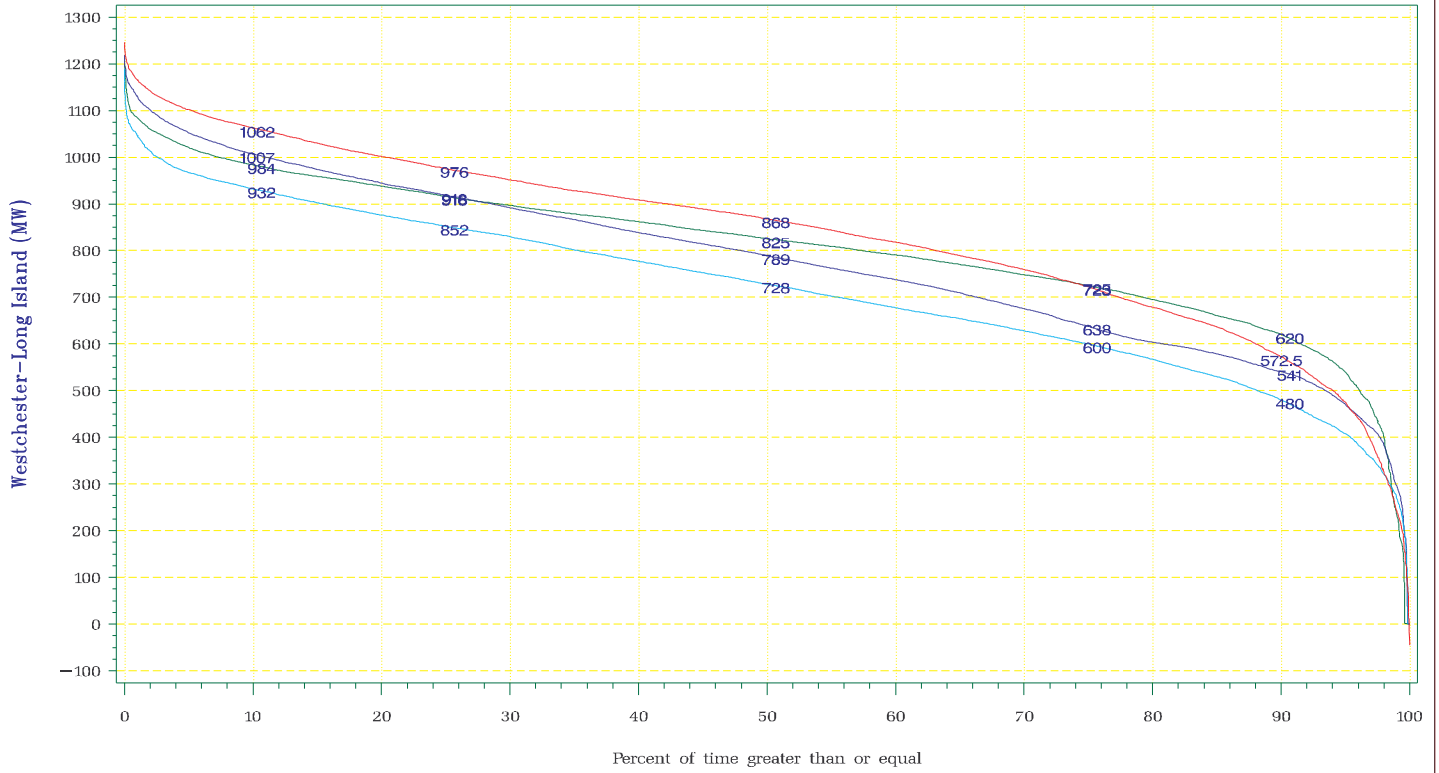
Westchester–Long Island
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1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

Westchester – Long Island
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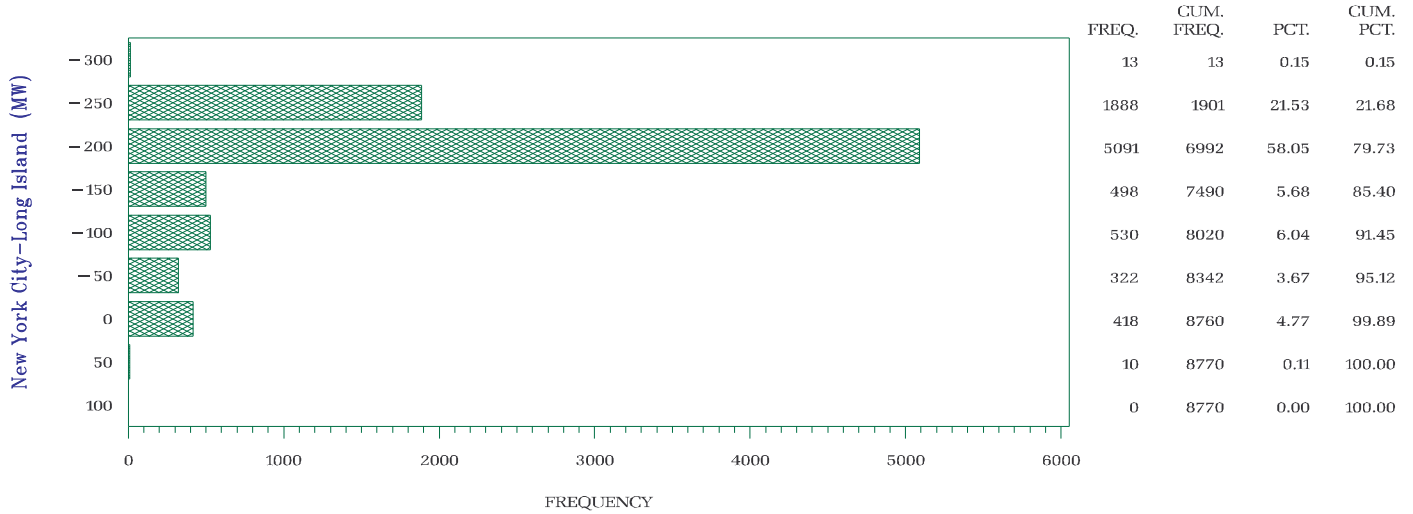
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

Westchester – Long Island
Y49 + Y50



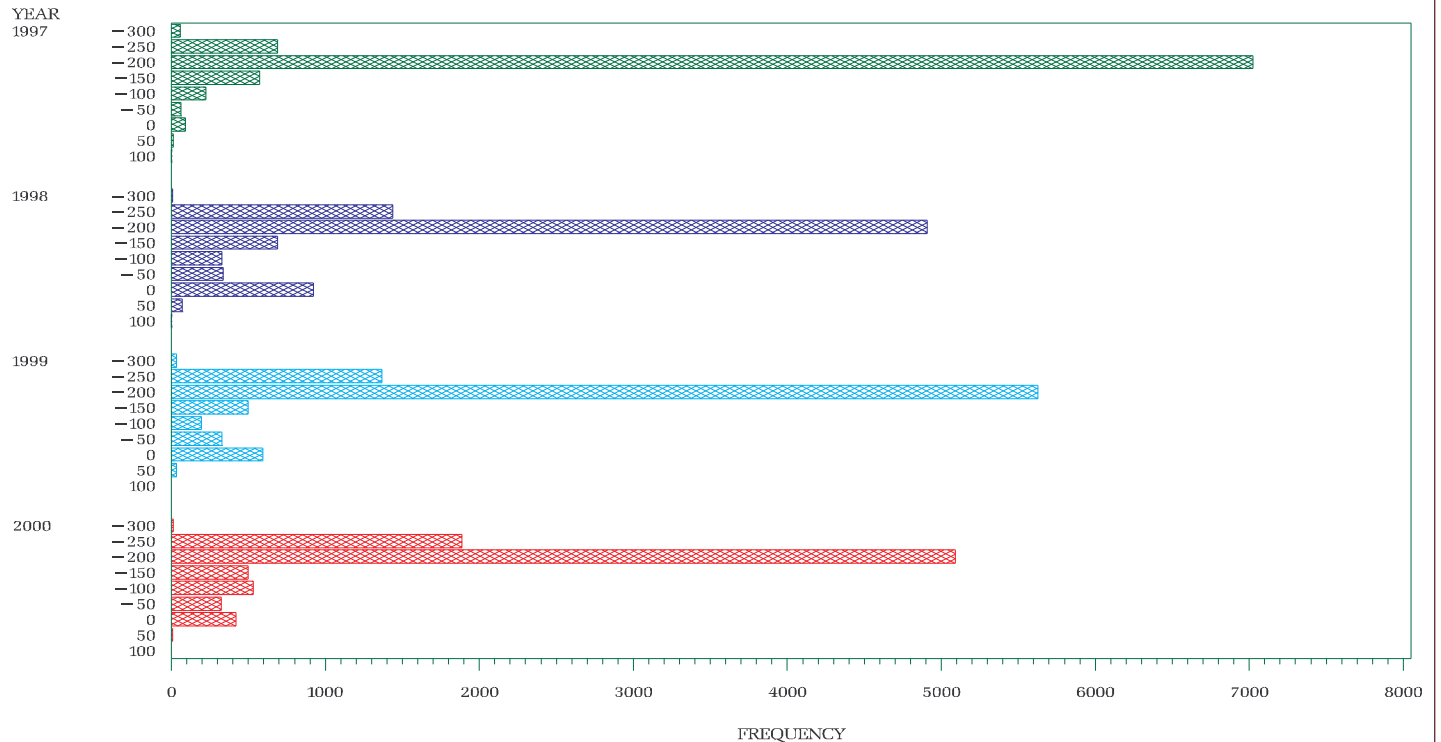
NYISO Transmission Use Statistics For January–December 2000

New York City–Long Island
901+903



NYISO Transmission Use Statistics For January 1997–December 2000

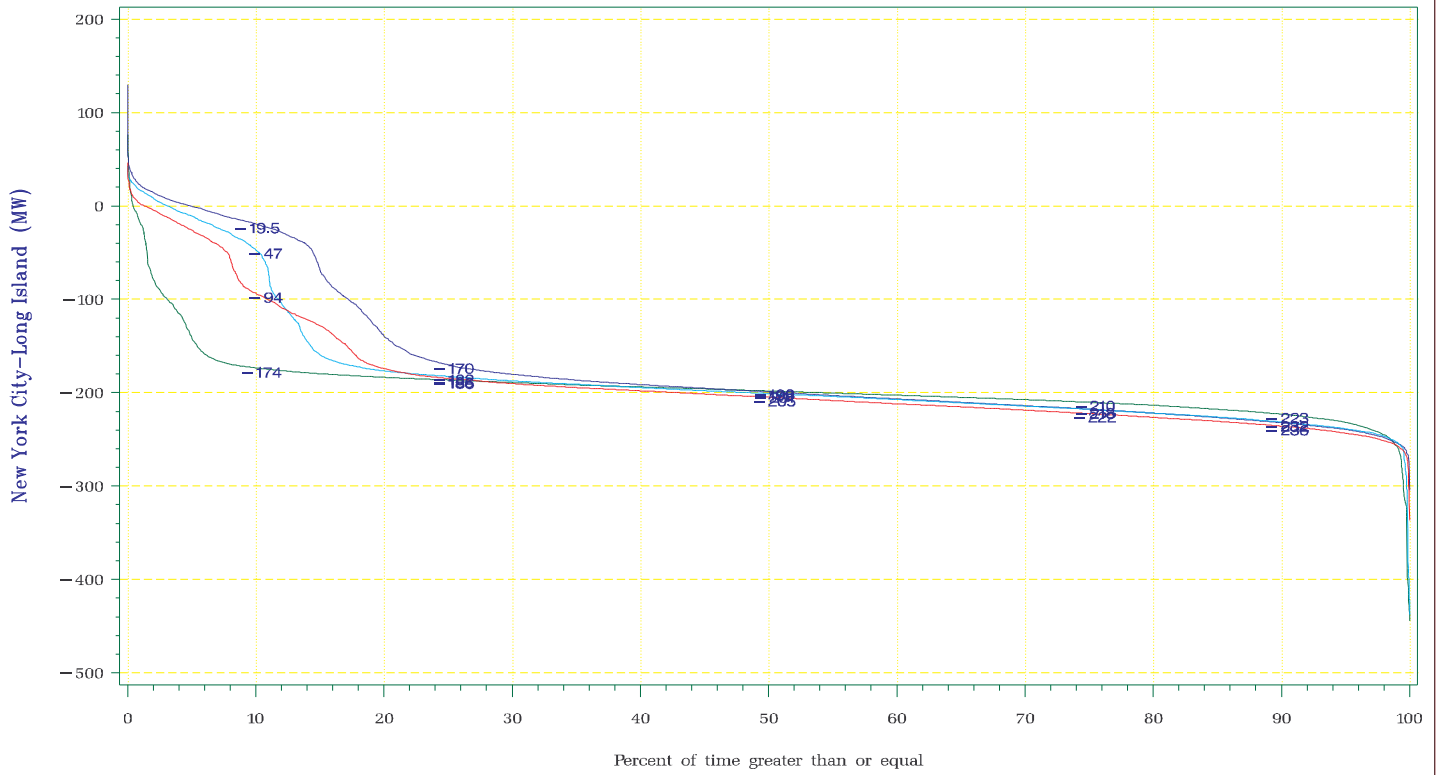
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1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

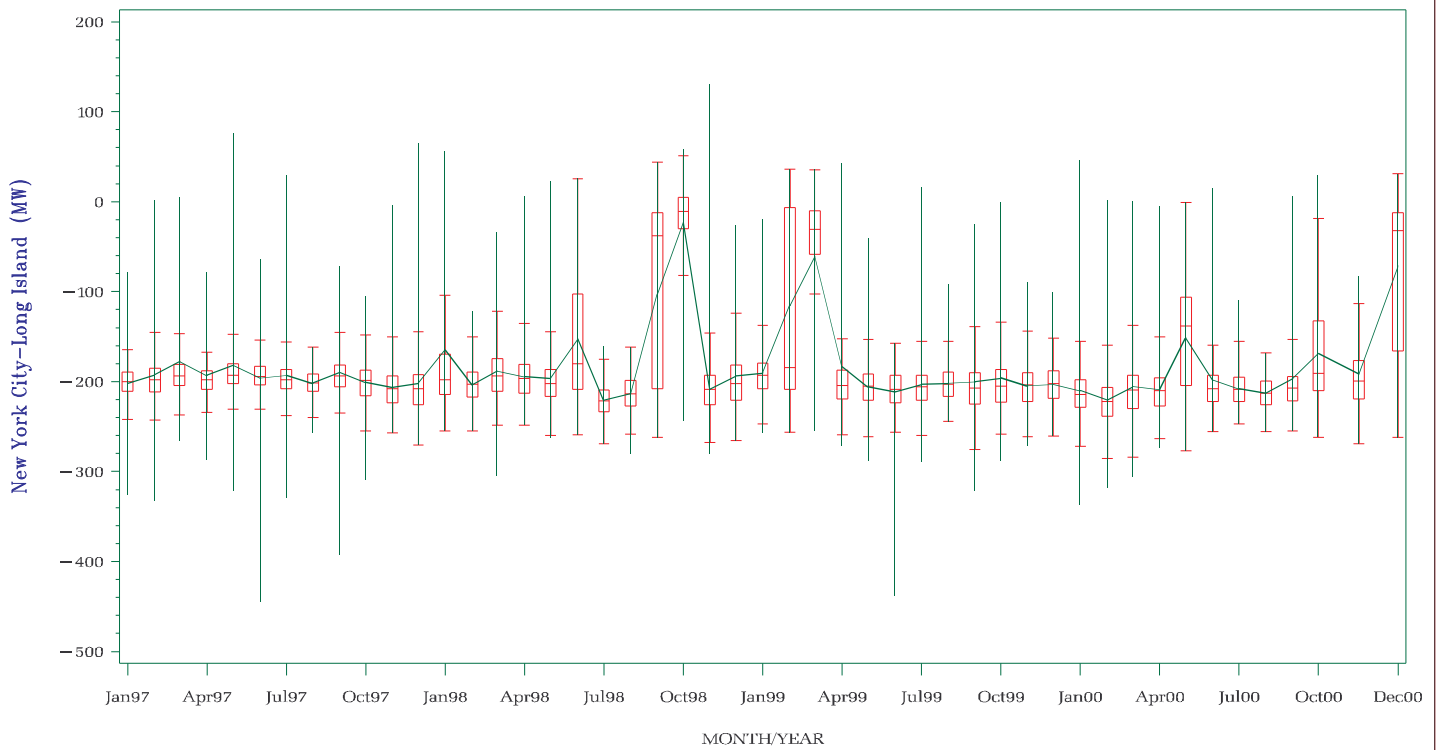
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901 + 903



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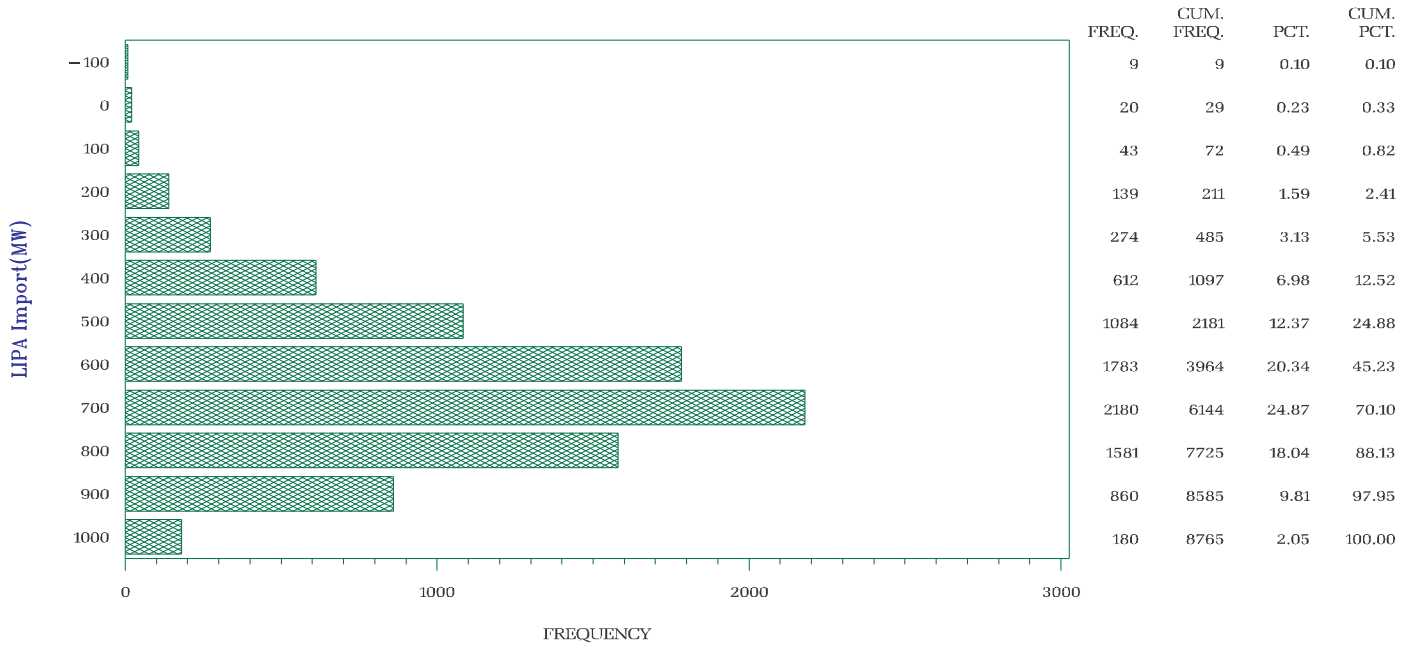
NYISO Average Monthly Interface Flow
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901 + 903



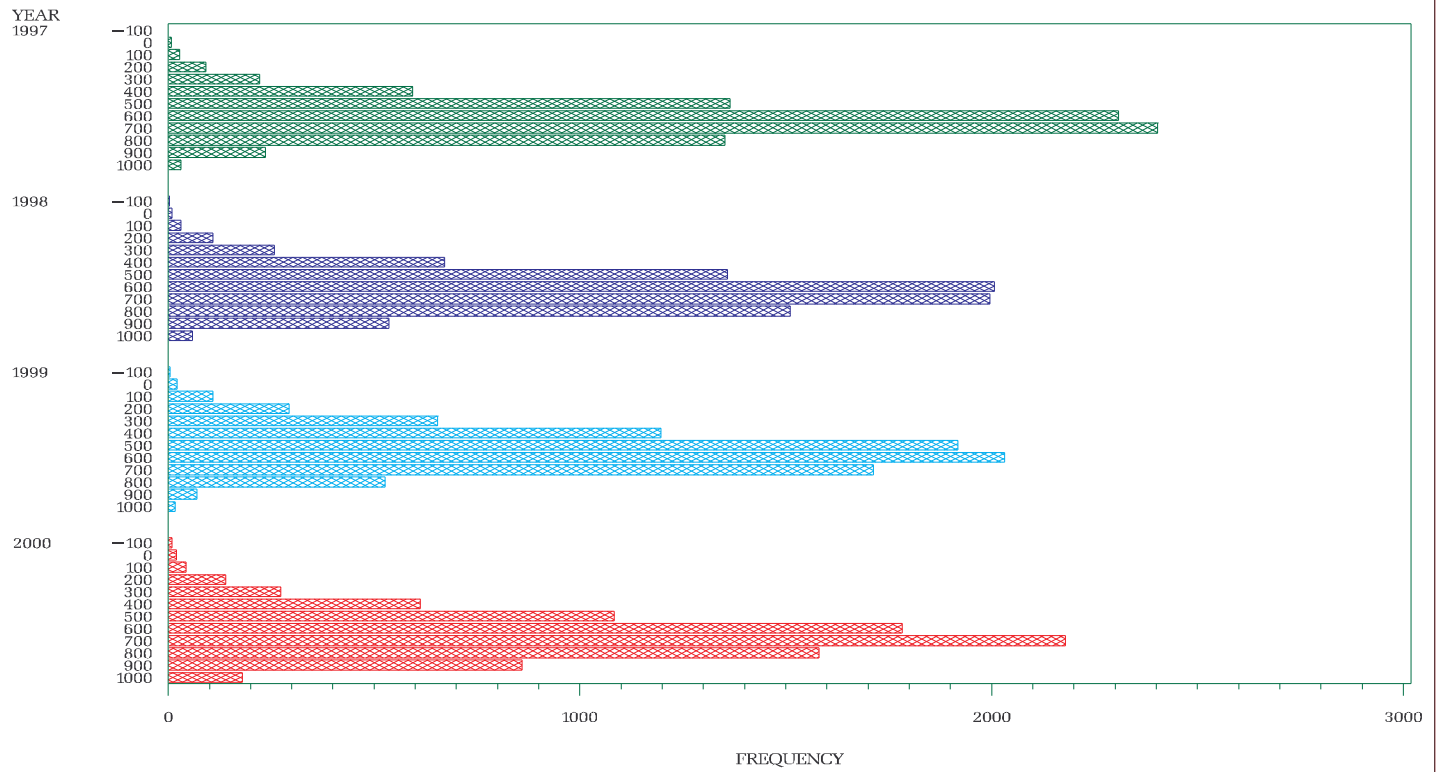
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LIPA Import



NYISO Transmission Use Statistics For January 1997–December 2000

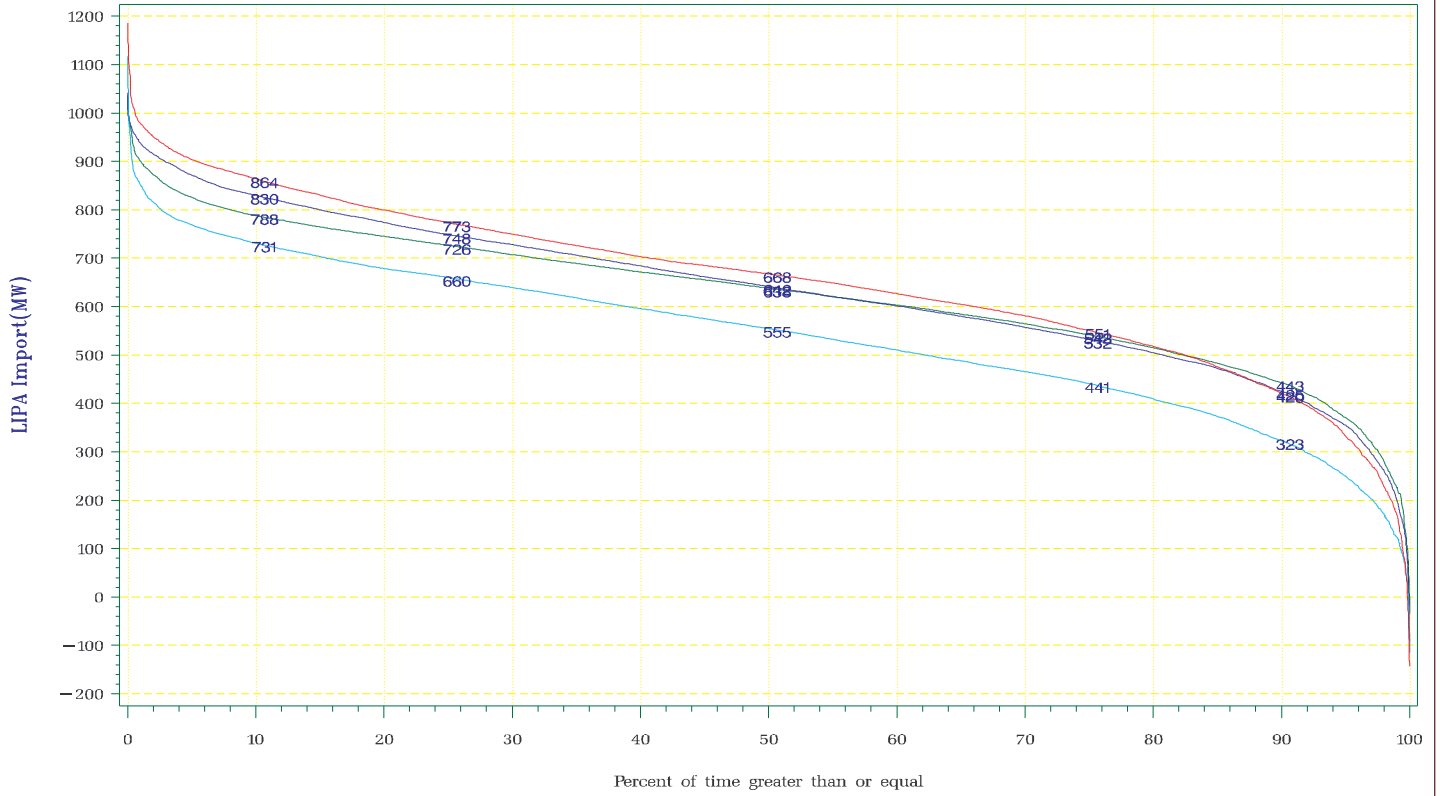
LIPA Import



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

LIPA Import



1997 1998 1999 2000

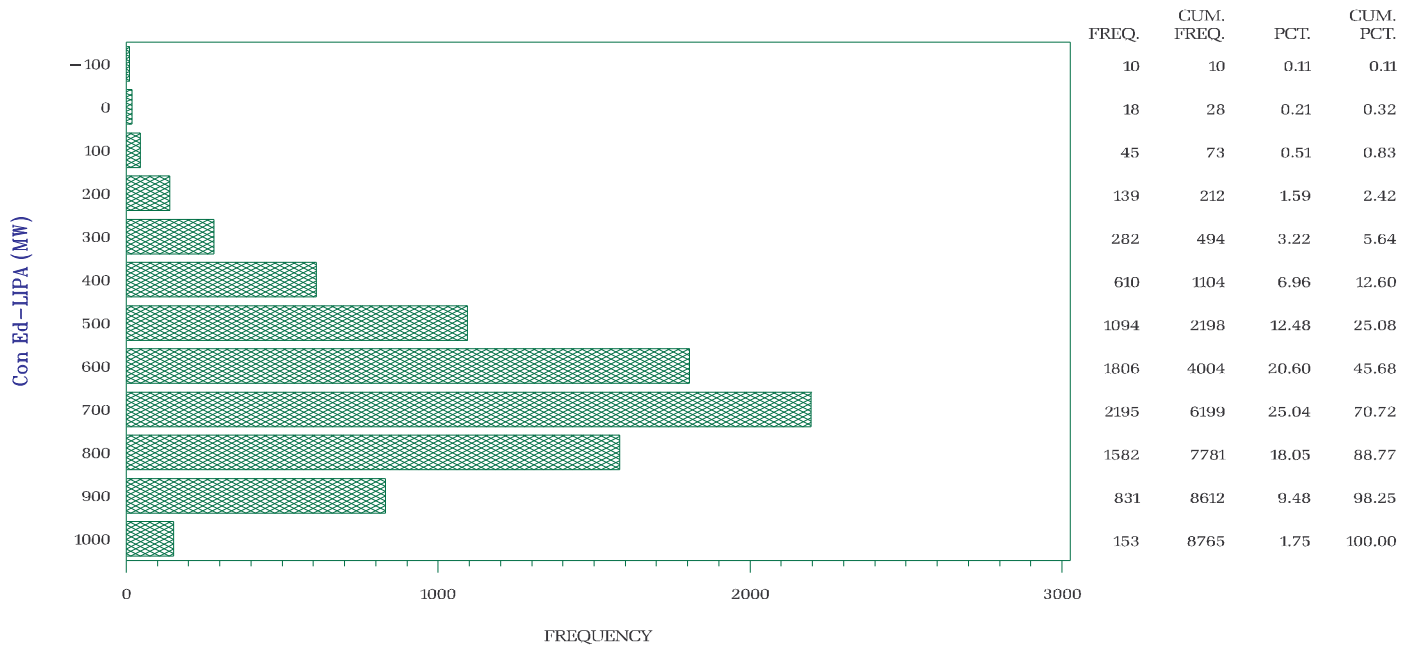
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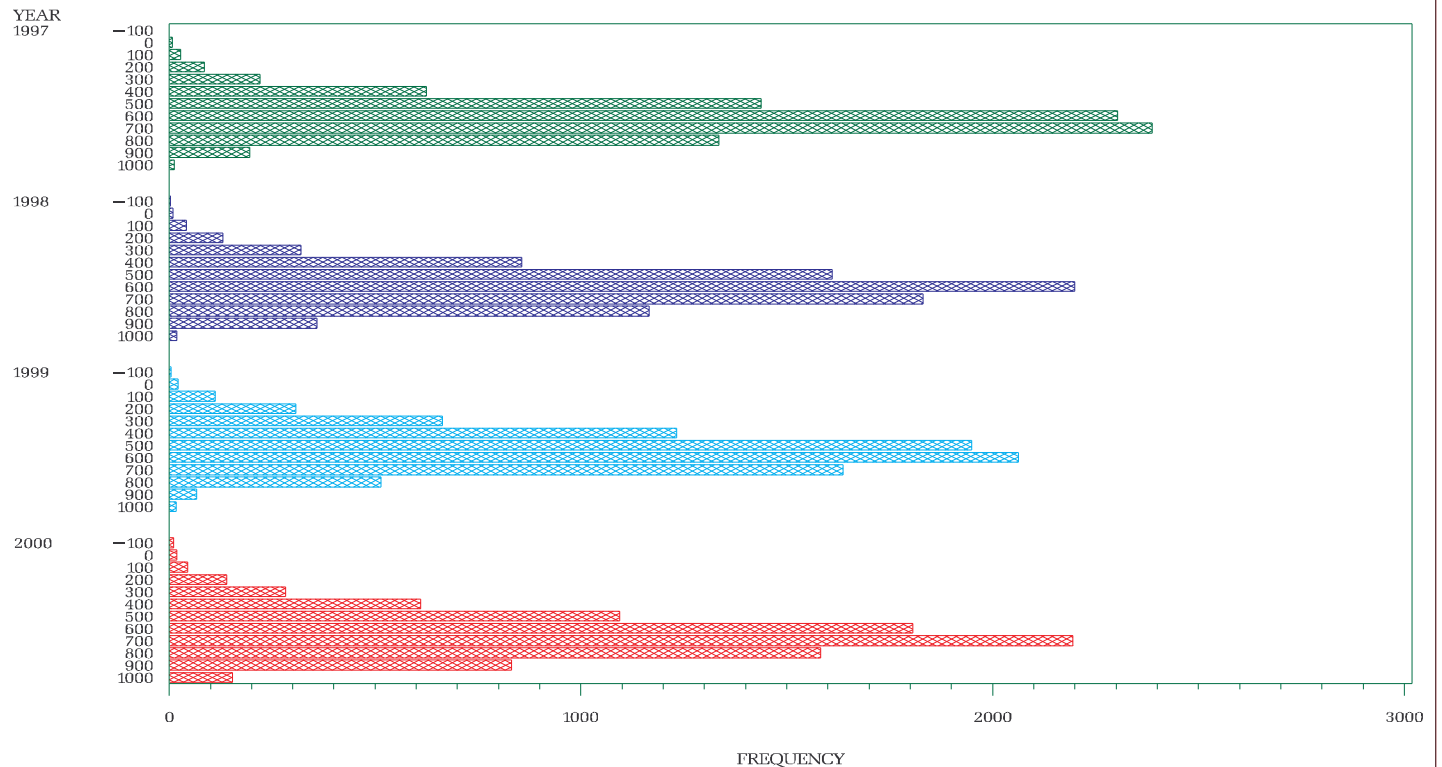
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Con Ed – LIPA



NYISO Transmission Use Statistics For January 1997–December 2000

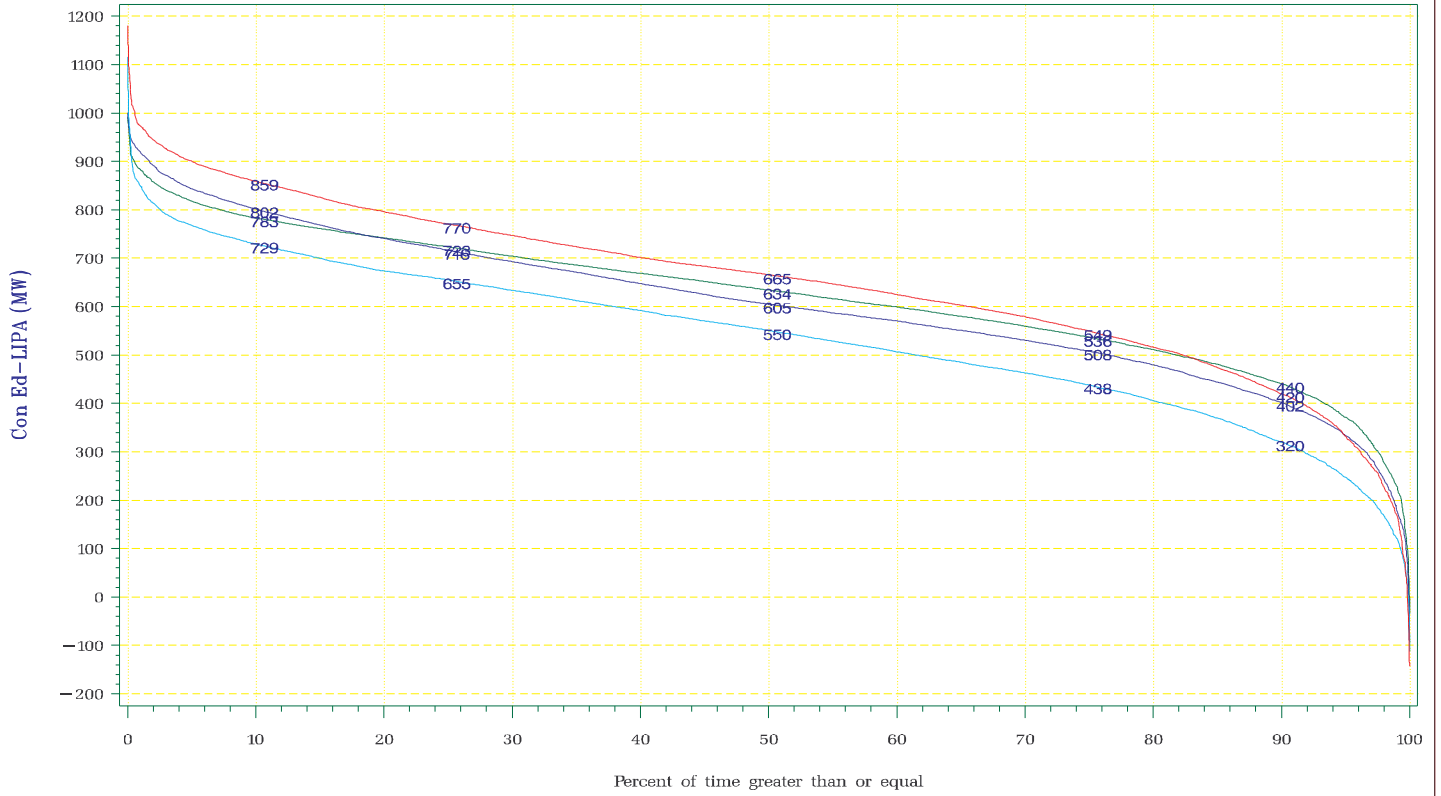
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1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

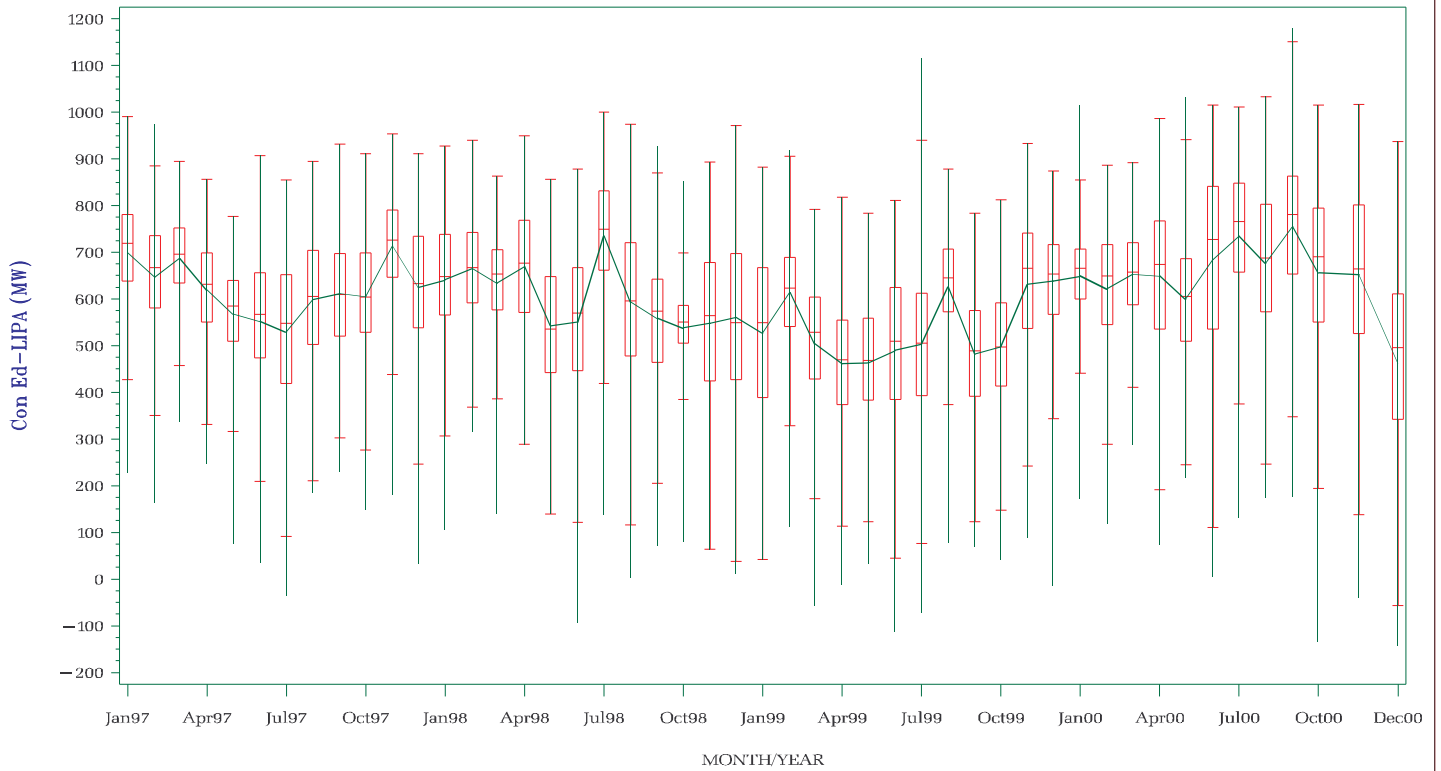
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1997 1998 1999 2000

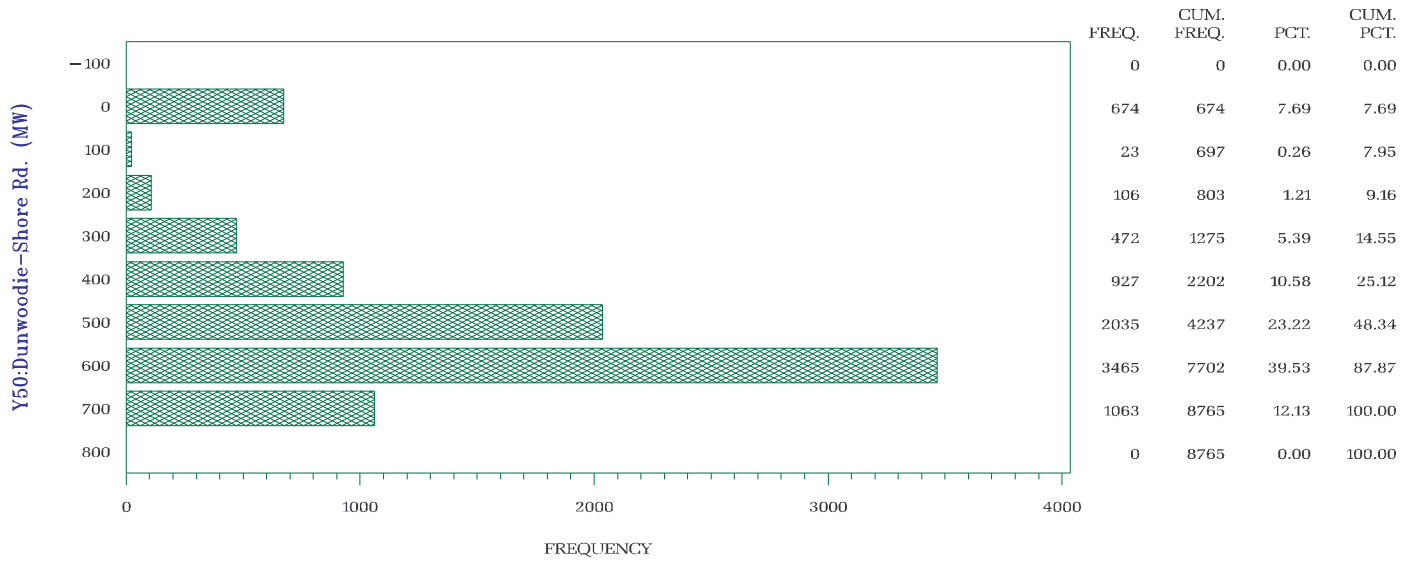
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

Con Ed – LIPA



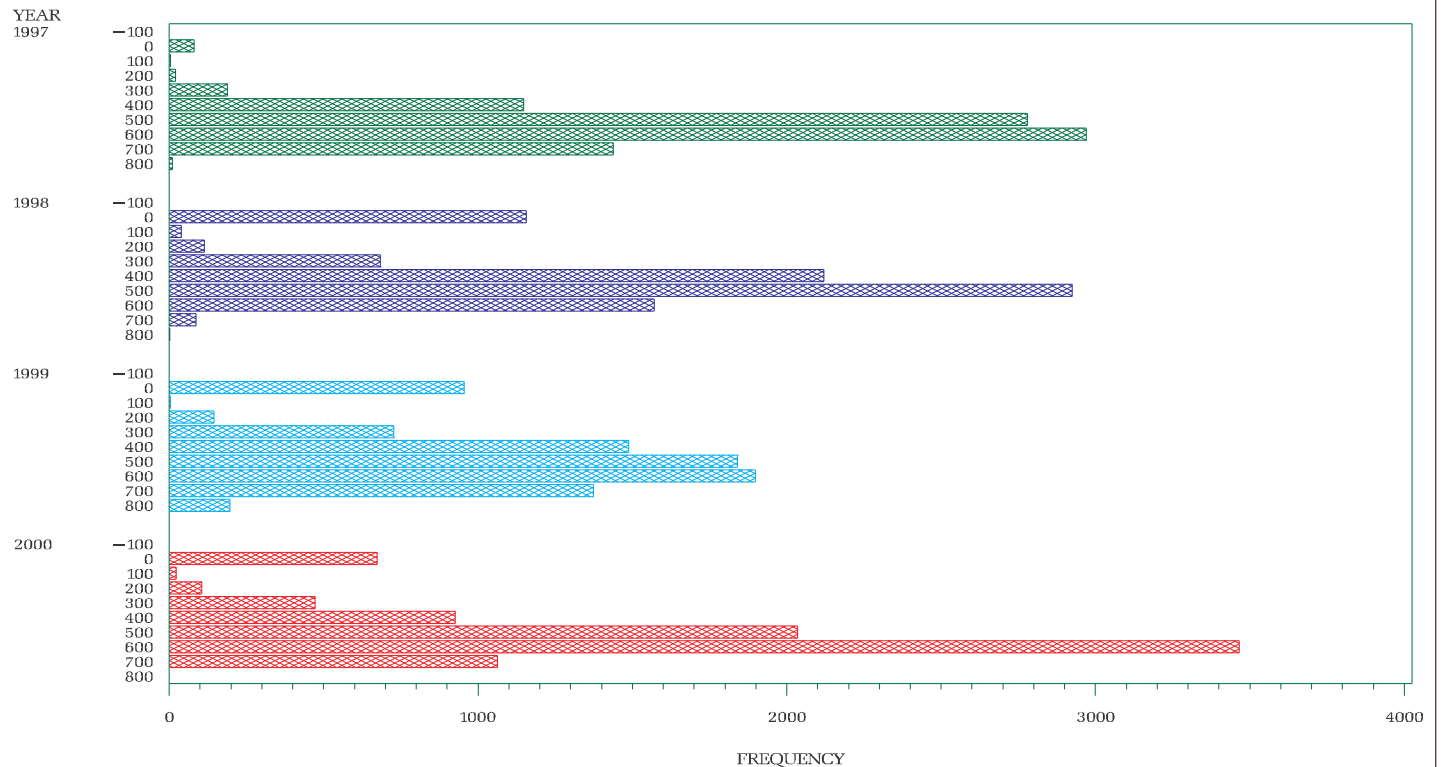
NYISO Transmission Use Statistics For January–December 2000

Y50:Dunwoodie – Shore Rd.



NYISO Transmission Use Statistics For January 1997–December 2000

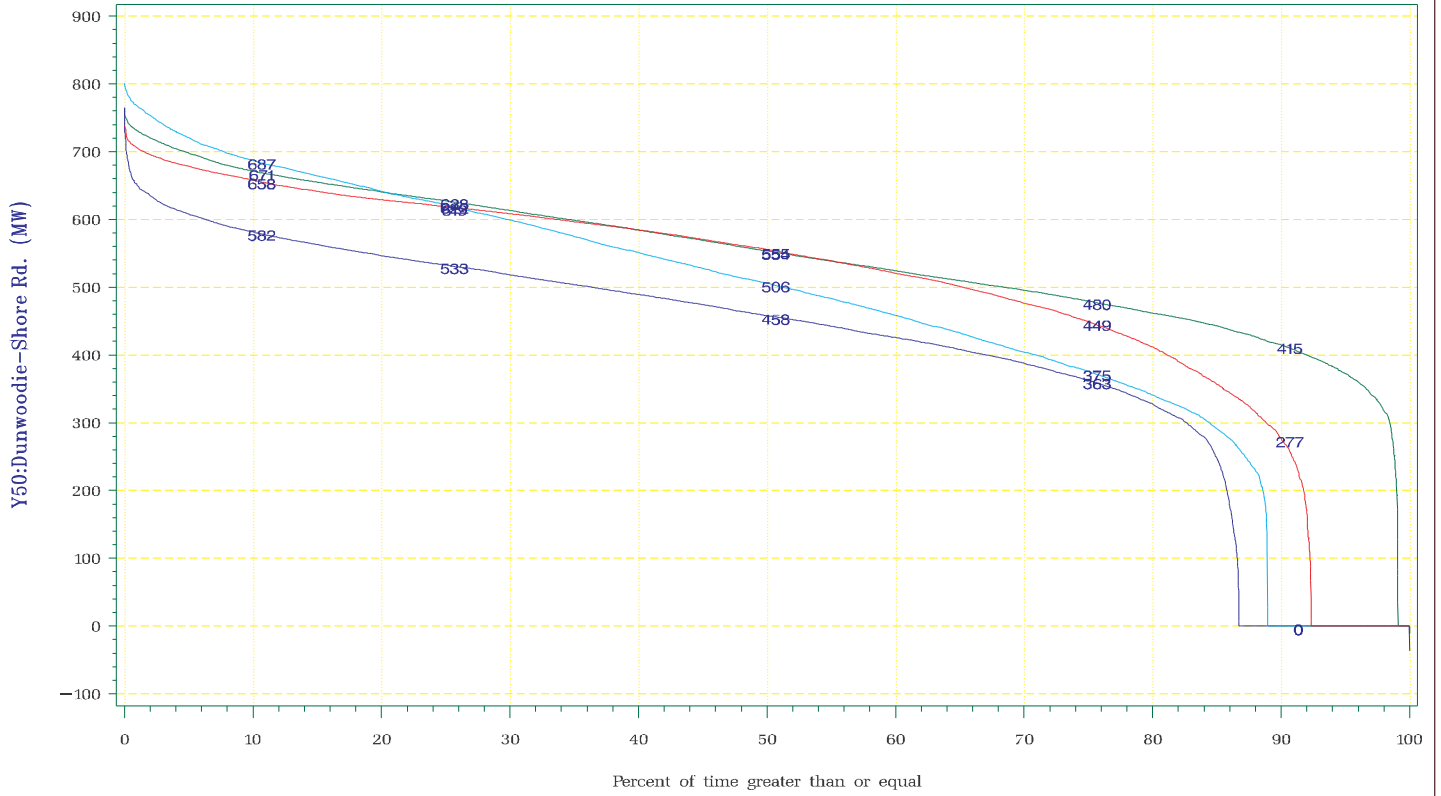
Y50:Dunwoodie – Shore Rd.



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

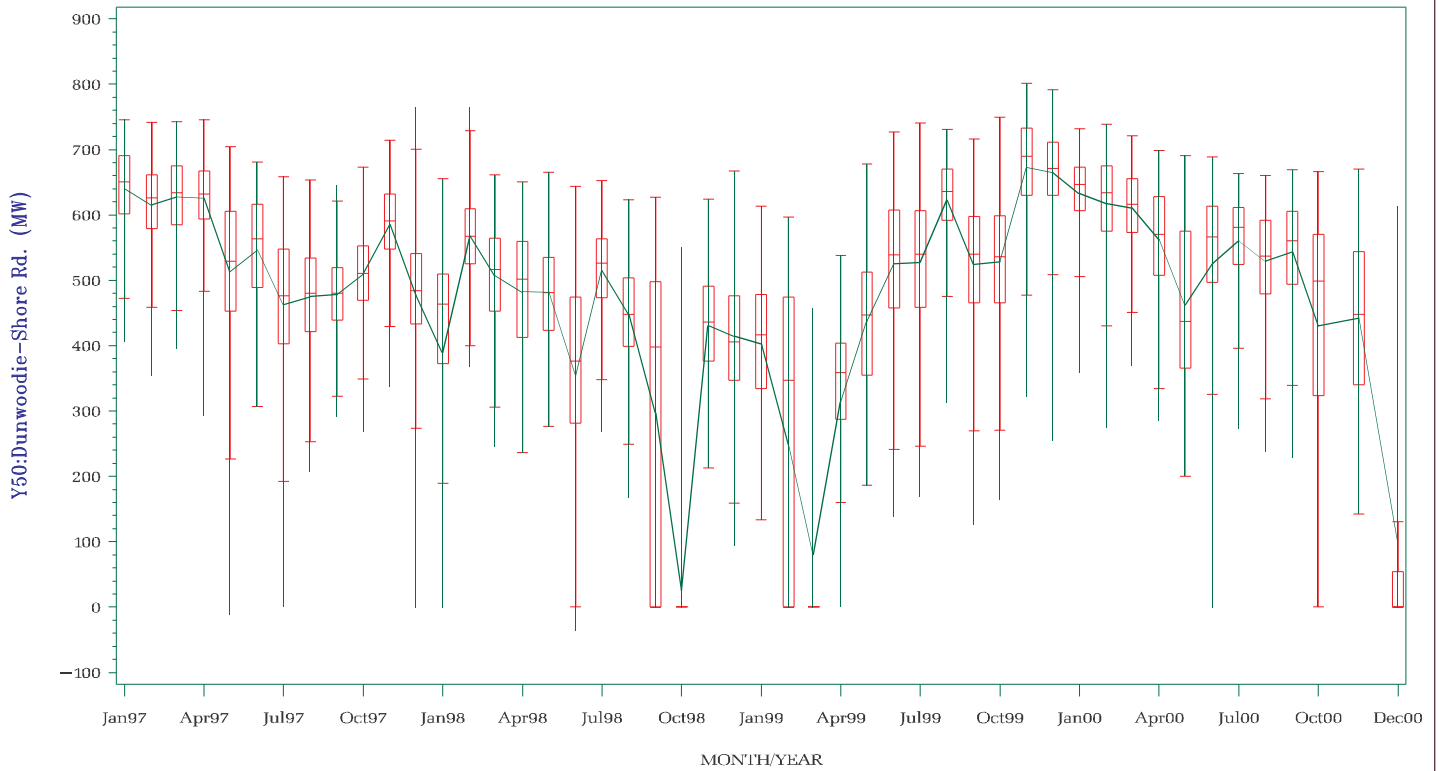
Y50:Dunwoodie – Shore Rd.



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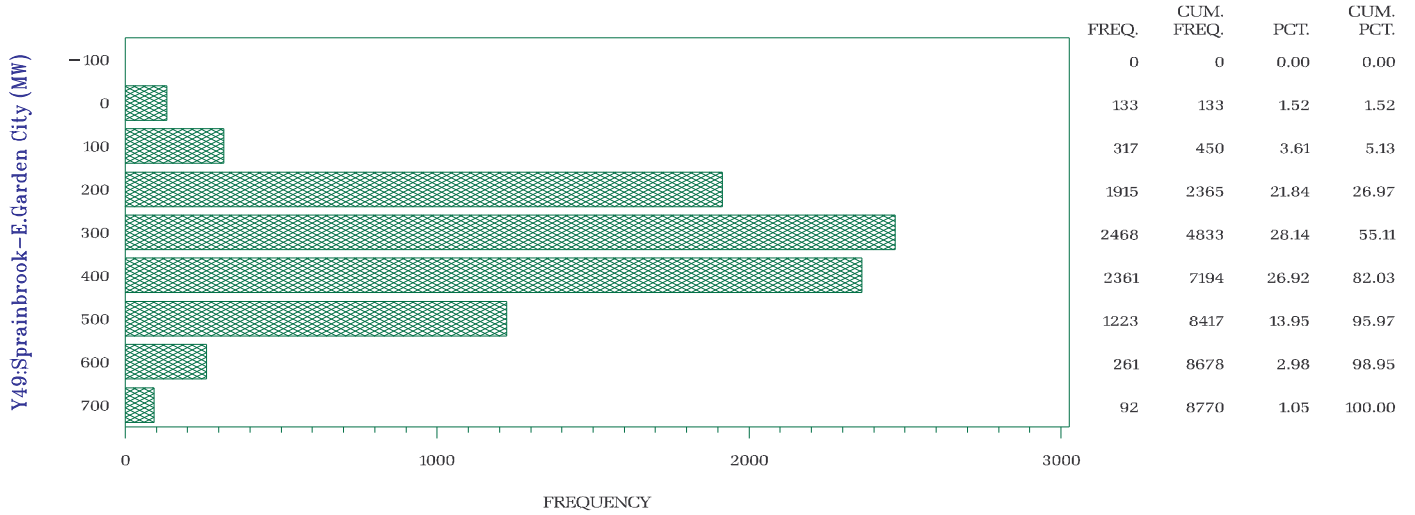
NYISO Average Monthly Interface Flow
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Y50:Dunwoodie – Shore Rd.



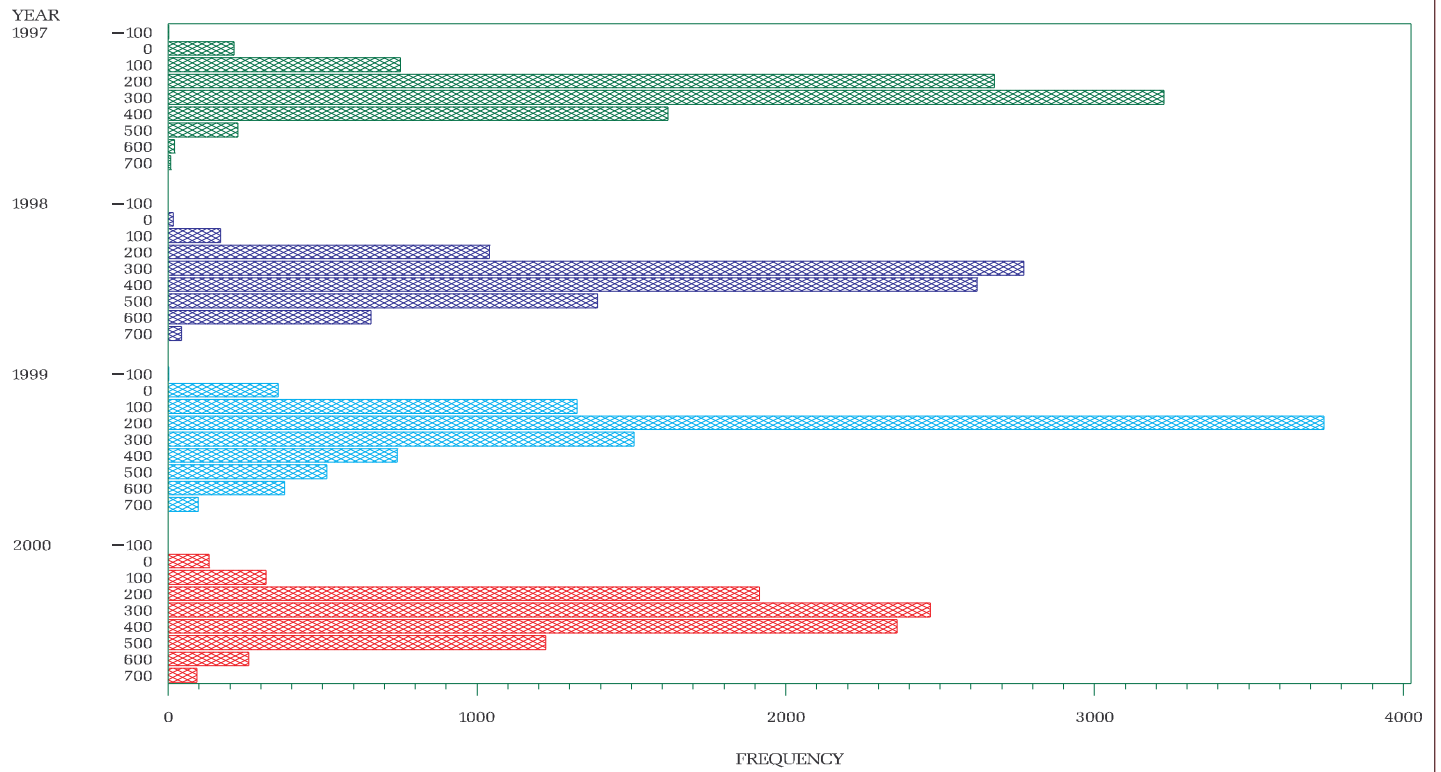
NYISO Transmission Use Statistics For January–December 2000

Y49:Sprainbrook – E.Garden City



NYISO Transmission Use Statistics For January 1997–December 2000

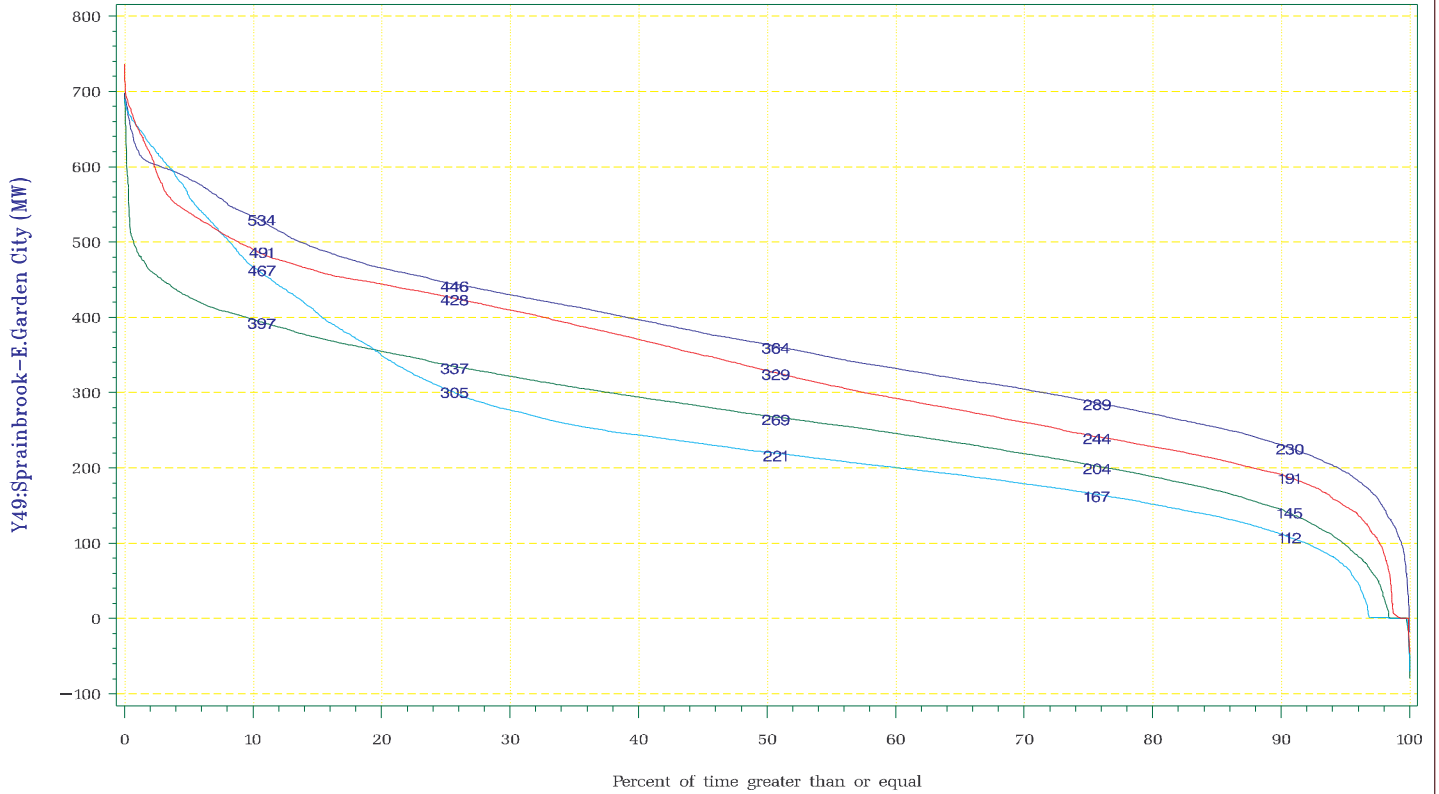
Y49:Sprainbrook – E.Garden City



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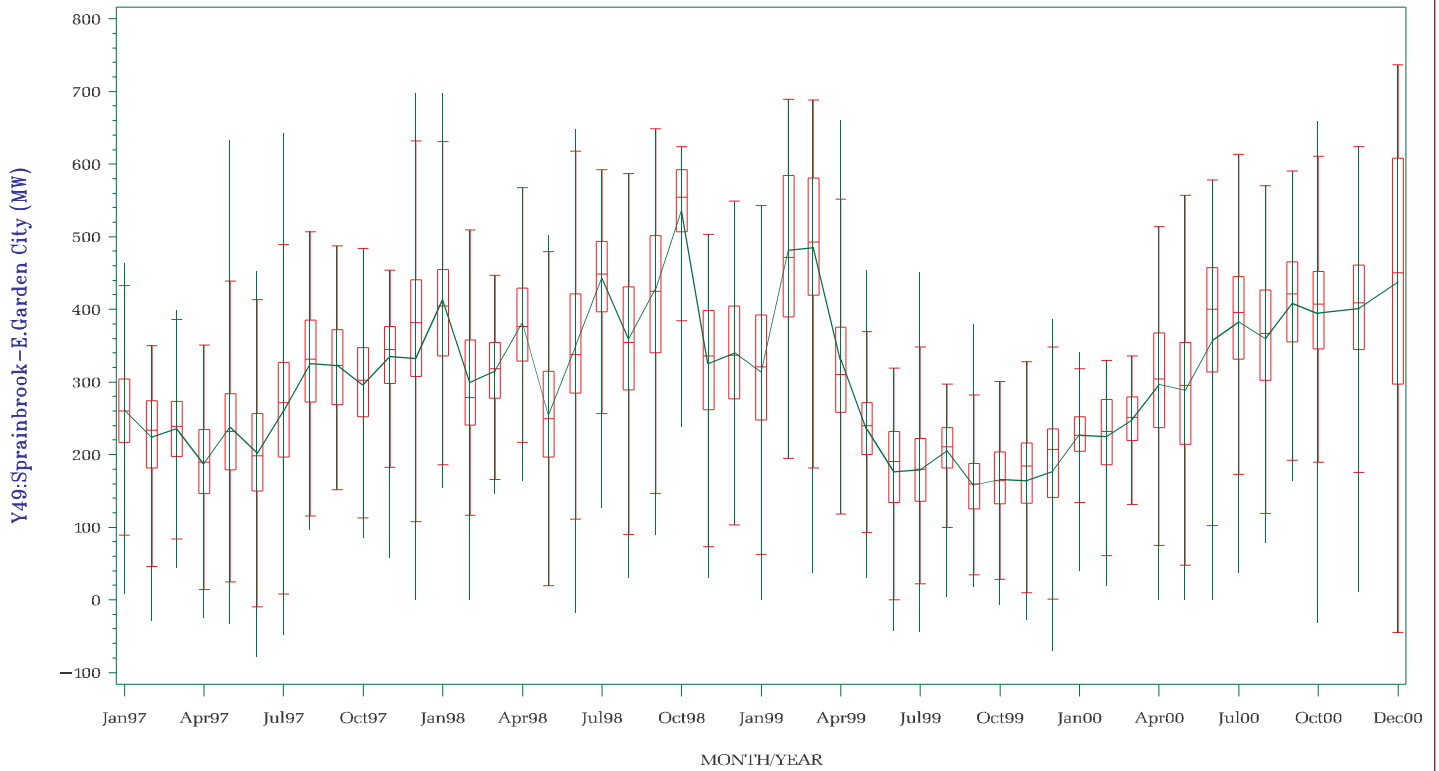
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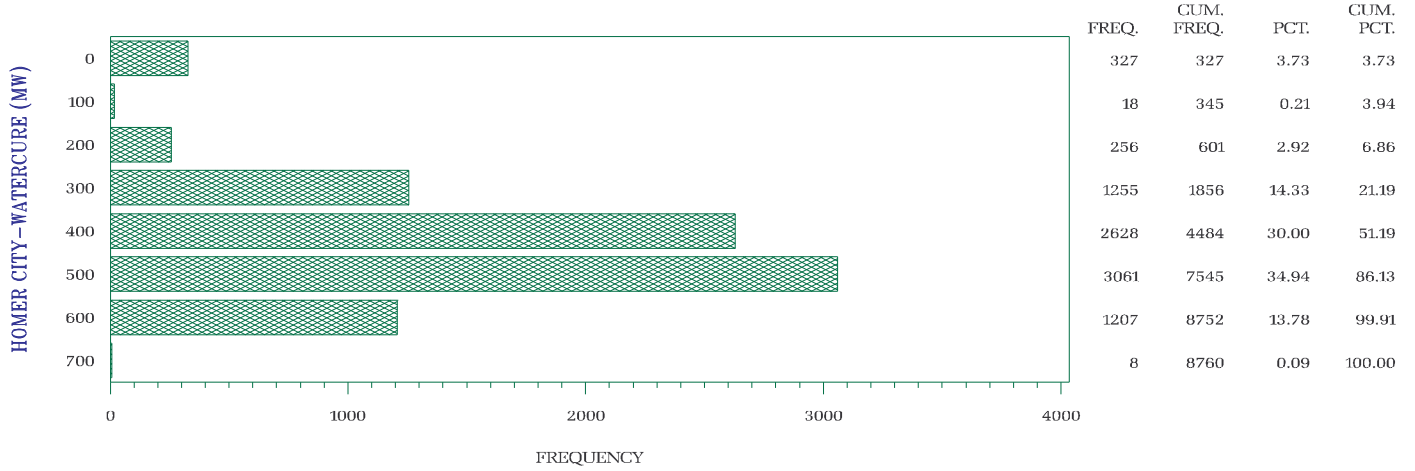
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Y49:Sprainbrook – E.Garden City



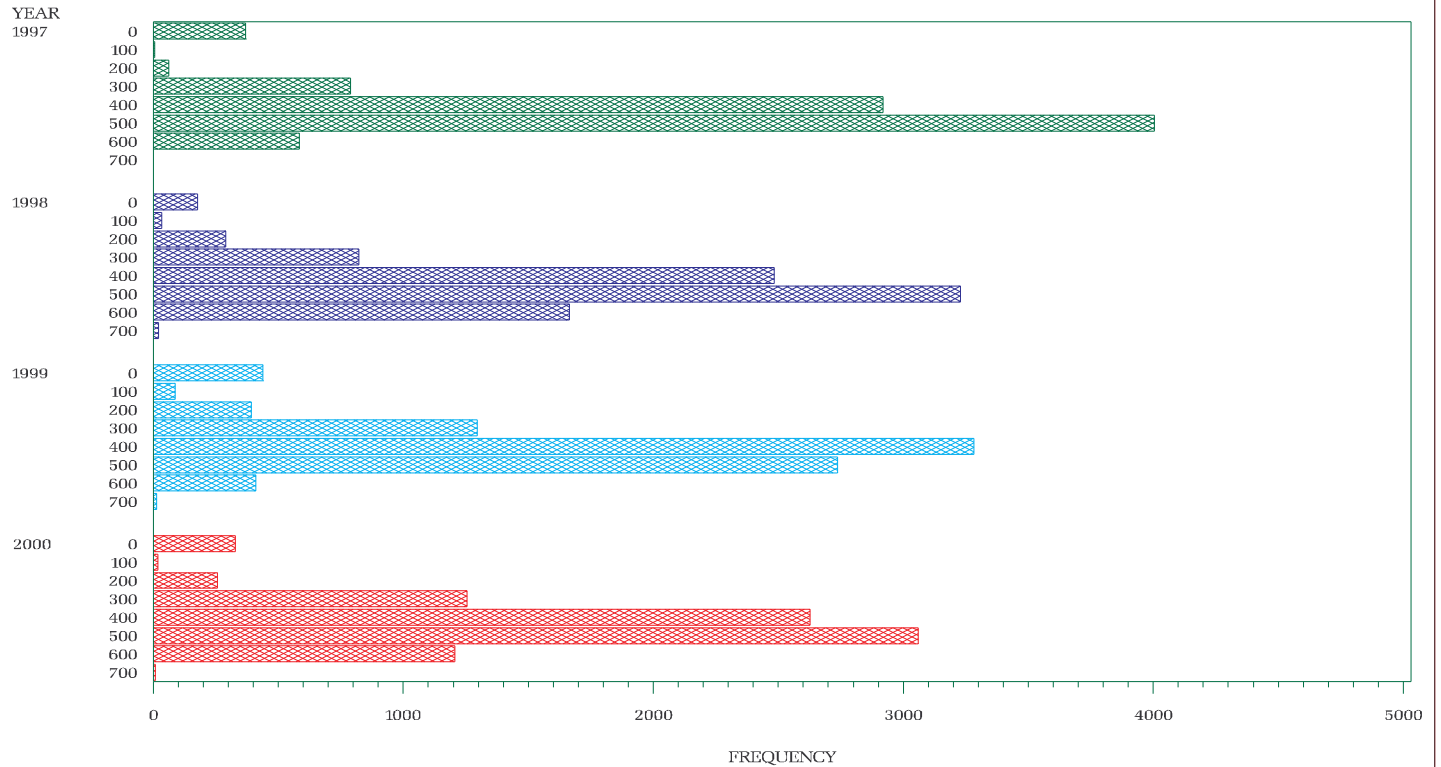
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HOMER CITY – WATERCURE



NYISO Transmission Use Statistics For January 1997-December 2000

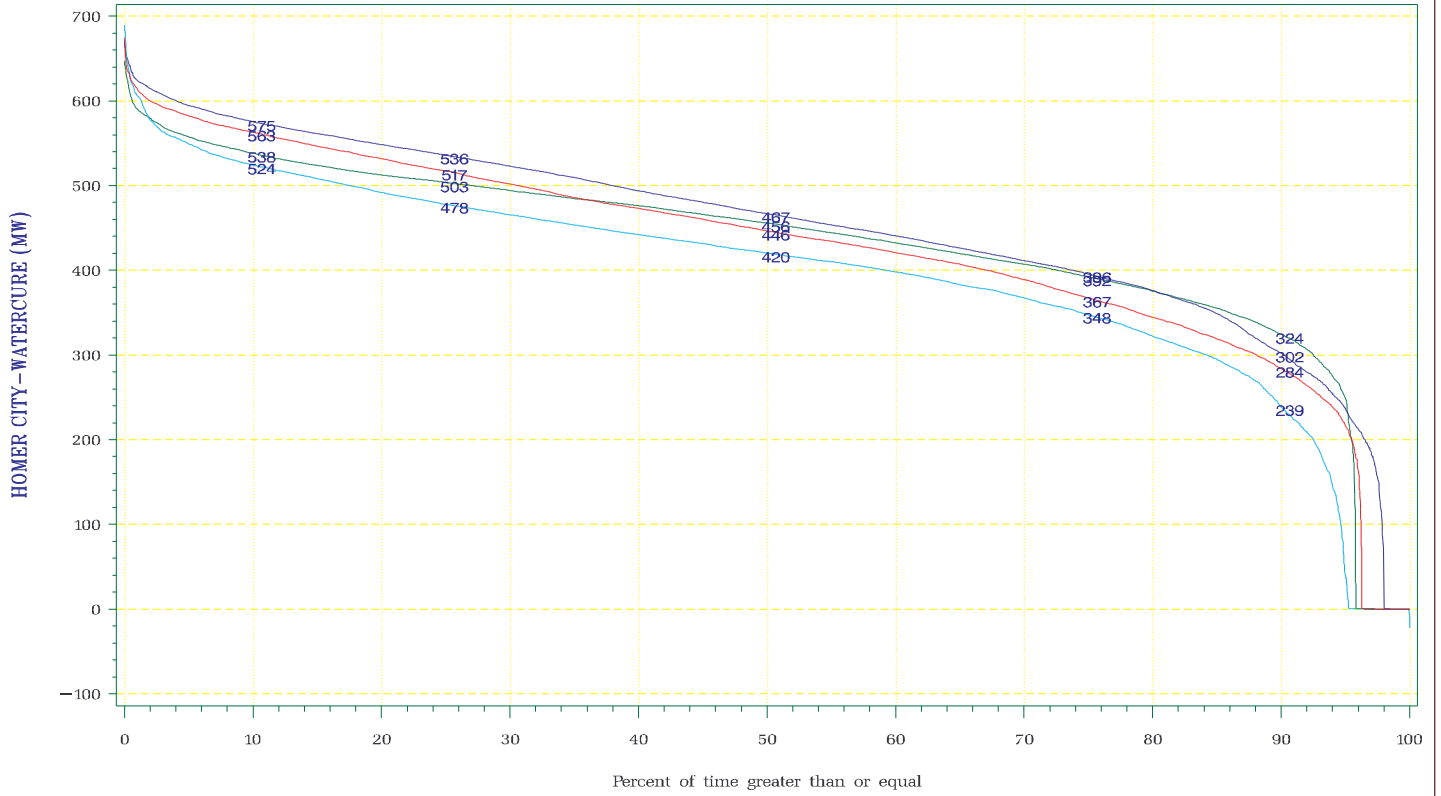
HOMER CITY – WATERCURE



1997 1998 1999 2000

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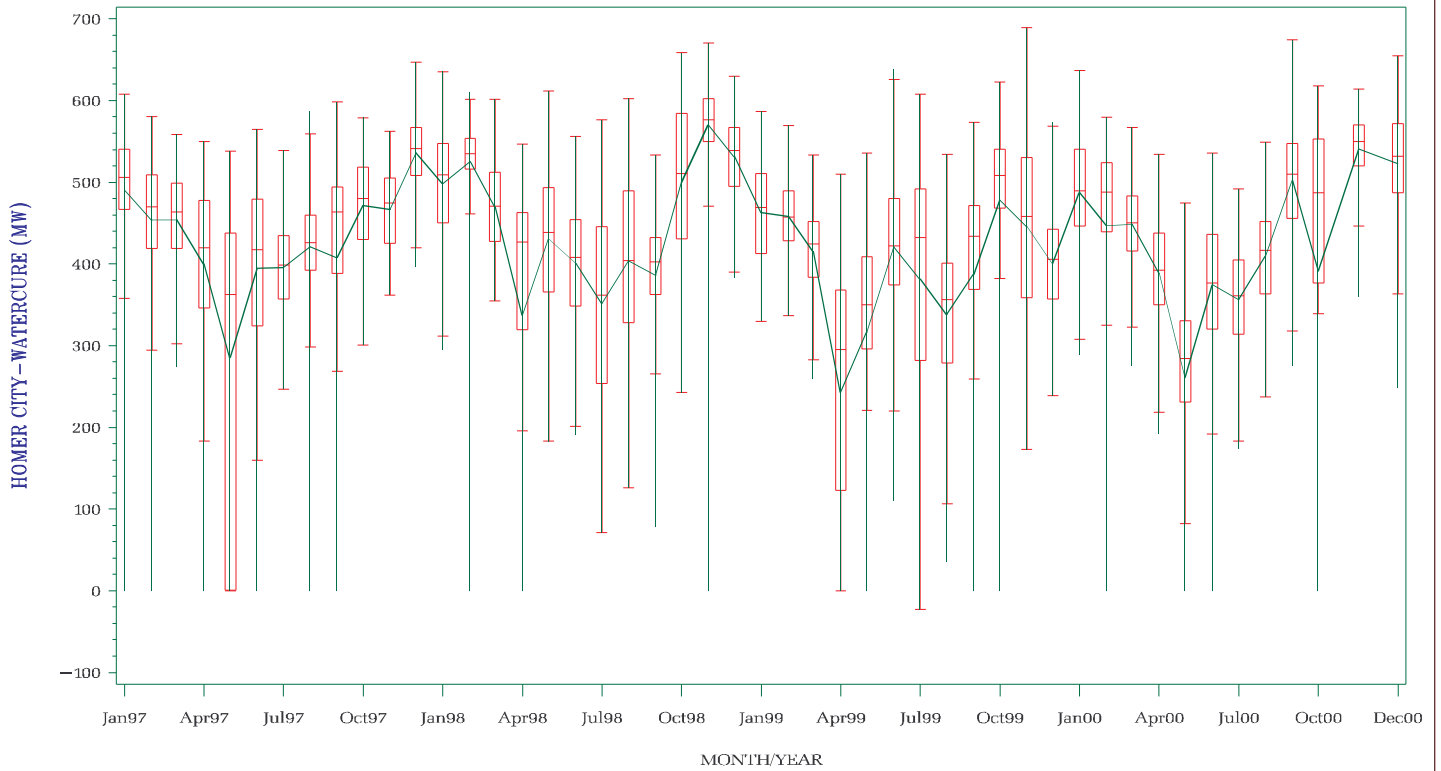
HOMER CITY – WATERCURE



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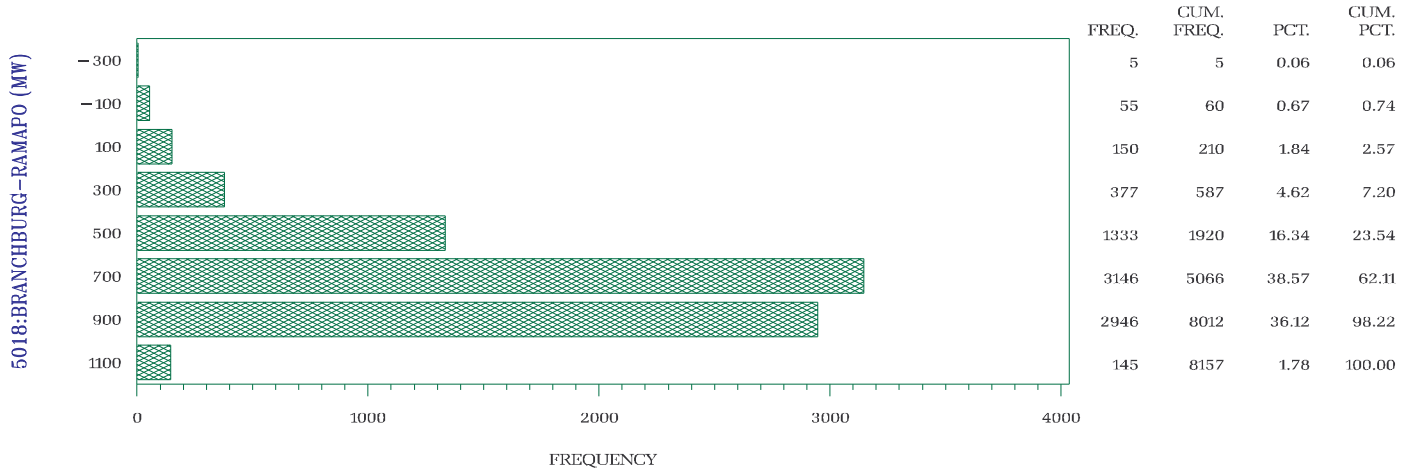
NYISO Average Monthly Interface Flow
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HOMER CITY – WATERCURE



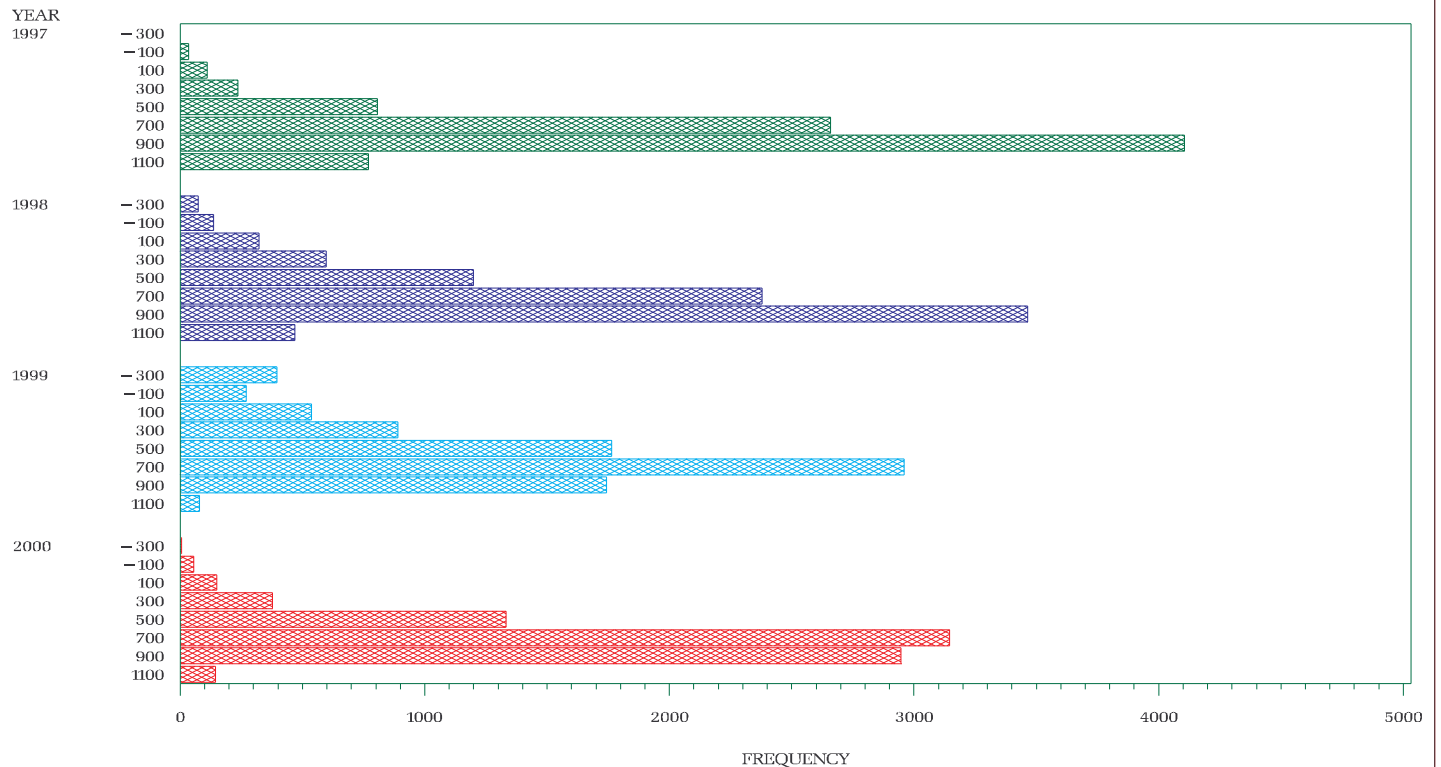
NYISO Transmission Use Statistics For January–December 2000

5018:BRANCHBURG – RAMAPO



NYISO Transmission Use Statistics For January 1997–December 2000

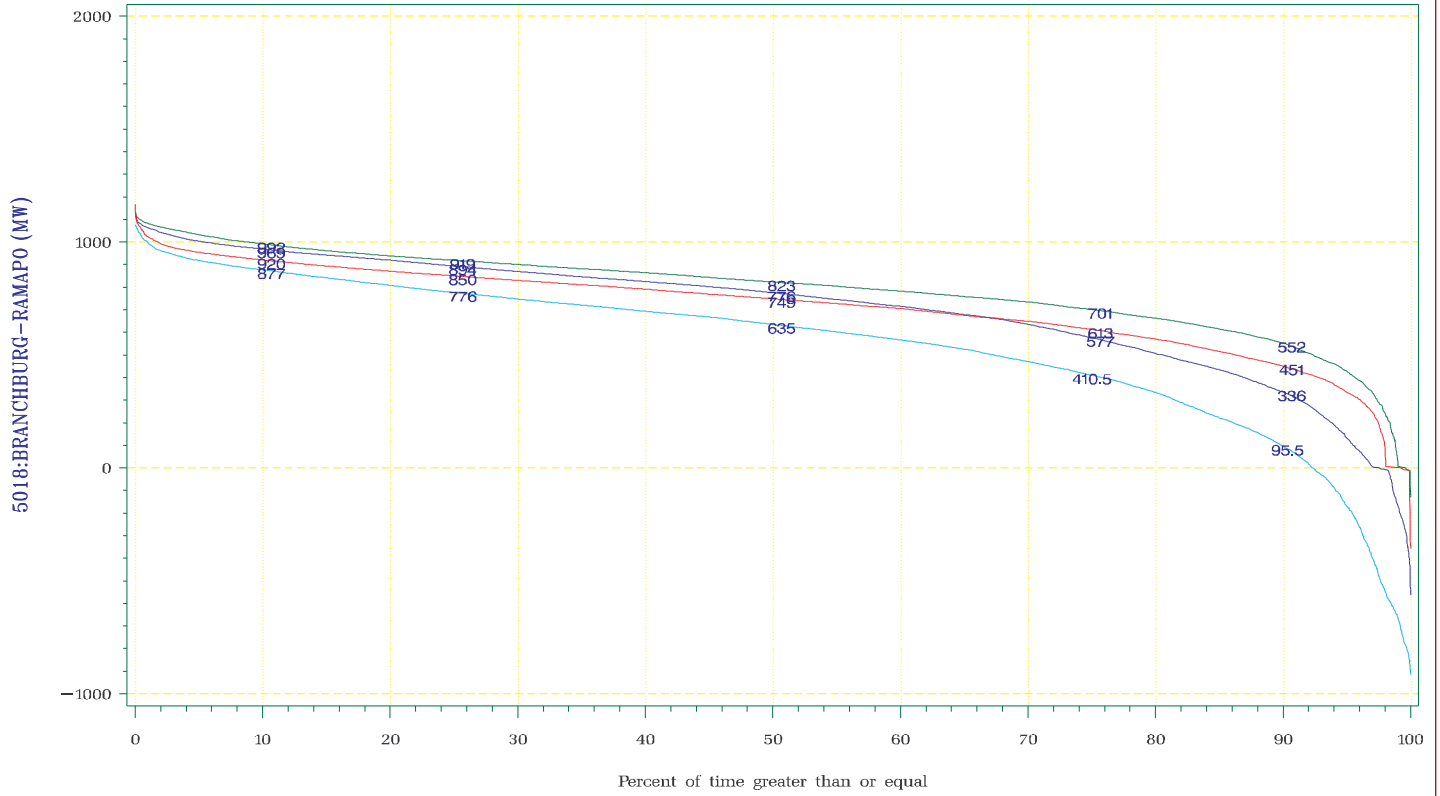
5018:BRANCHBURG – RAMAPO



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

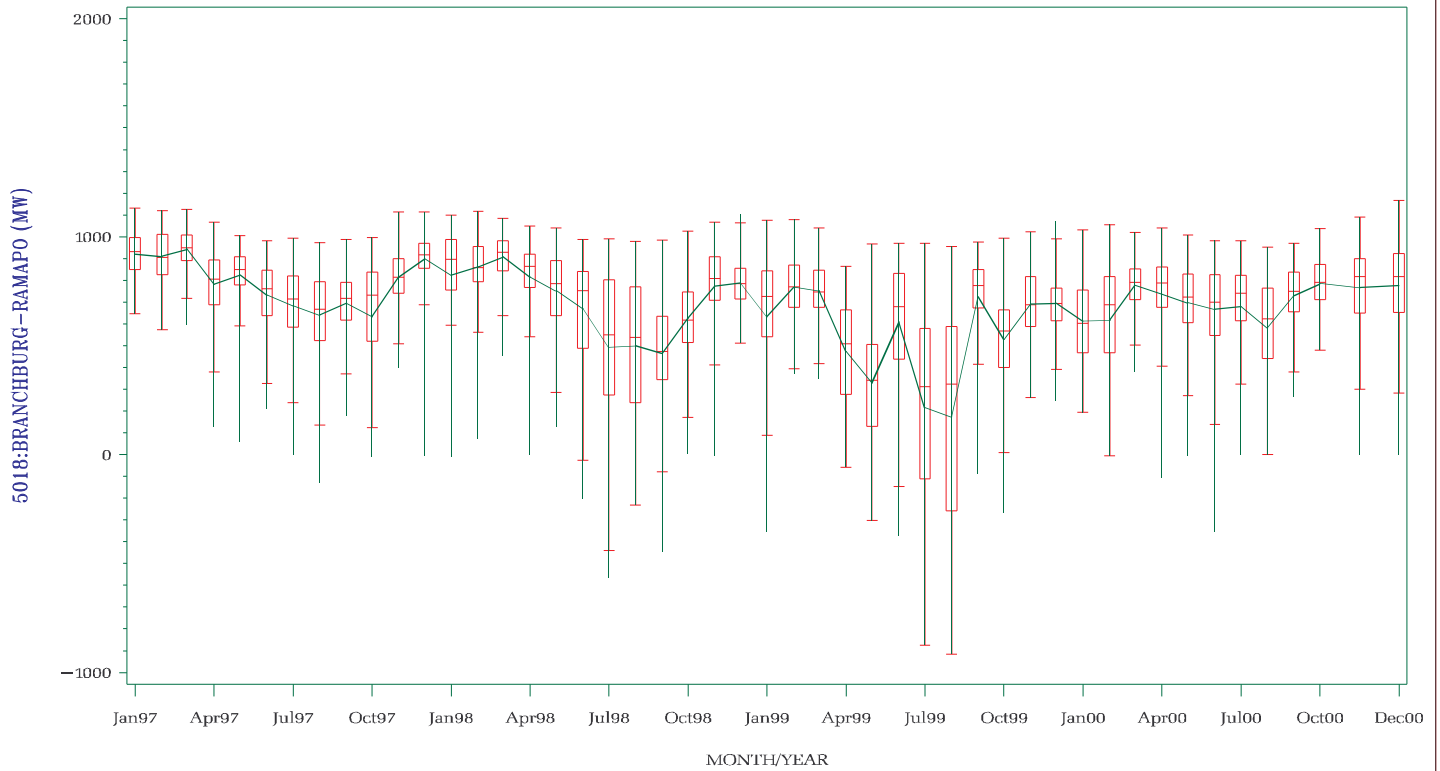
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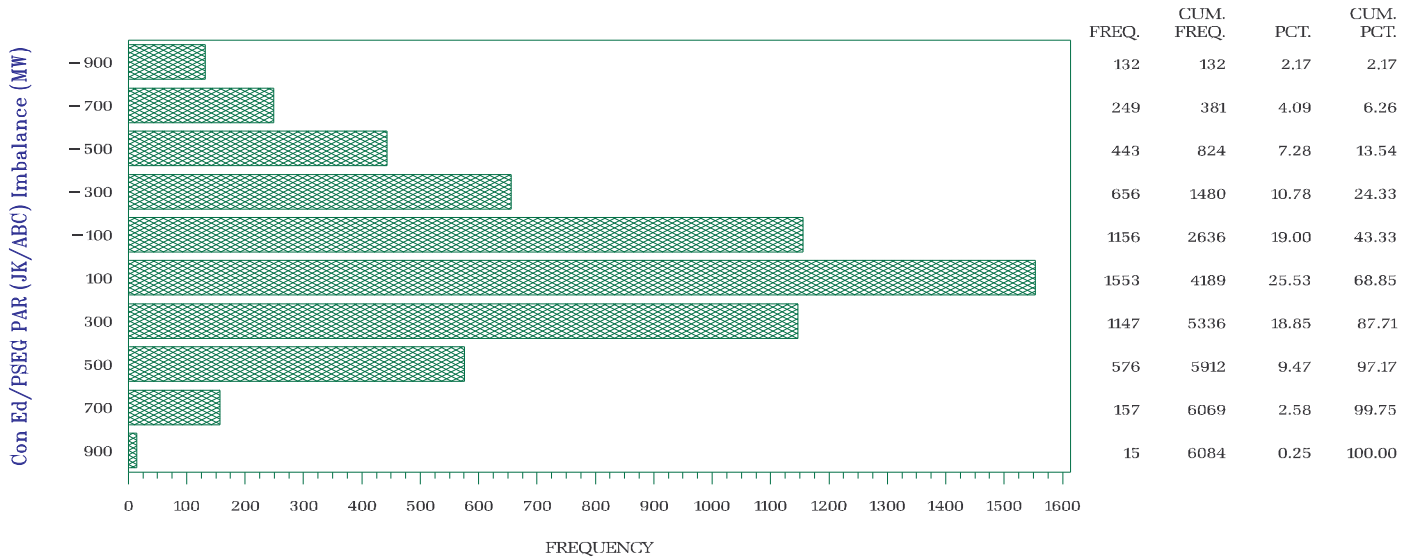
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January 1, 1997 – December 31, 2000

5018:BRANCHBURG – RAMAPO



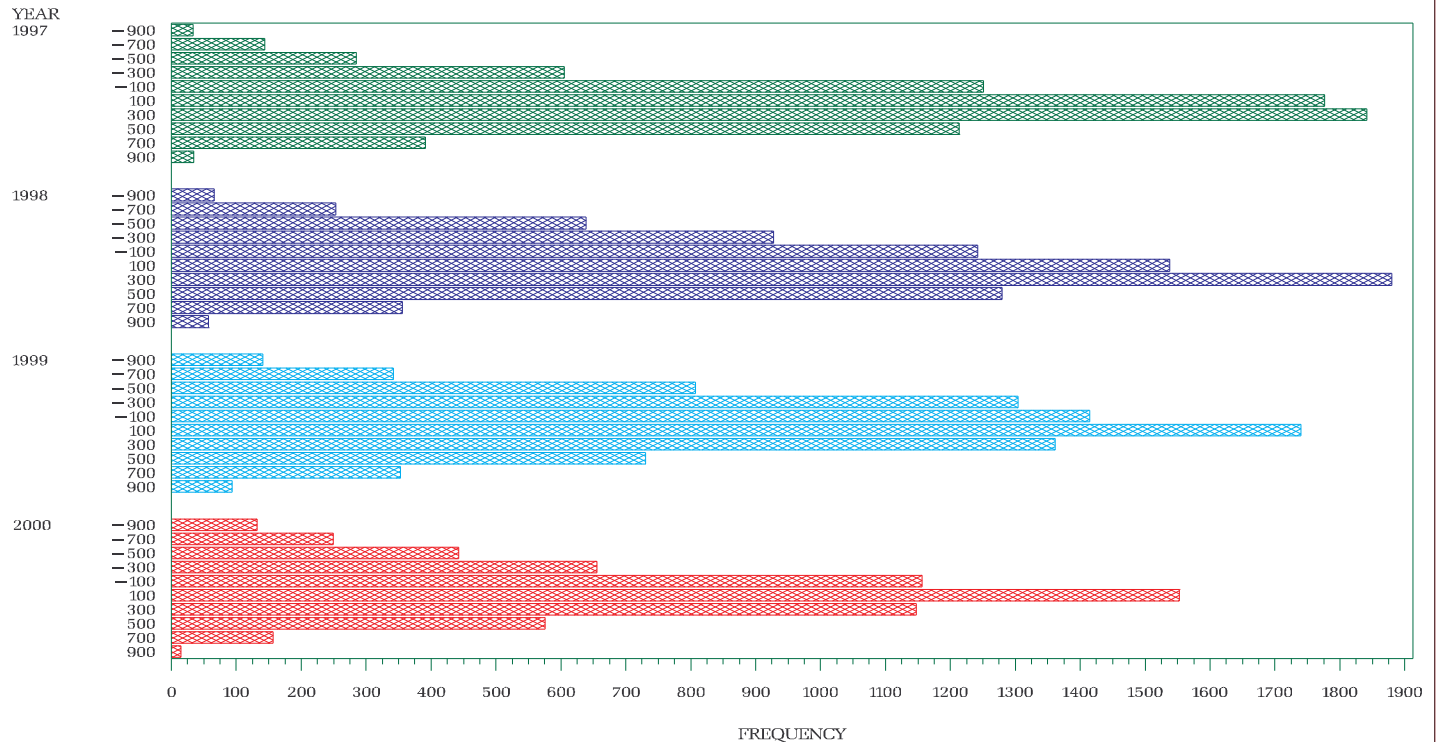
NYISO Transmission Use Statistics For January-December 2000

Con Ed/PSEG PAR (JK/ABC) Imbalance
 Schedule is NY -> PJM == + is CCW: is CW



NYISO Transmission Use Statistics For January 1997-December 2000

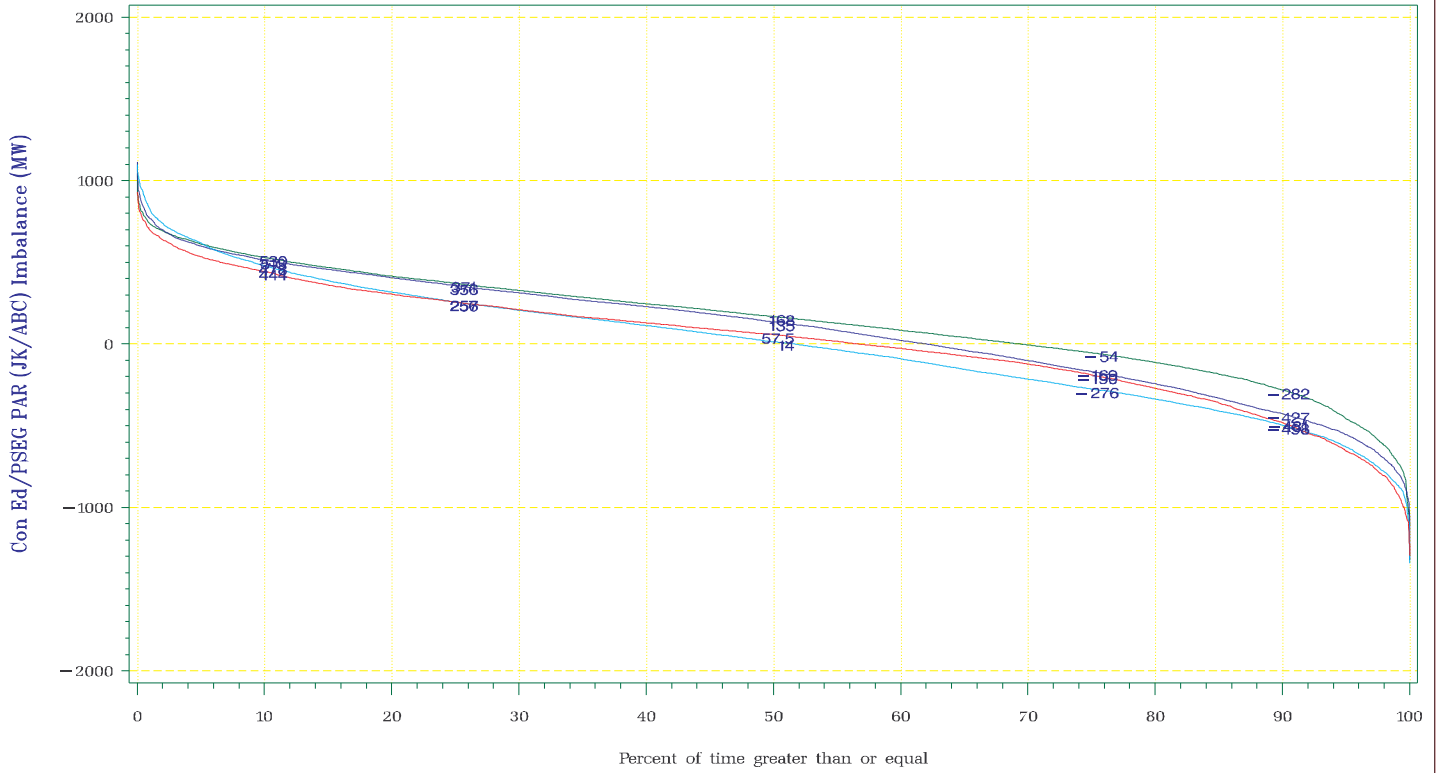
Con Ed/PSEG PAR (JK/ABC) Imbalance
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1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

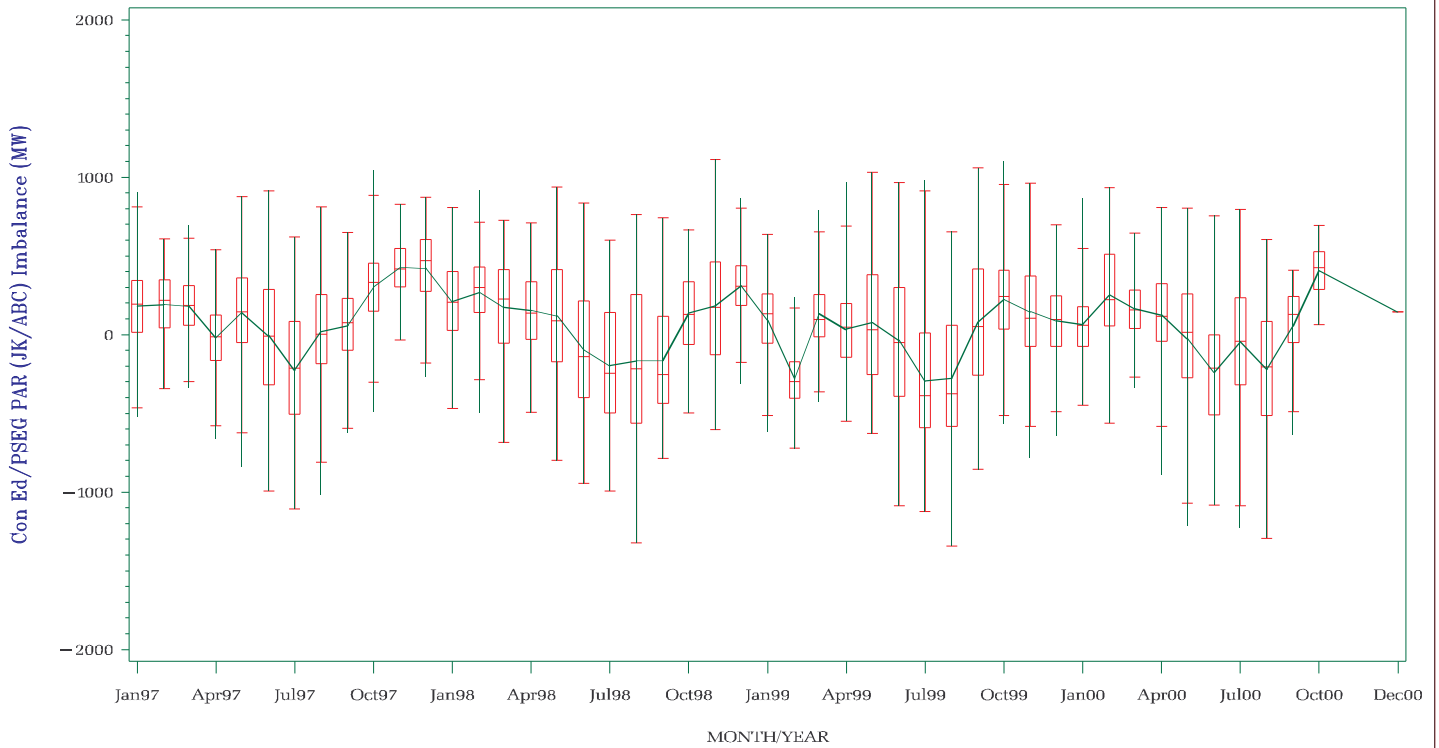
Con Ed/PSEG PAR (JK/ABC) Imbalance
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1997 1998 1999 2000

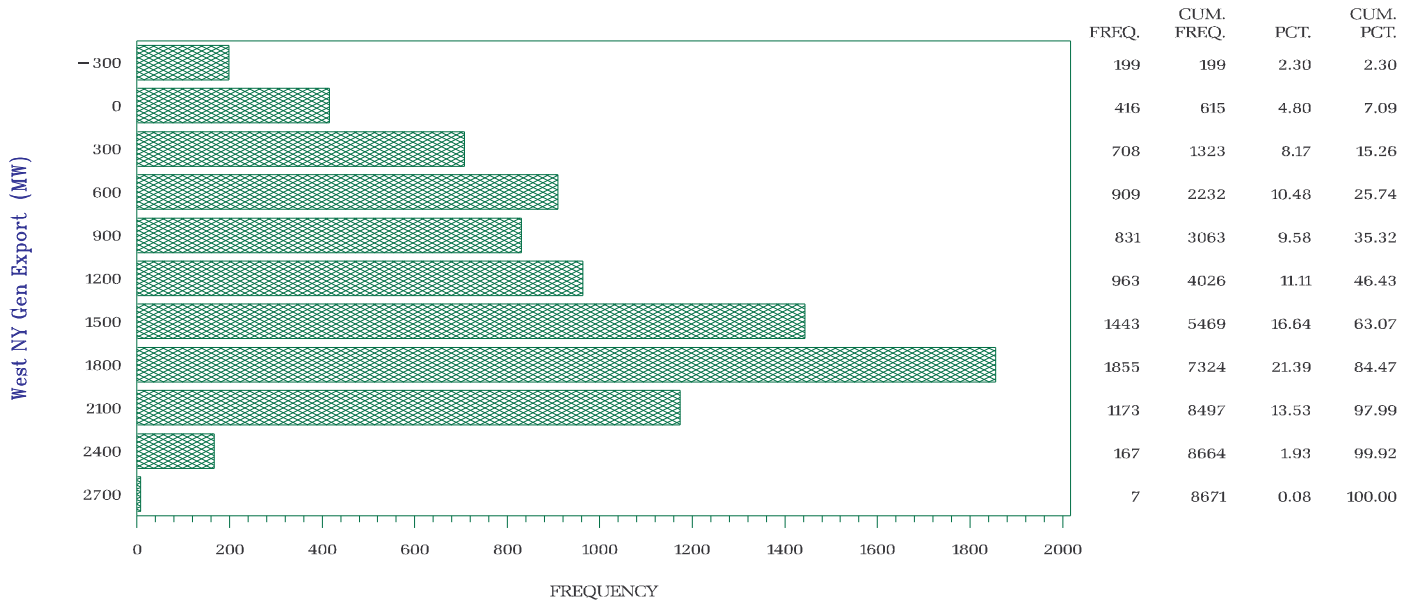
NYISO Average Monthly Interface Flow
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Con Ed/PSEG PAR (JK/ABC) Imbalance
 Schedule is NY -> PJM == + is CCW: is CW



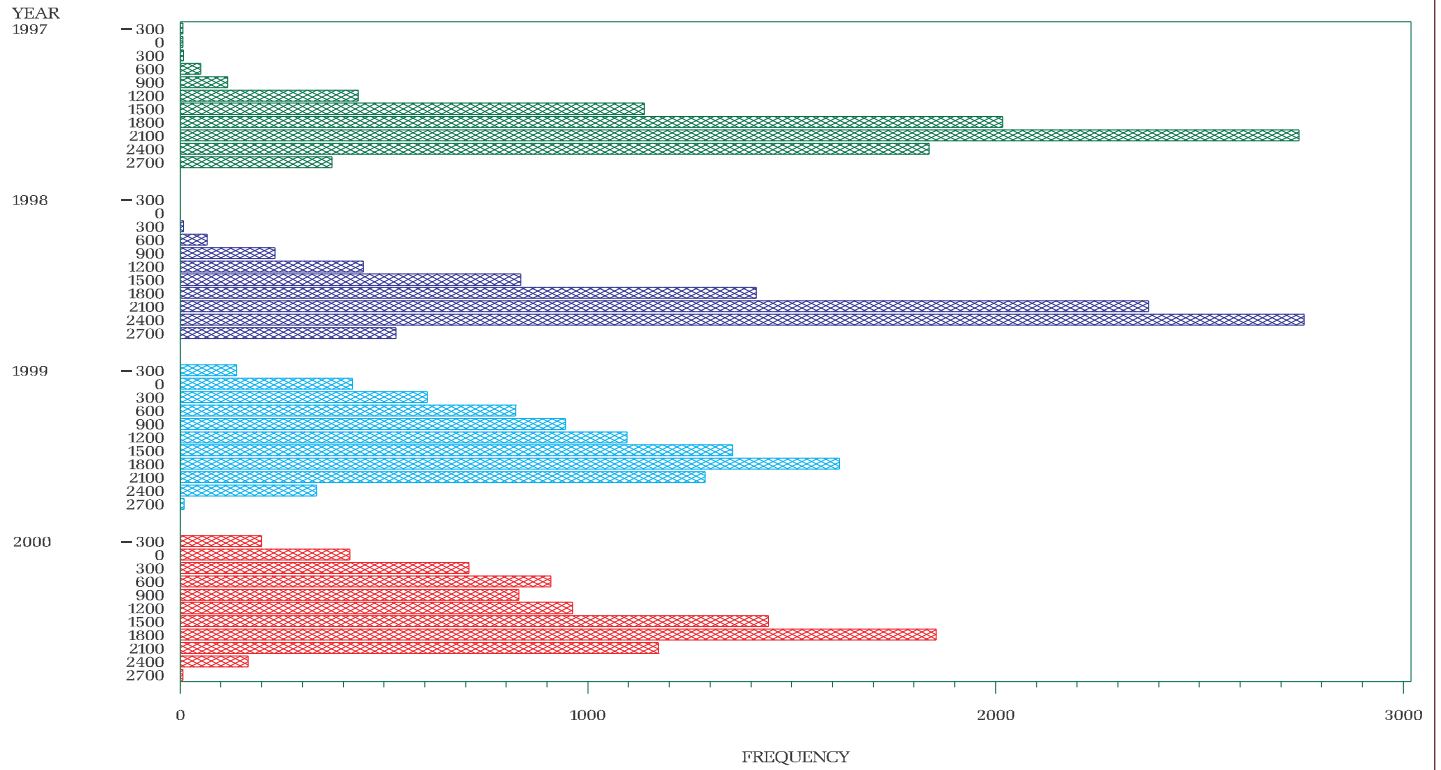
NYISO Transmission Use Statistics For January-December 2000

West NY Gen Export



NYISO Transmission Use Statistics For January 1997-December 2000

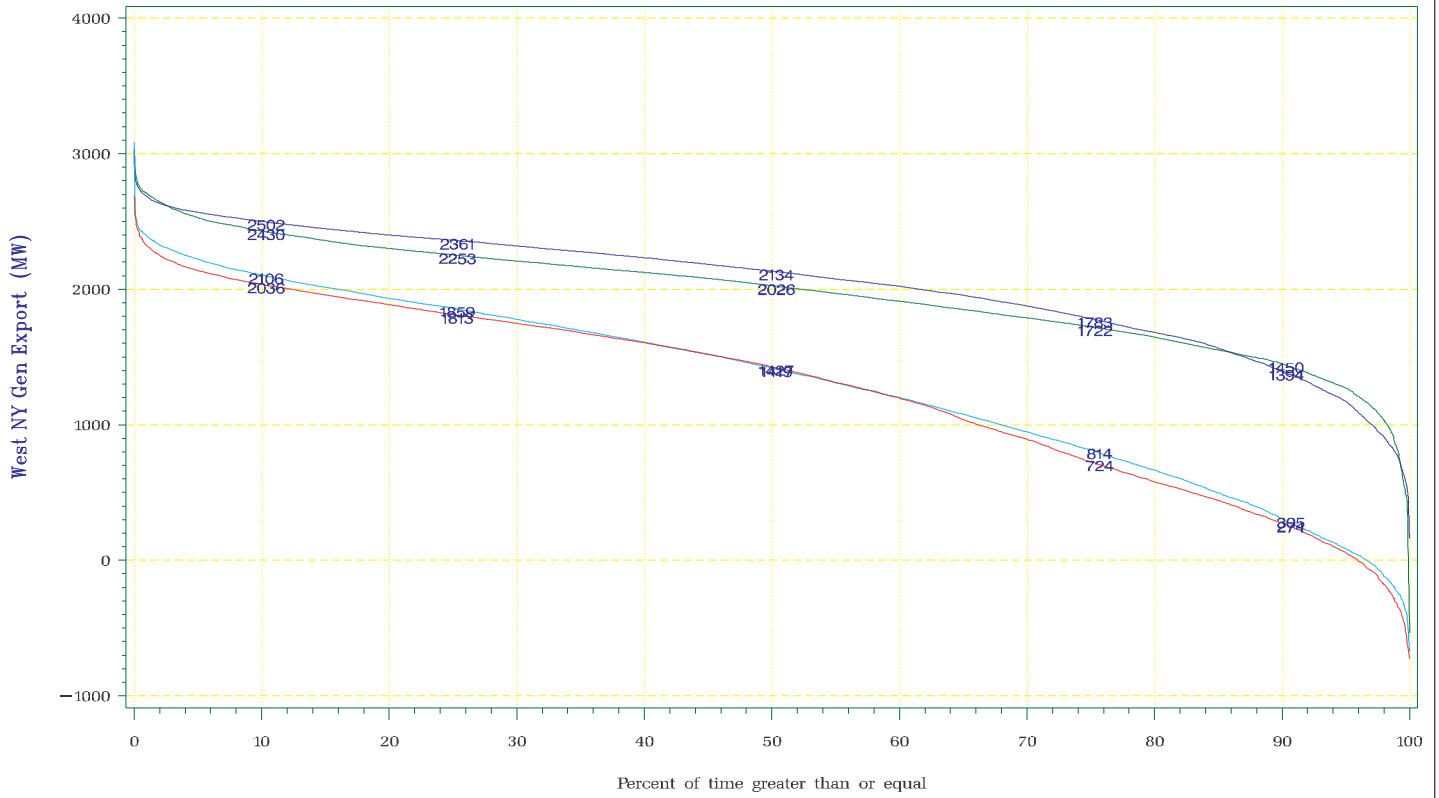
West NY Gen Export



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

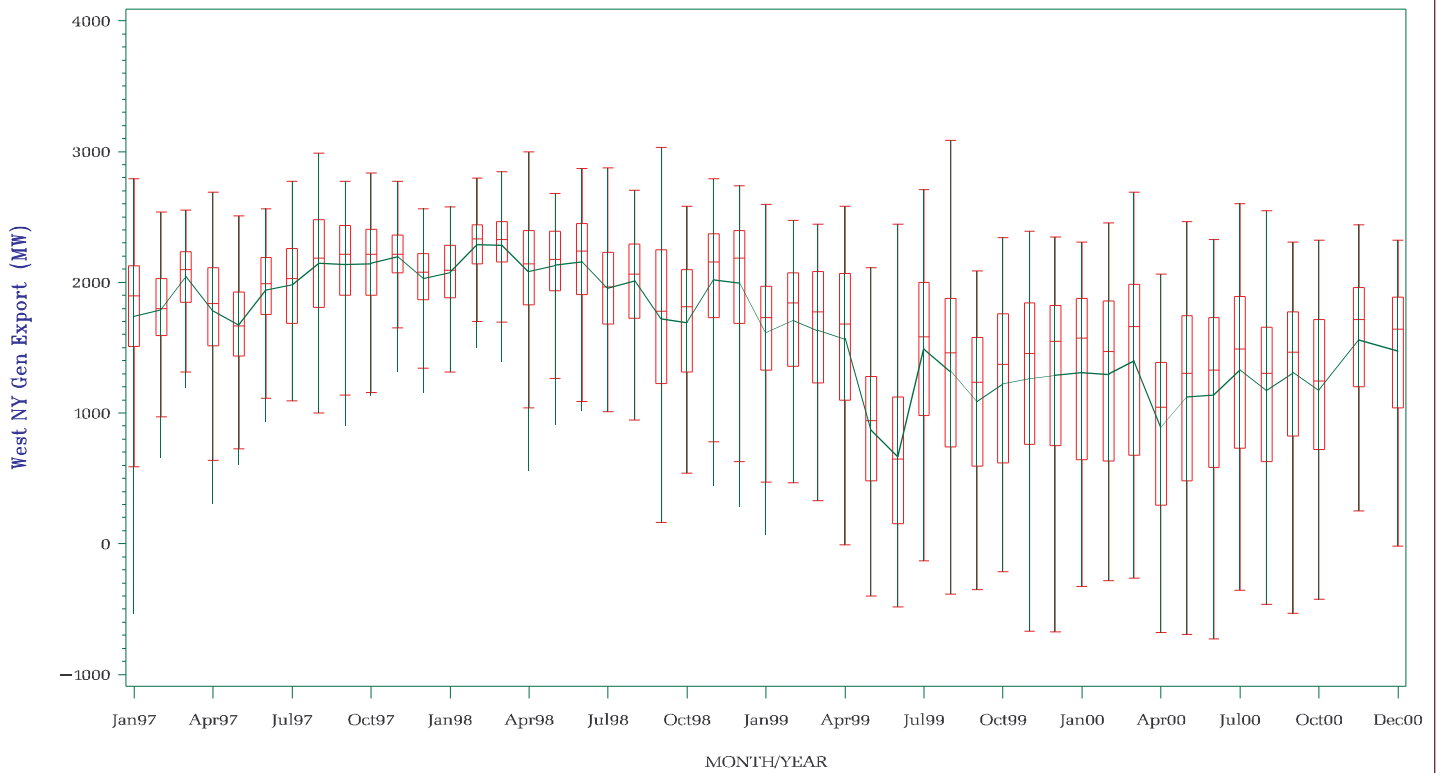
West NY Gen Export



1997 1998 1999 2000

NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

West NY Gen Export



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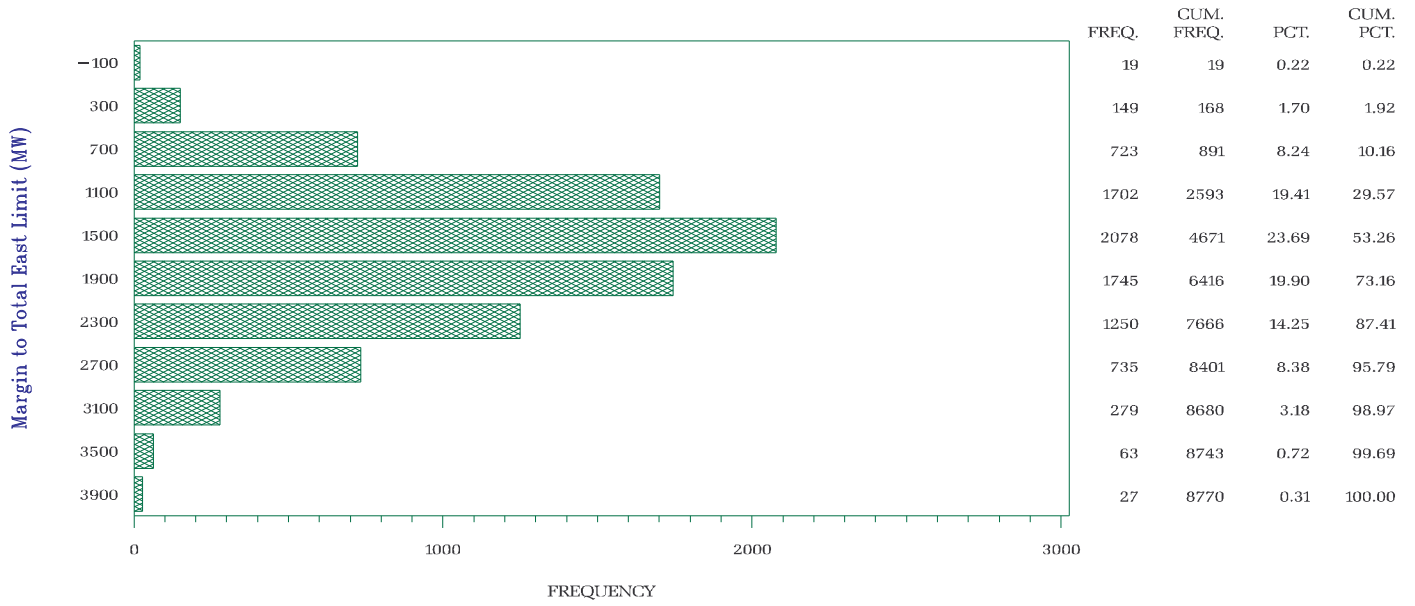
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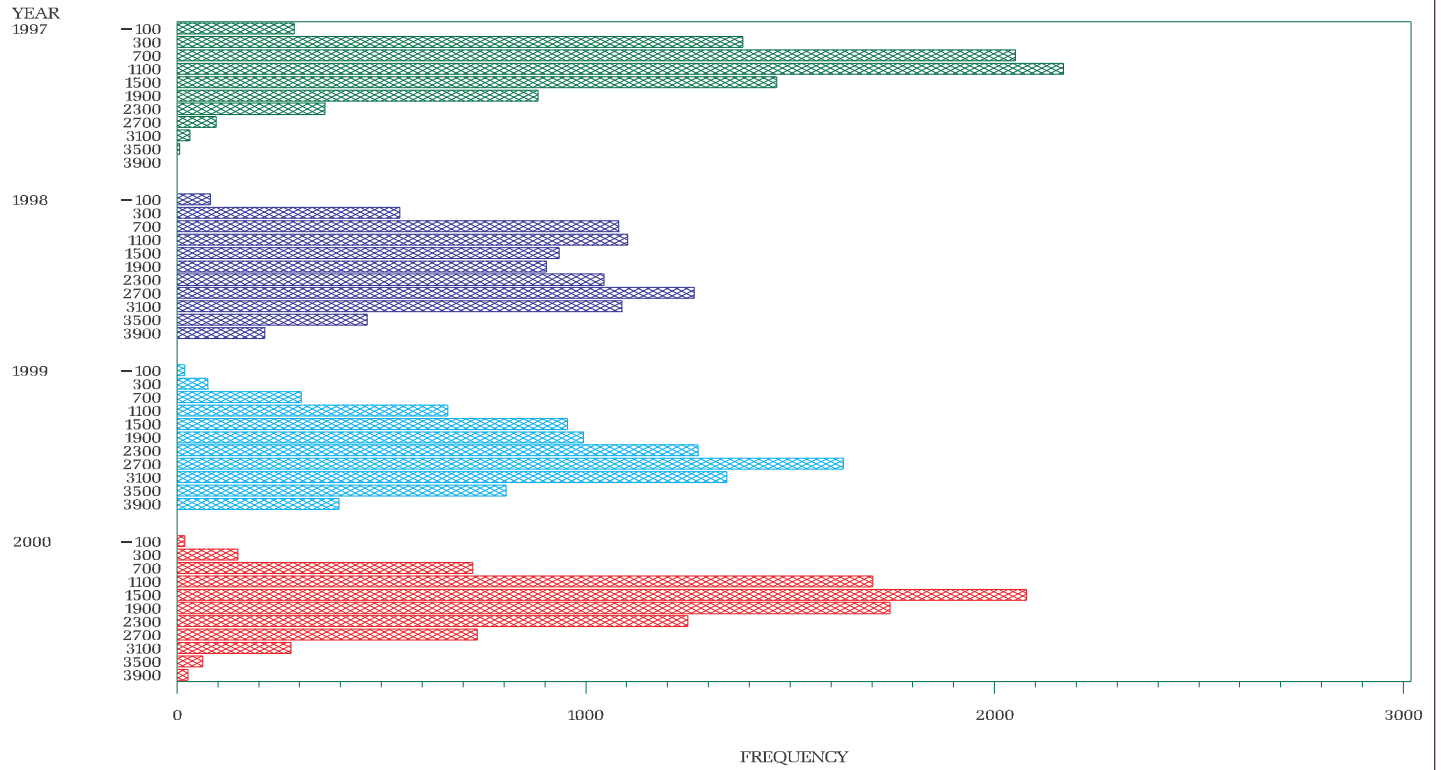
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Margin to Total East Limit



NYISO Transmission Use Statistics For January 1997-December 2000

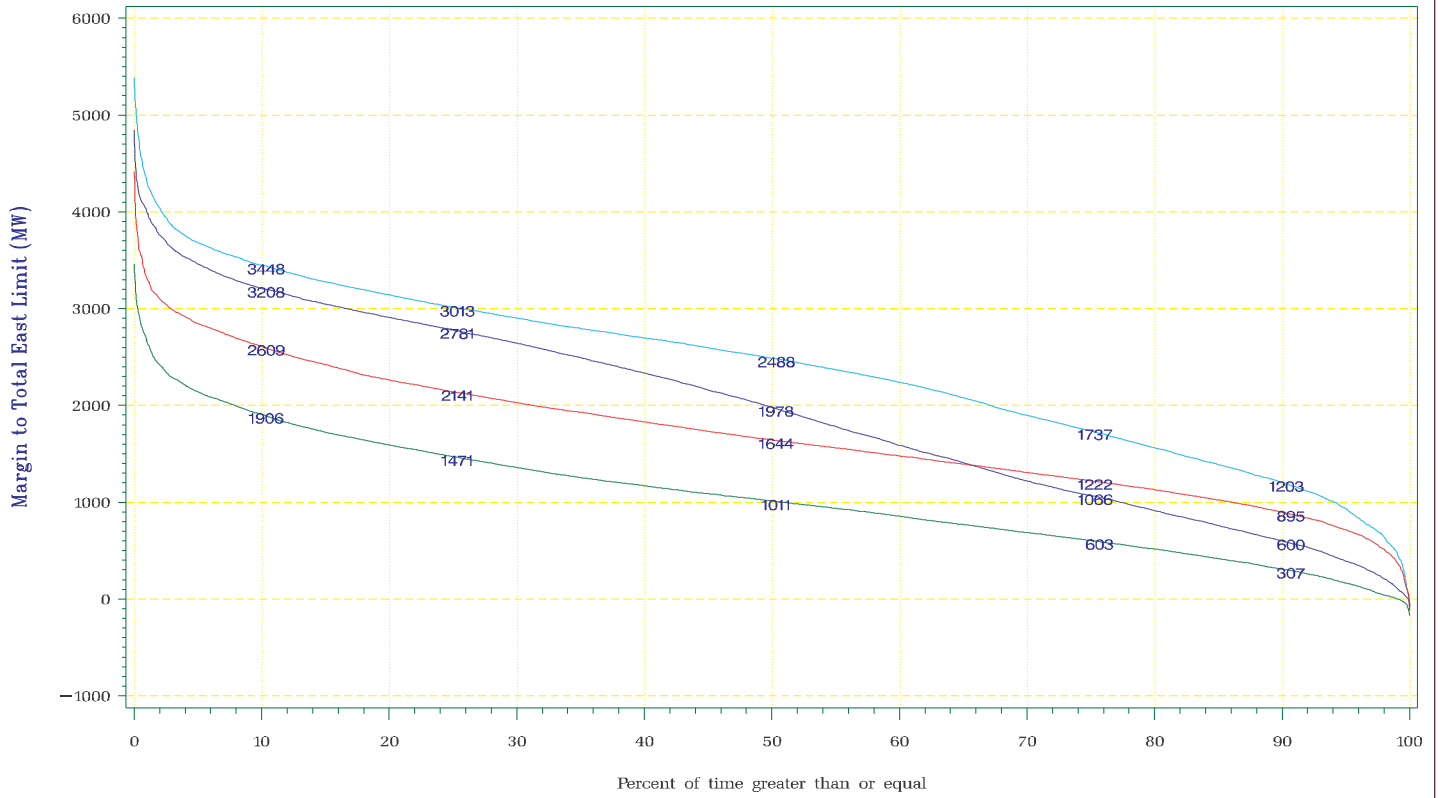
Margin to Total East Limit



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NYISO Flow Duration Curve For January 1997 – December 2000

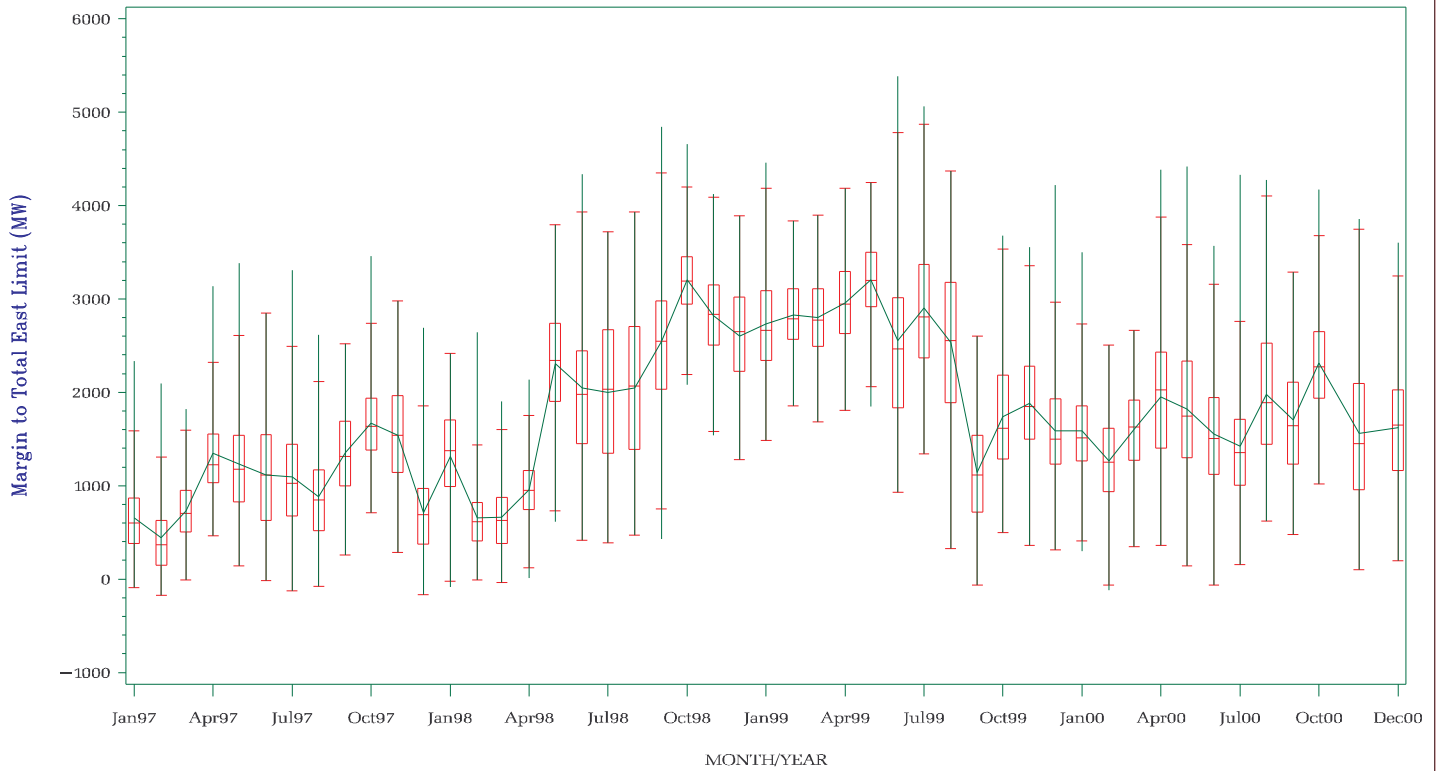
Margin to Total East Limit



1997 1998 1999 2000

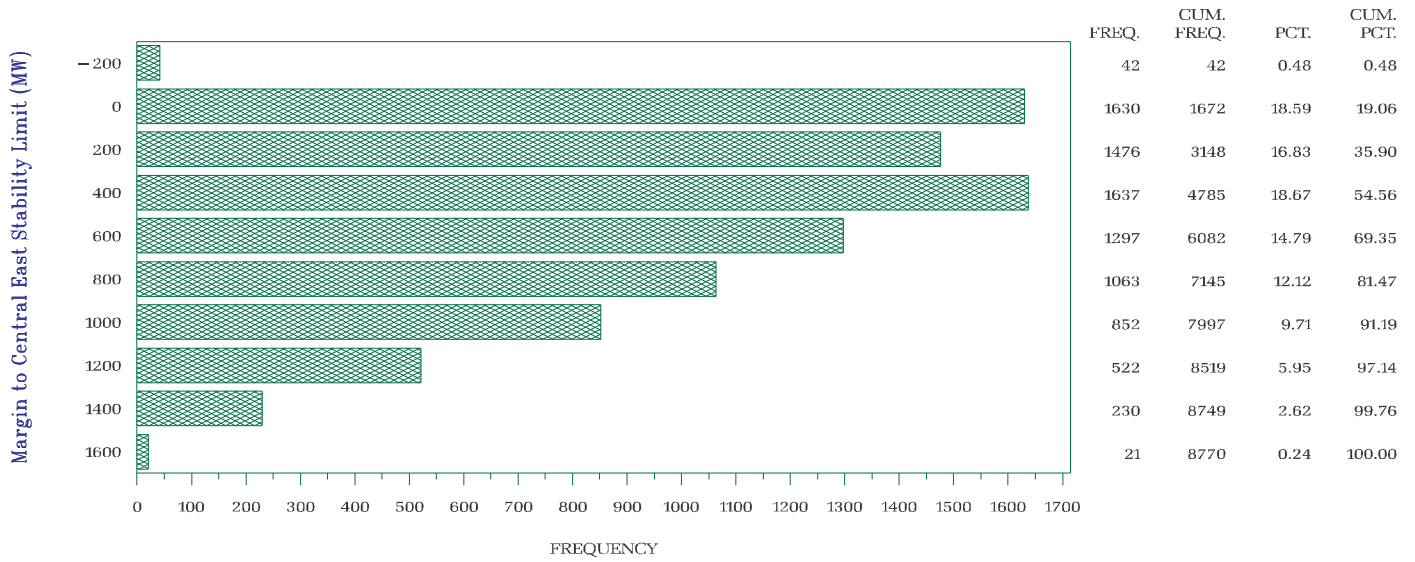
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

Margin to Total East Limit



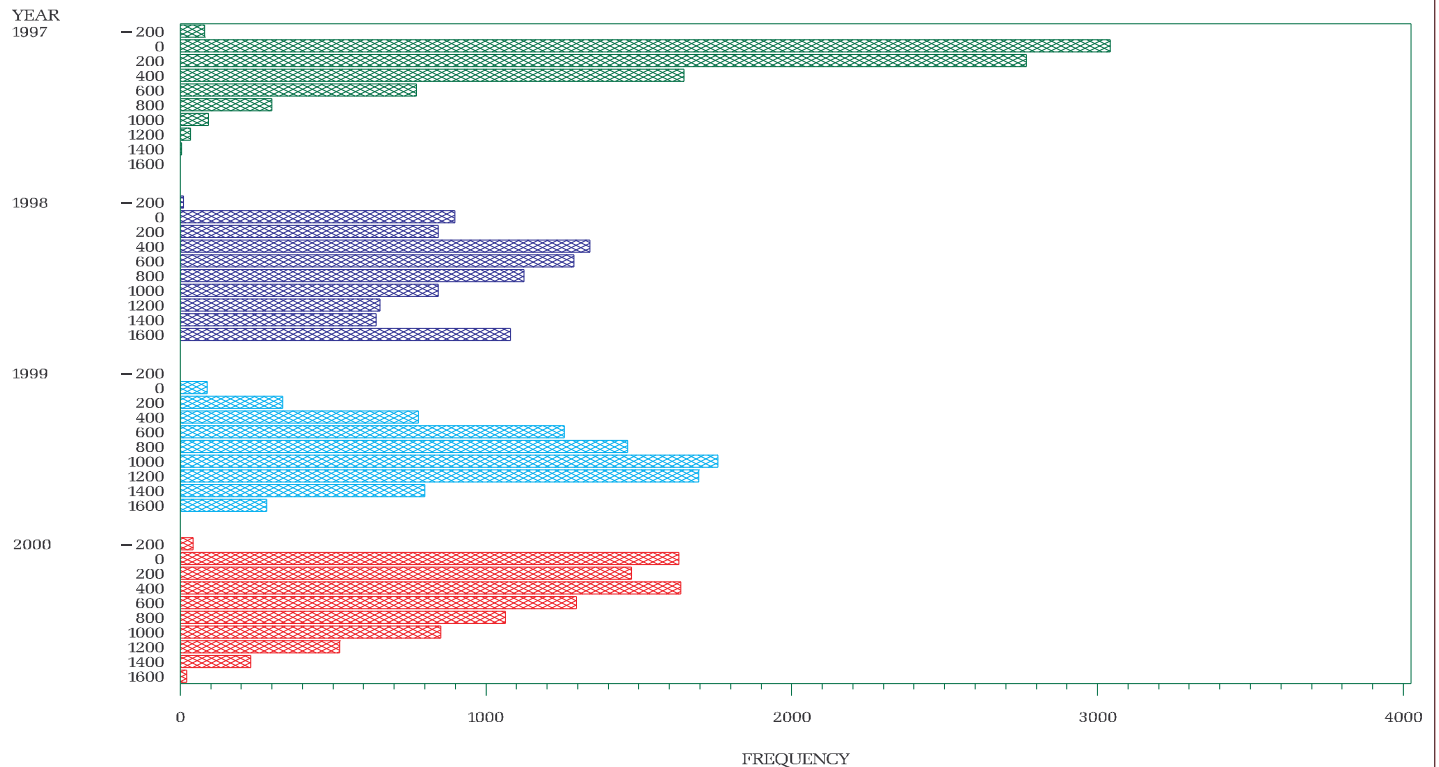
NYISO Transmission Use Statistics For January-December 2000

Margin to Central East Stability Limit



NYISO Transmission Use Statistics For January 1997-December 2000

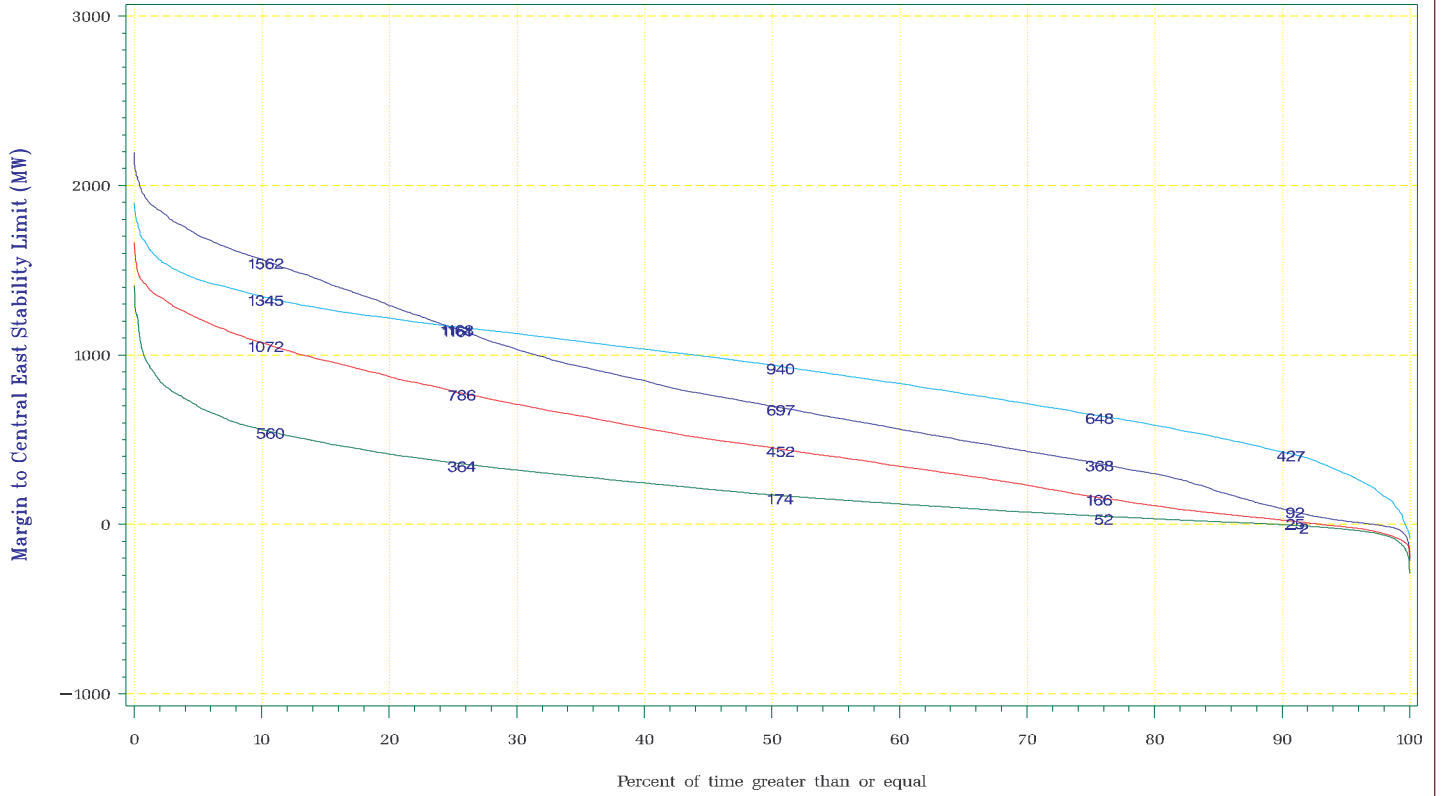
Margin to Central East Stability Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

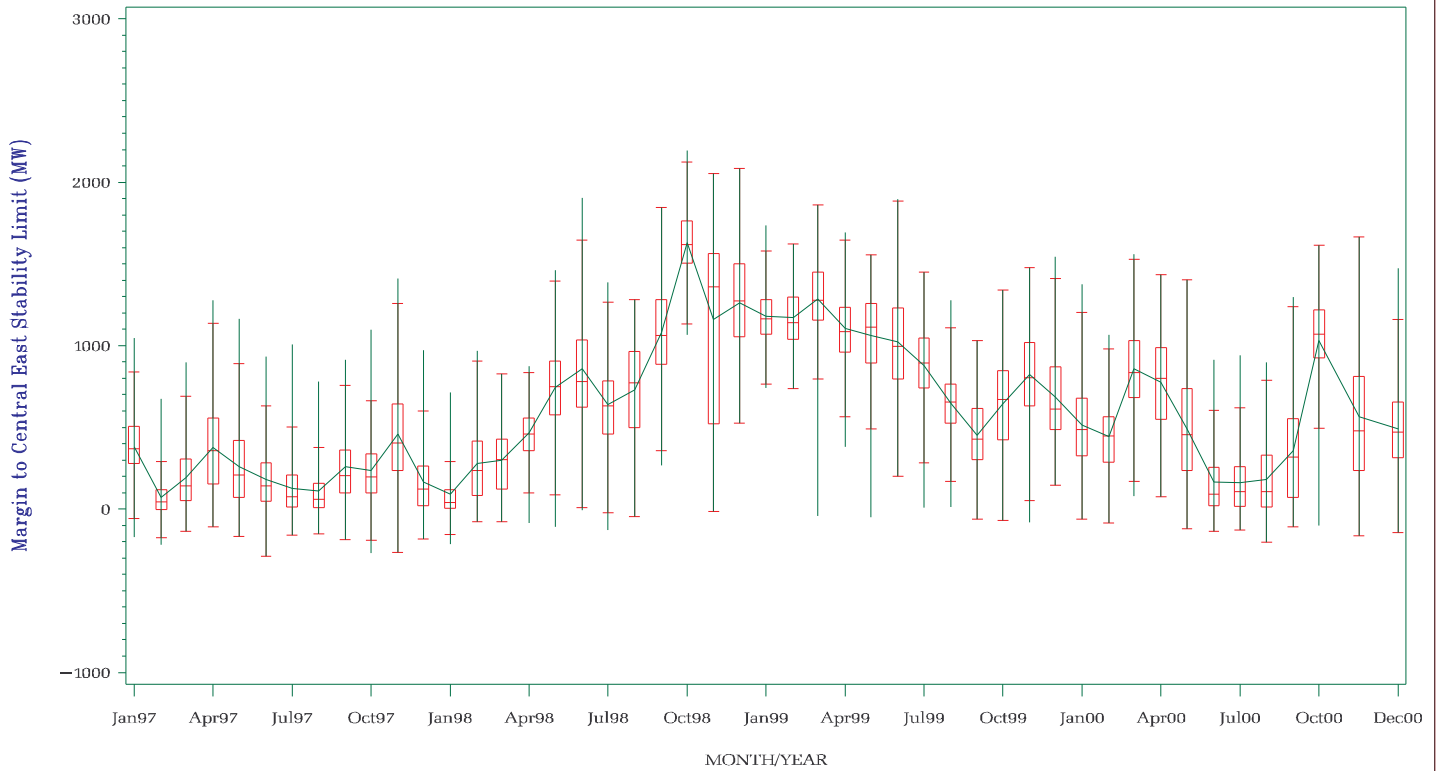
Margin to Central East Stability Limit



1997 1998 1999 2000

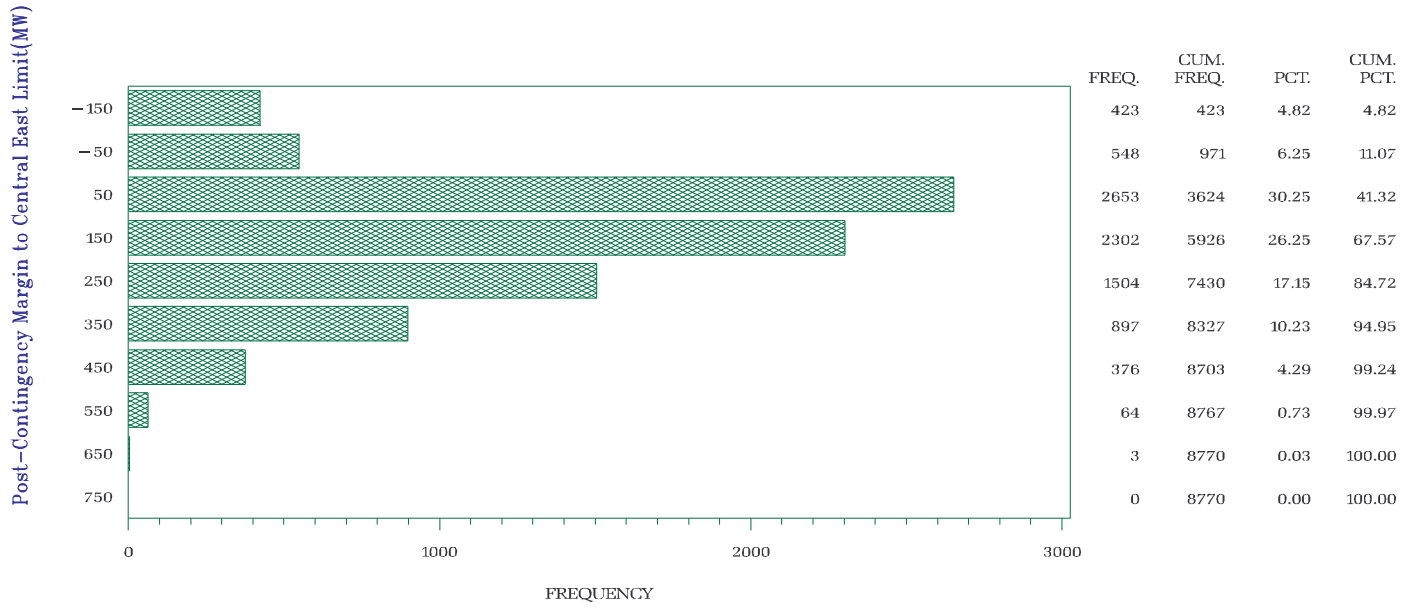
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

Margin to Central East Stability Limit



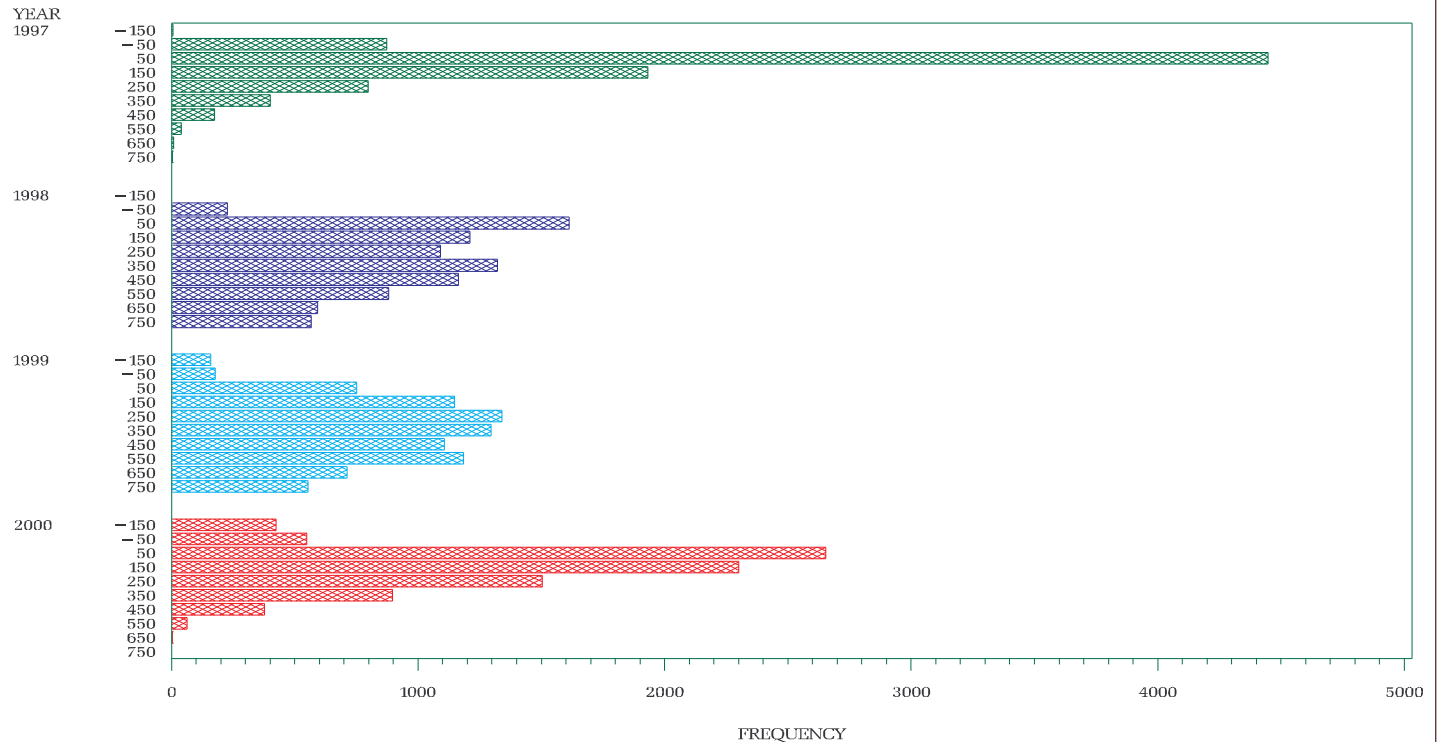
NYISO Transmission Use Statistics For January–December 2000

Post–Contingency Margin to Central East Limit
Minimum of 3 Most Limiting Voltage Collapse Limits



NYISO Transmission Use Statistics For January 1997–December 2000

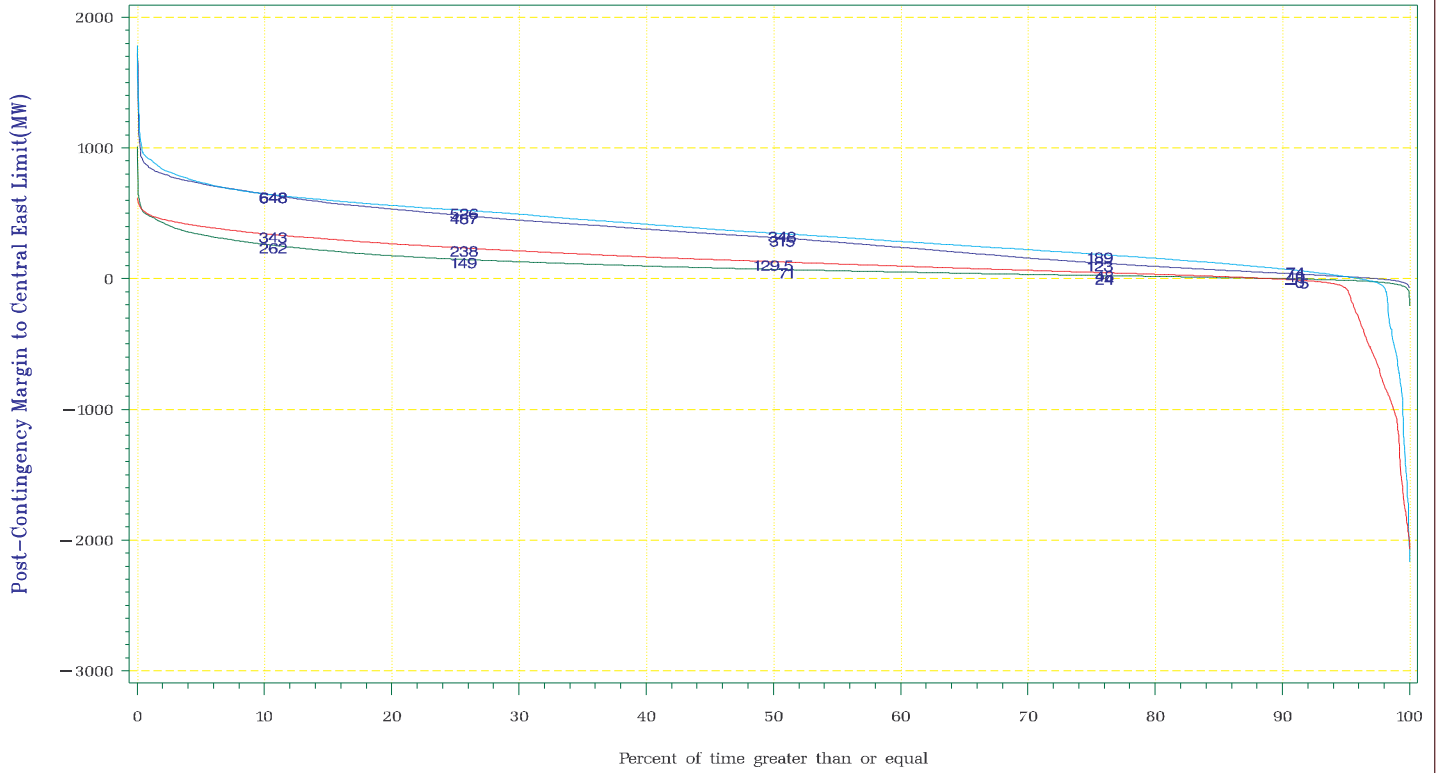
Post–Contingency Margin to Central East Limit
Minimum of 3 Most Limiting Voltage Collapse Limits



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

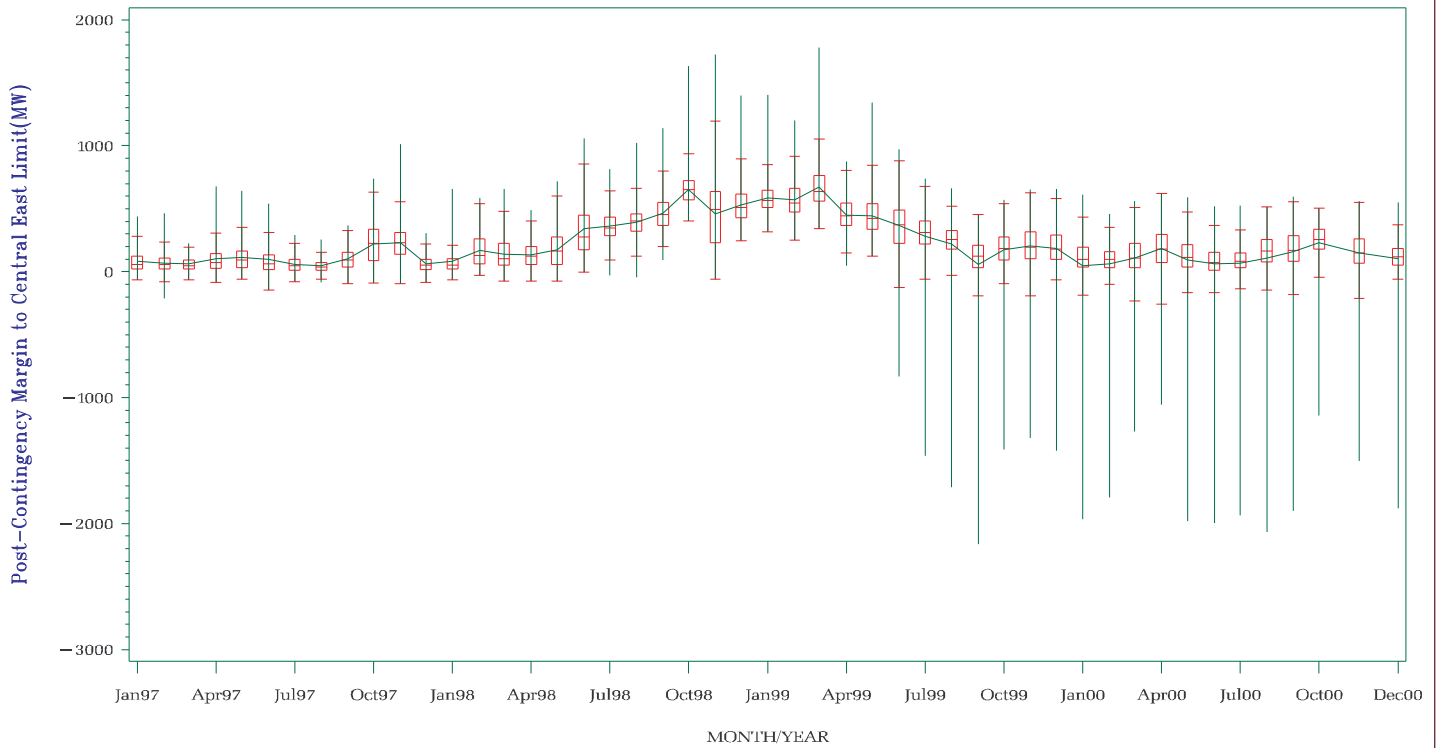
Post-Contingency Margin to Central East Limit
Minimum of 3 Most Limiting Voltage Collapse Limits



1997 1998 1999 2000

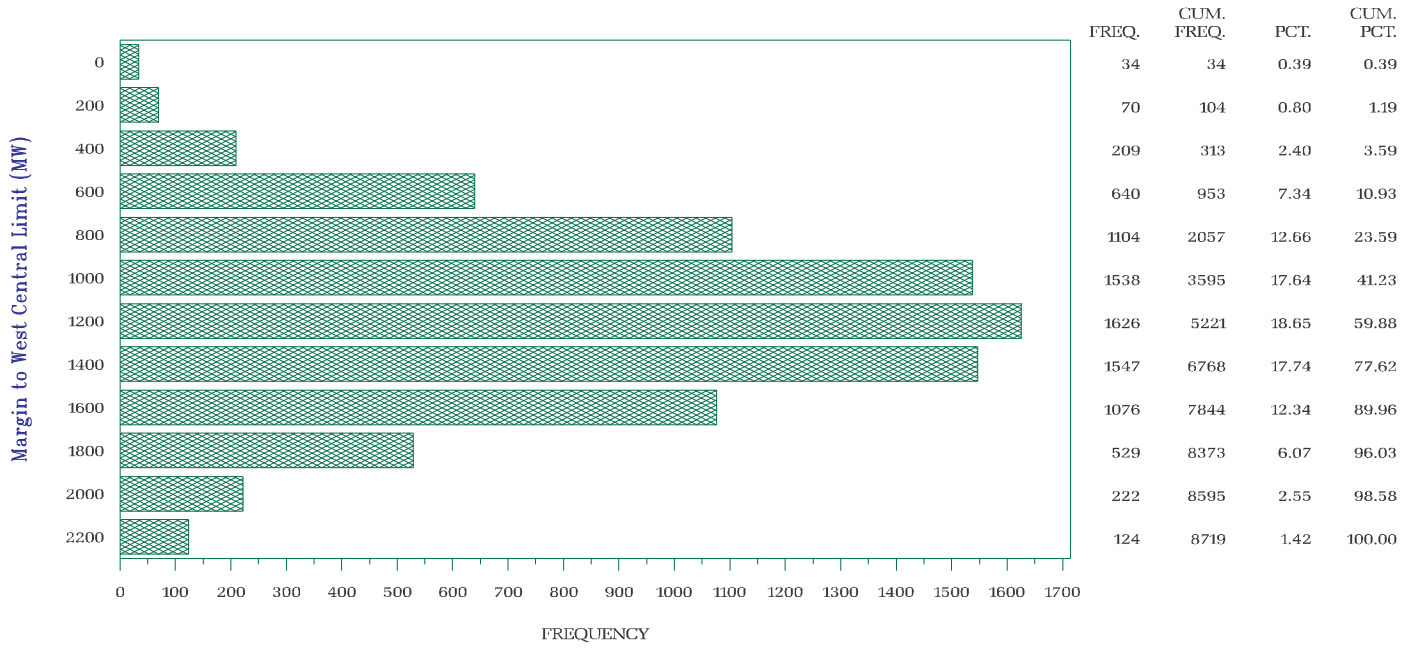
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

Post-Contingency Margin to Central East Limit
Minimum of 3 Most Limiting Voltage Collapse Limits



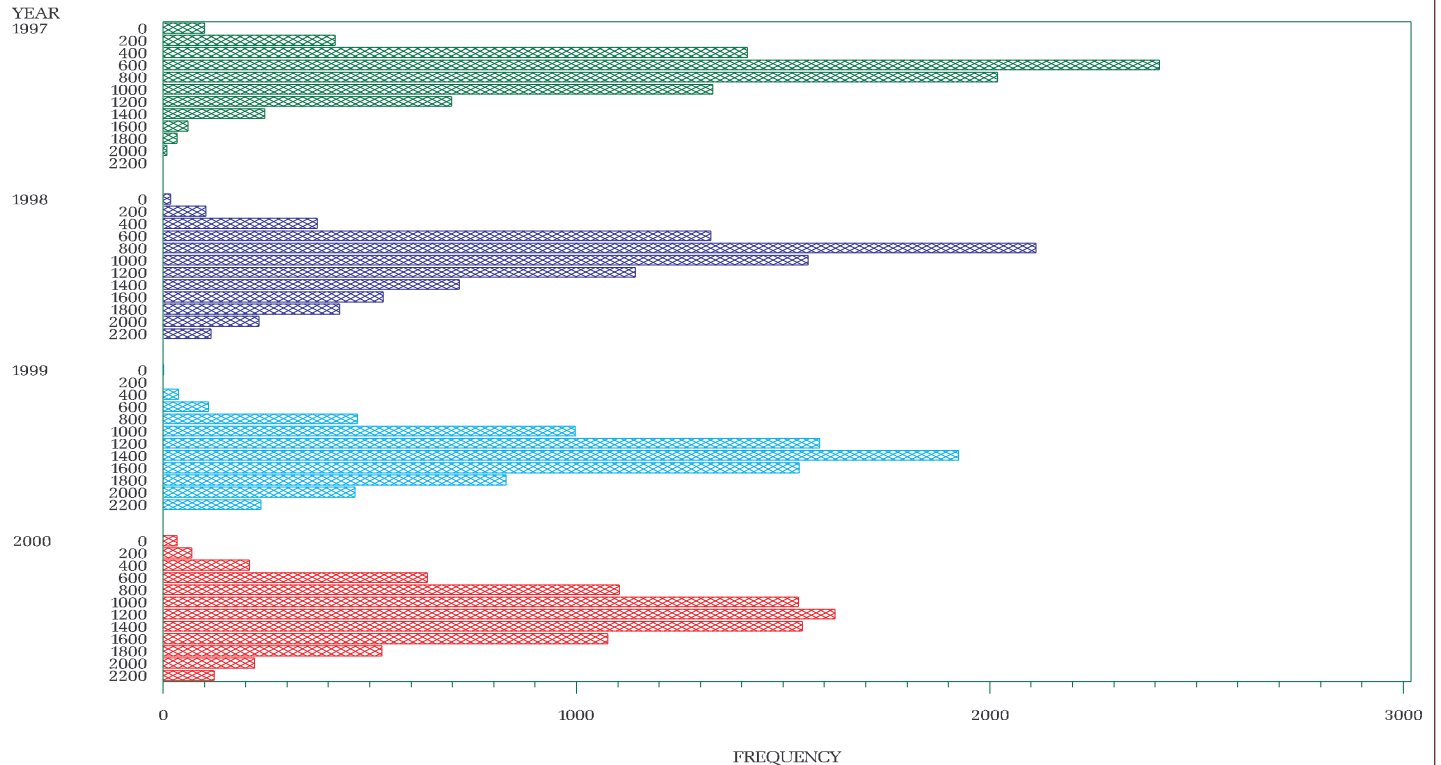
NYISO Transmission Use Statistics For January-December 2000

Margin to West Central Limit



NYISO Transmission Use Statistics For January 1997-December 2000

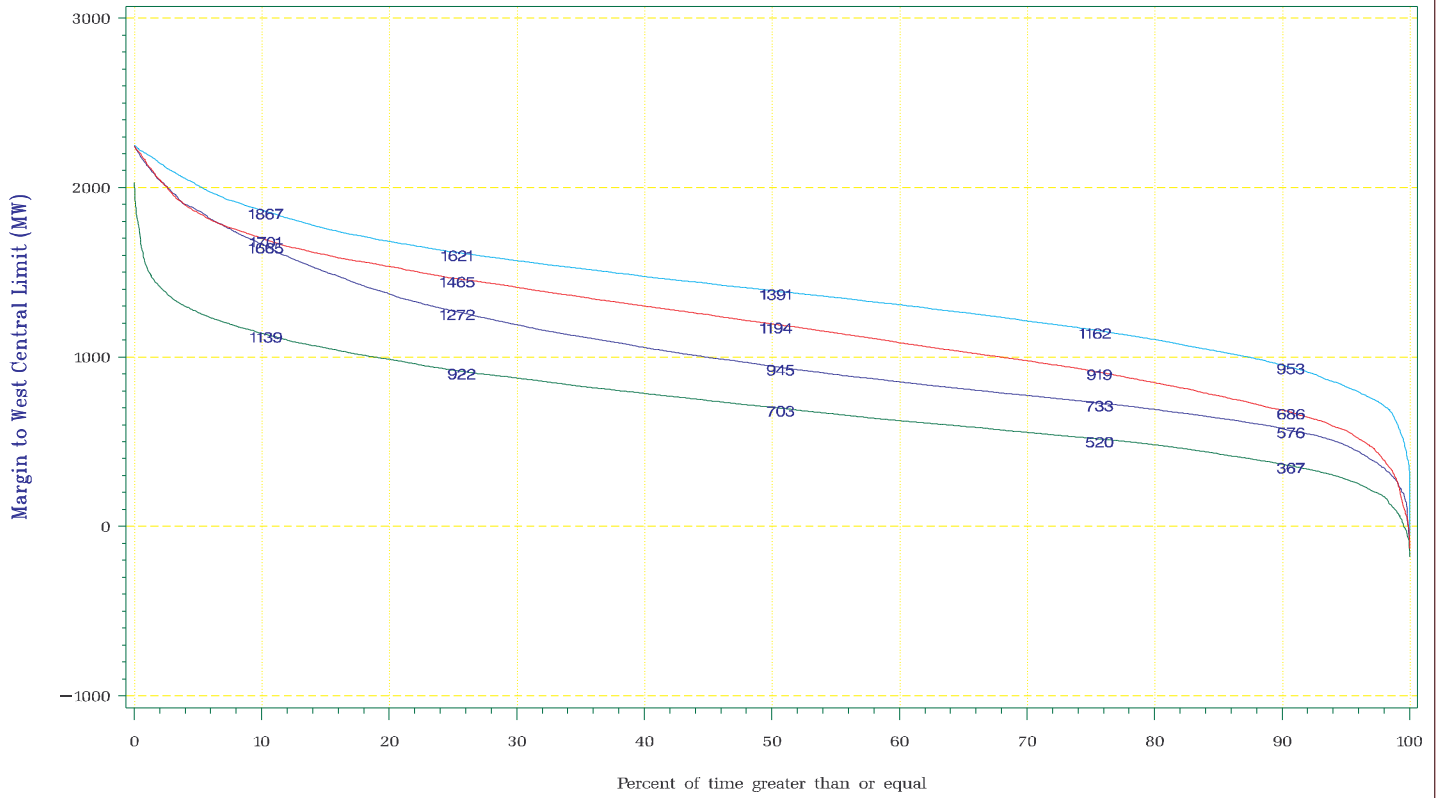
Margin to West Central Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

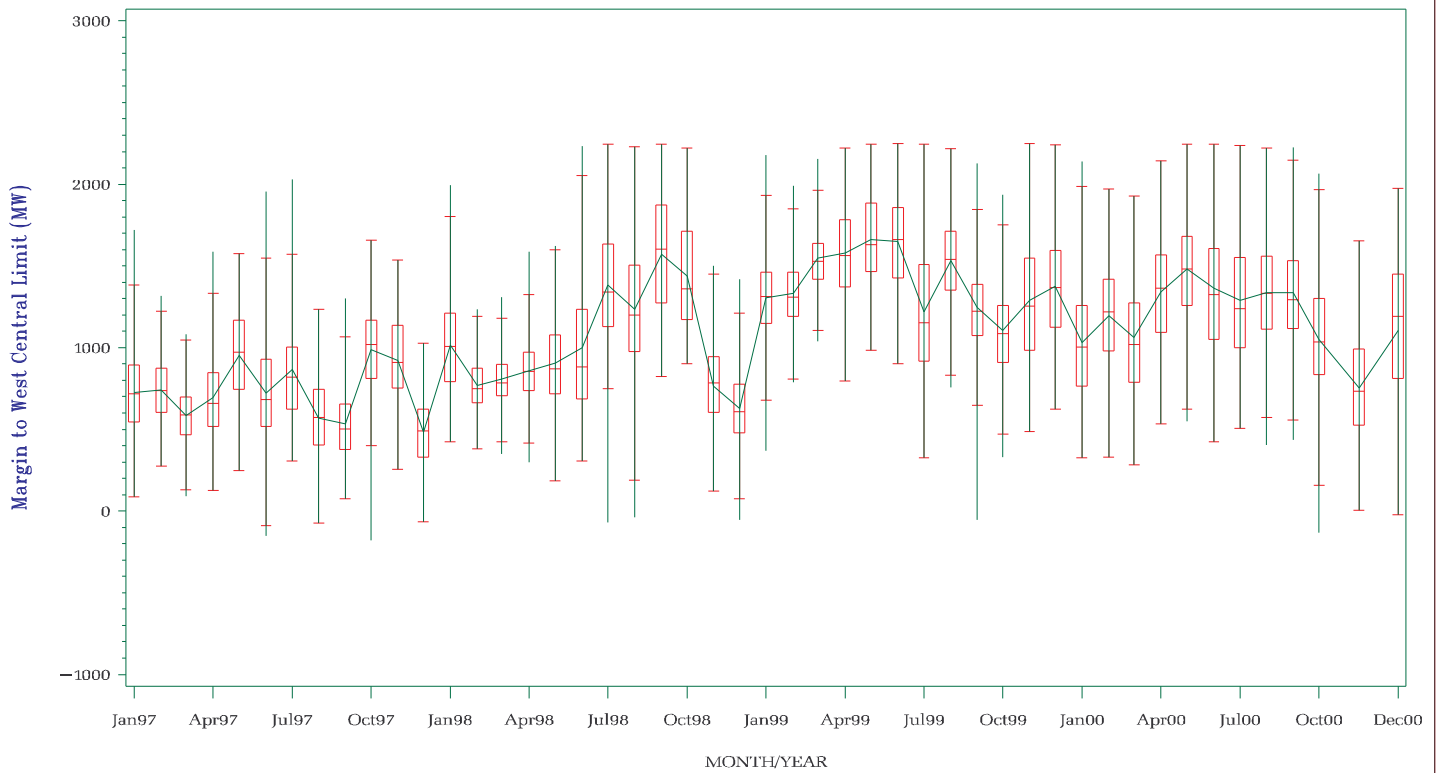
Margin to West Central Limit



1997 1998 1999 2000

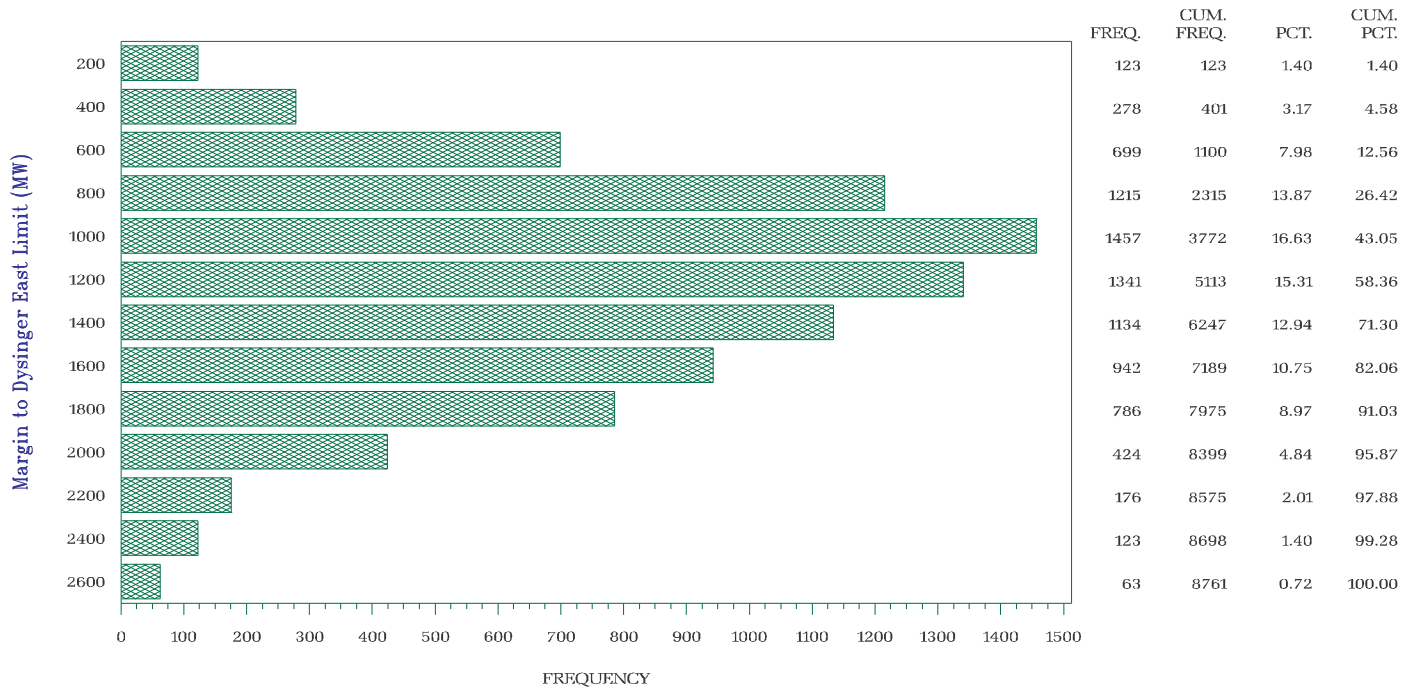
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

Margin to West Central Limit



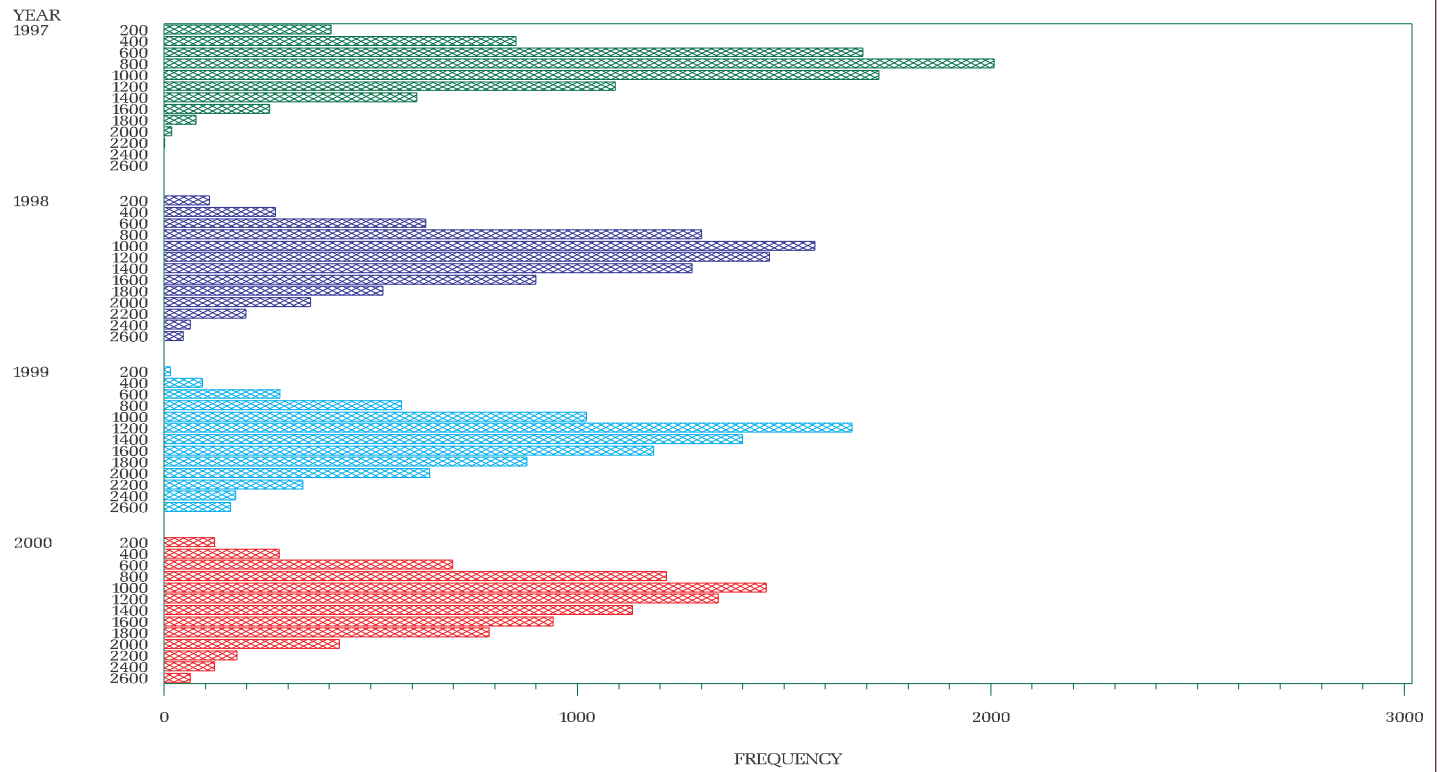
NYISO Transmission Use Statistics For January-December 2000

Margin to Dysinger East Limit



NYISO Transmission Use Statistics For January 1997-December 2000

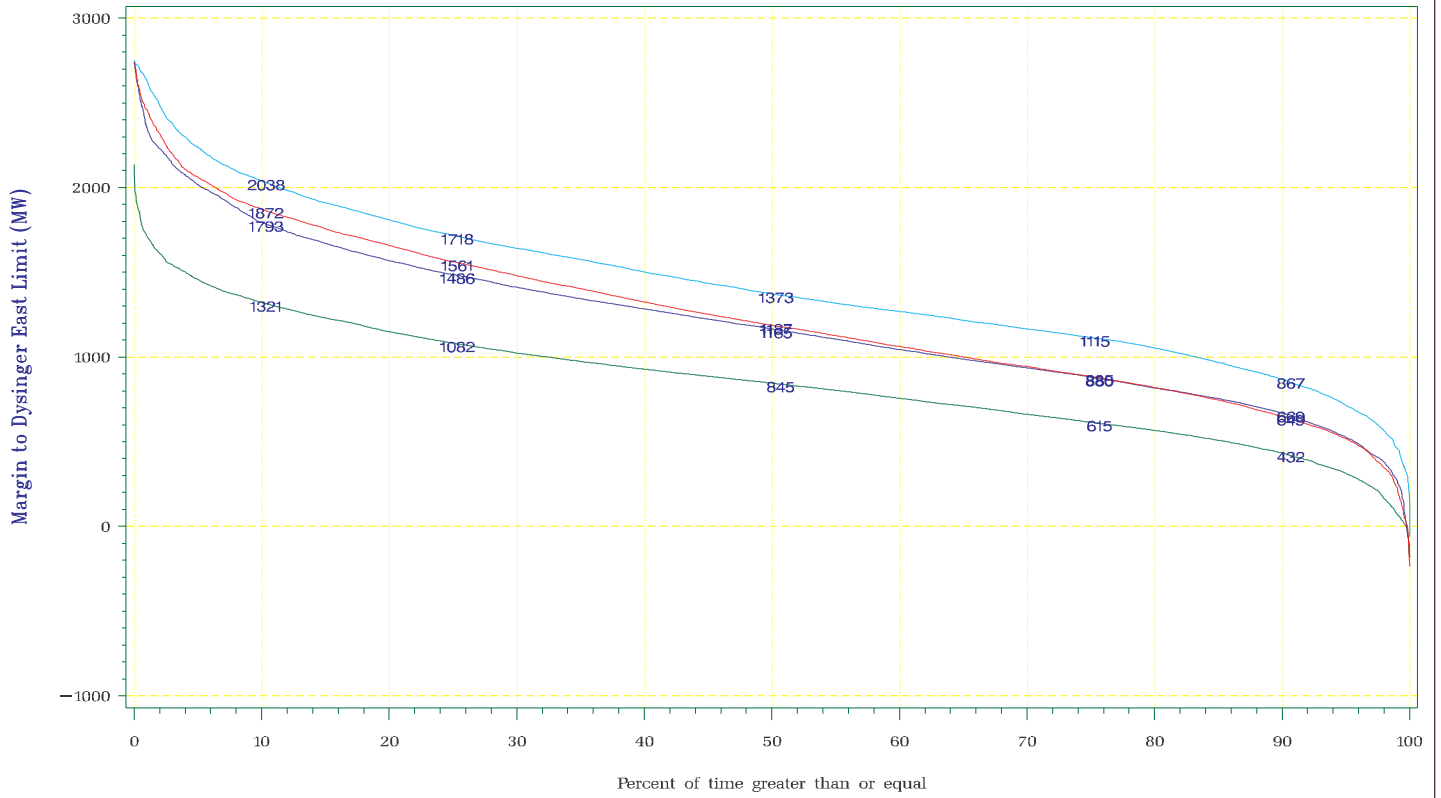
Margin to Dysinger East Limit



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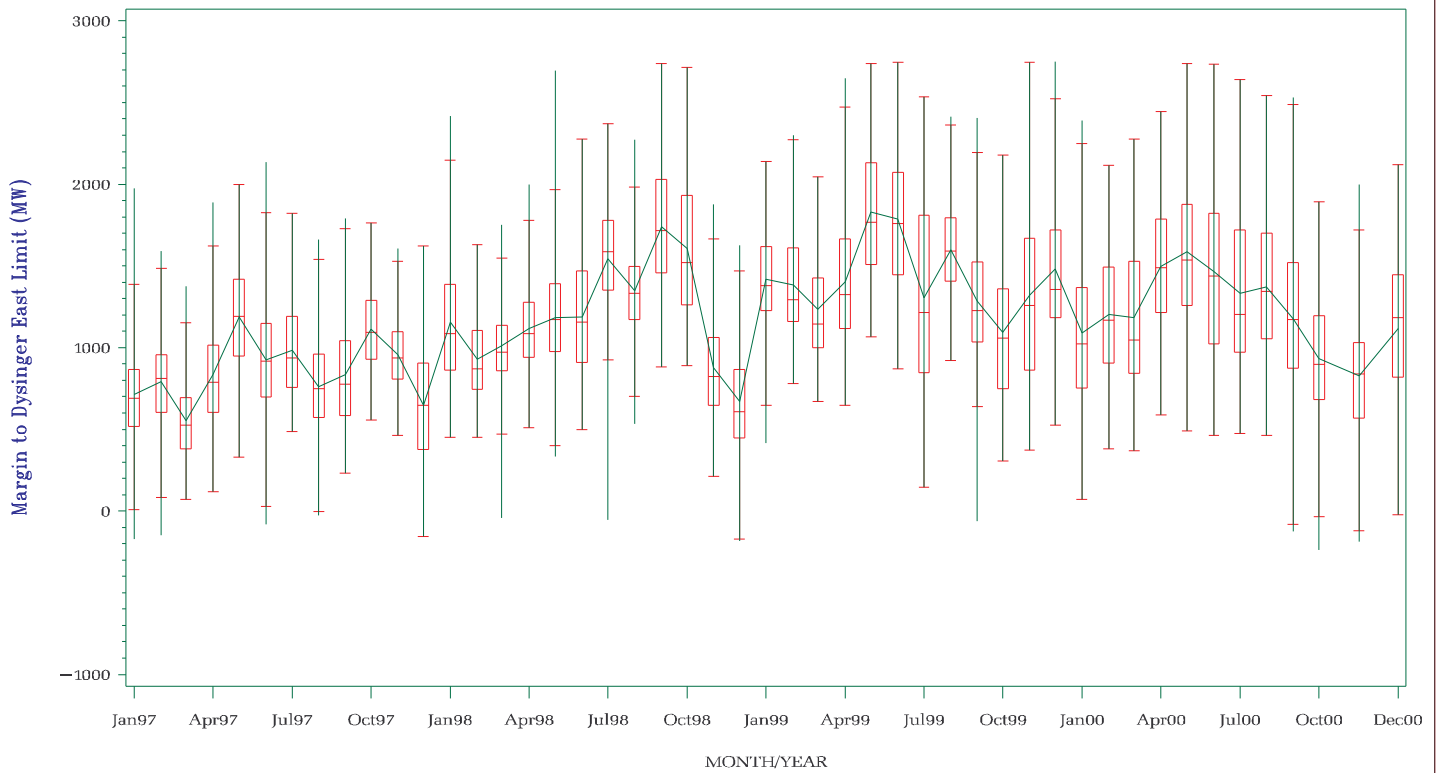
Margin to Dysinger East Limit



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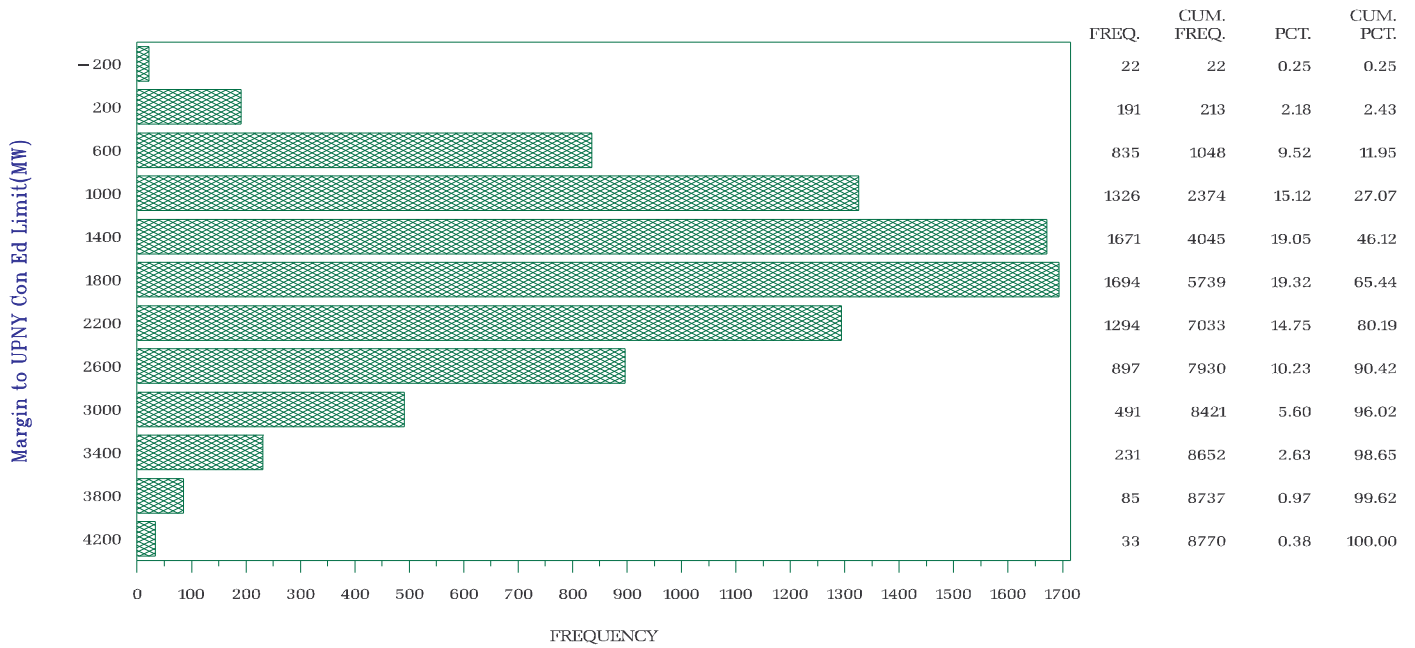
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

Margin to Dysinger East Limit



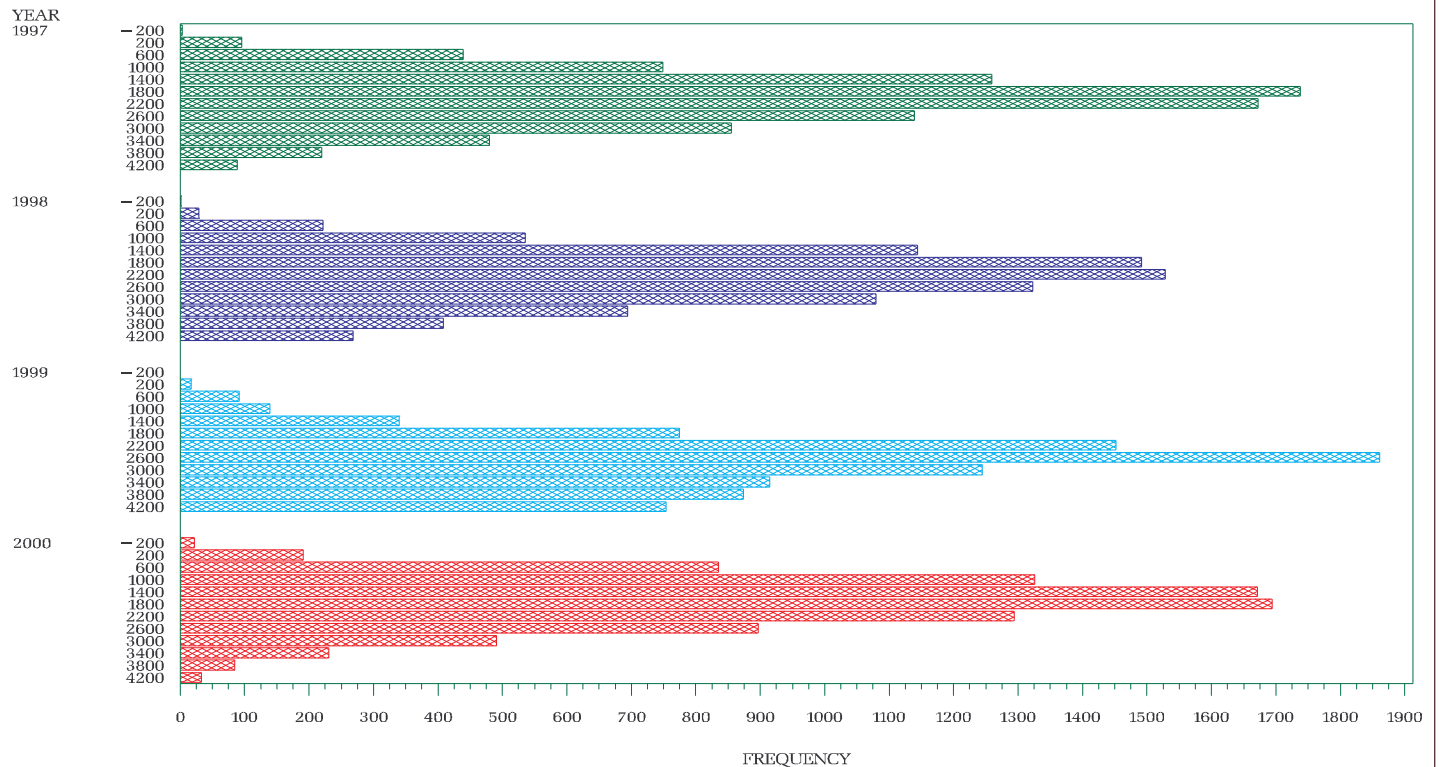
NYISO Transmission Use Statistics For January-December 2000

Margin to UPNY Con Ed Limit



NYISO Transmission Use Statistics For January 1997-December 2000

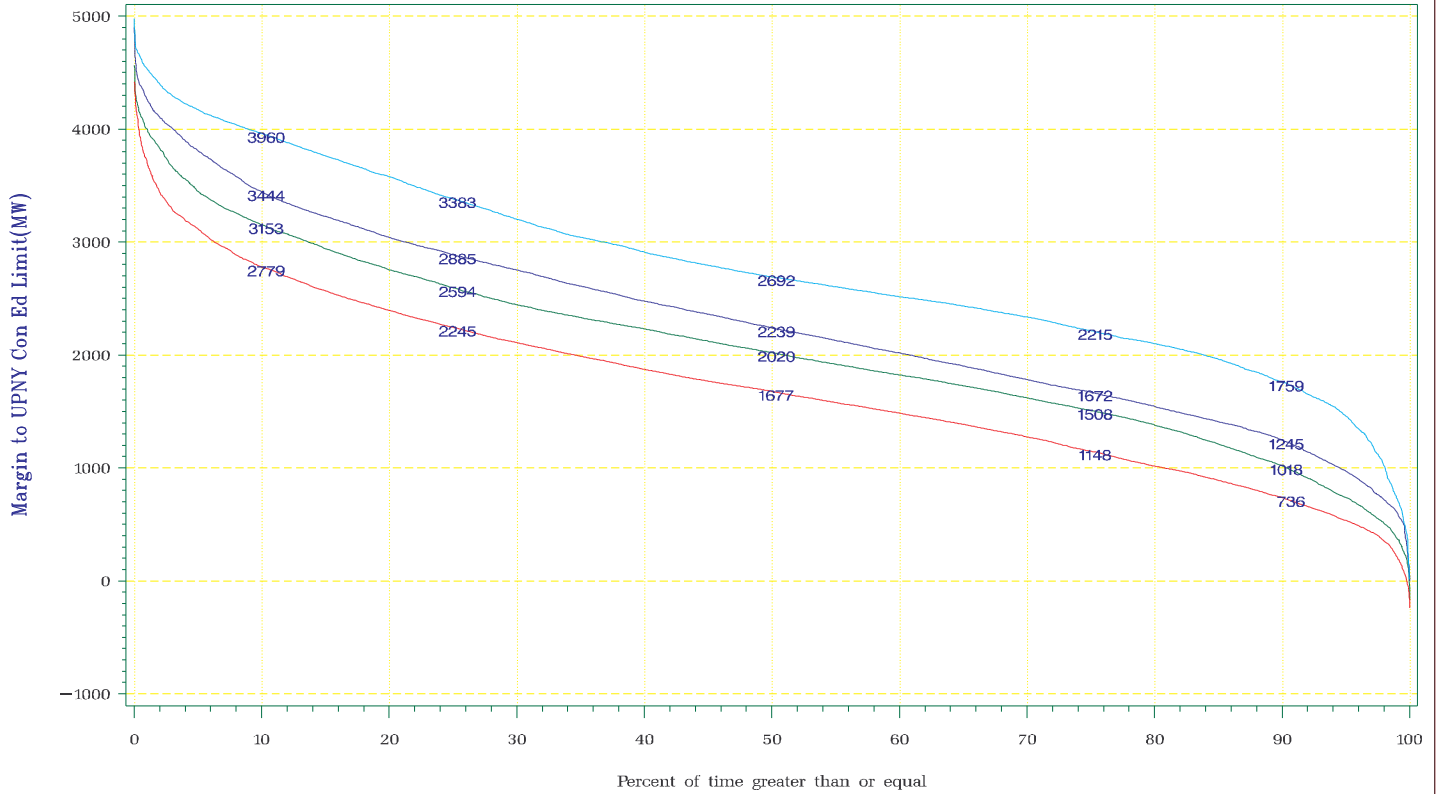
Margin to UPNY Con Ed Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

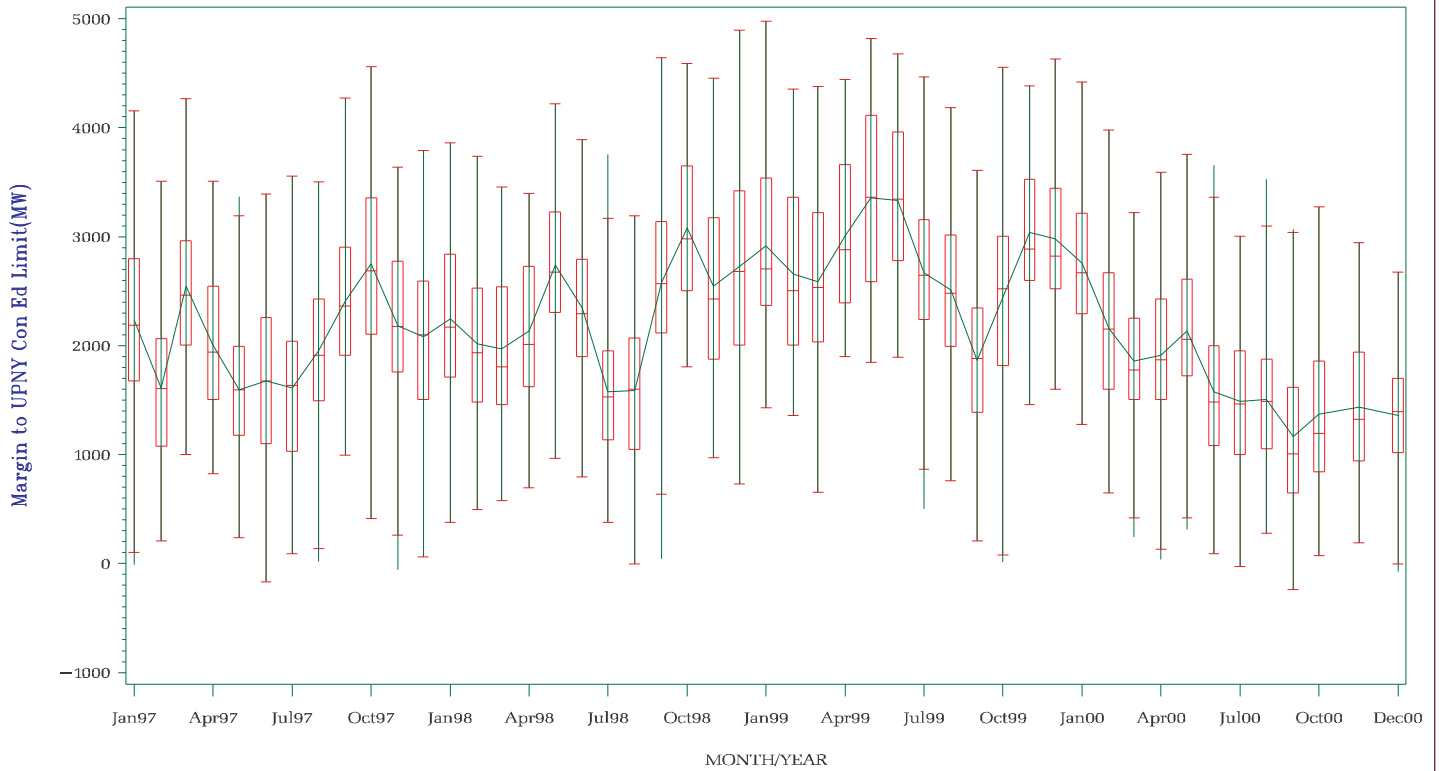
Margin to UPNY Con Ed Limit



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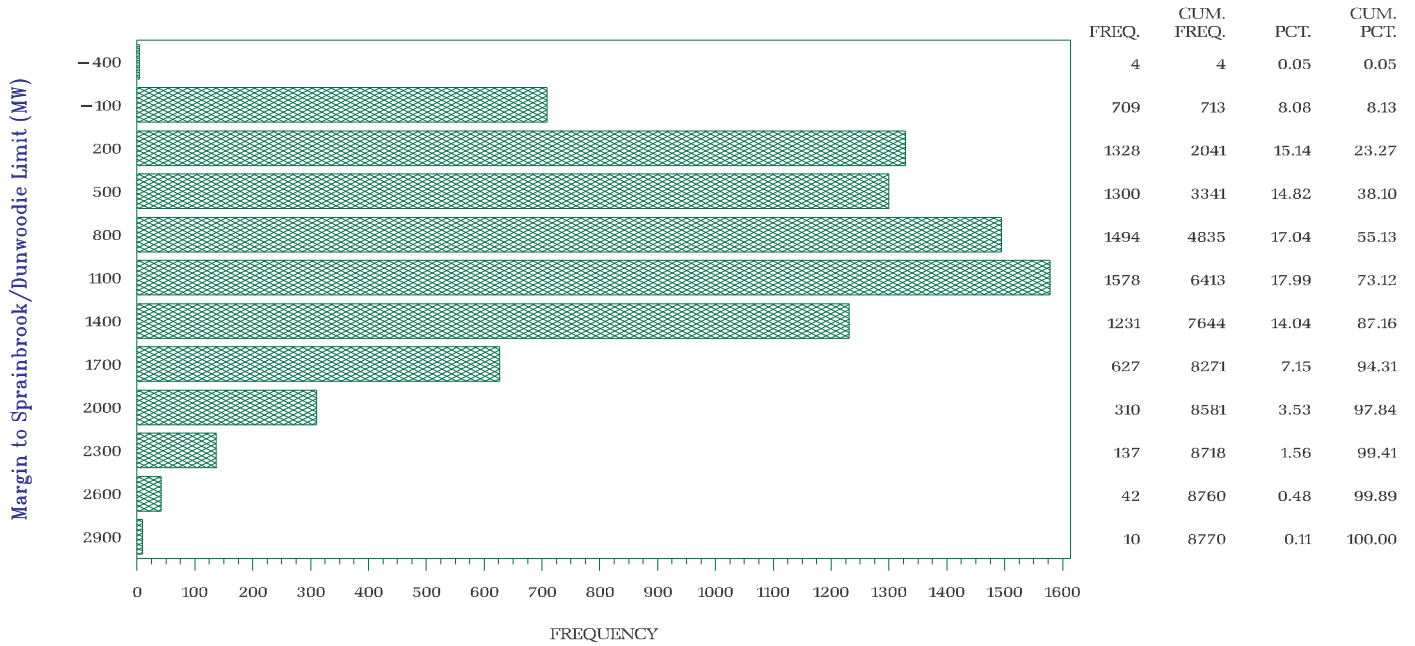
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

Margin to UPNY Con Ed Limit



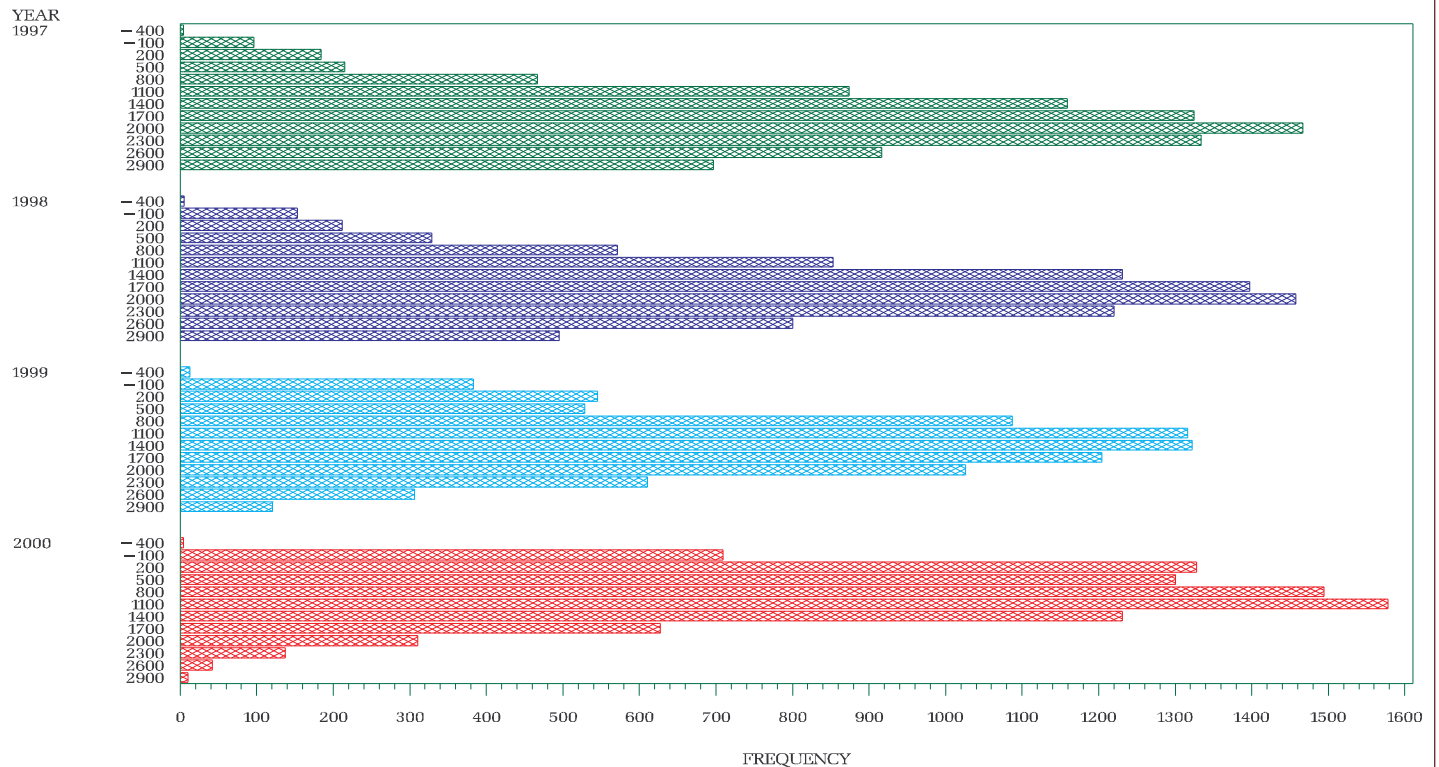
NYISO Transmission Use Statistics For January-December 2000

Margin to Sprainbrook/Dunwoodie Limit



NYISO Transmission Use Statistics For January 1997-December 2000

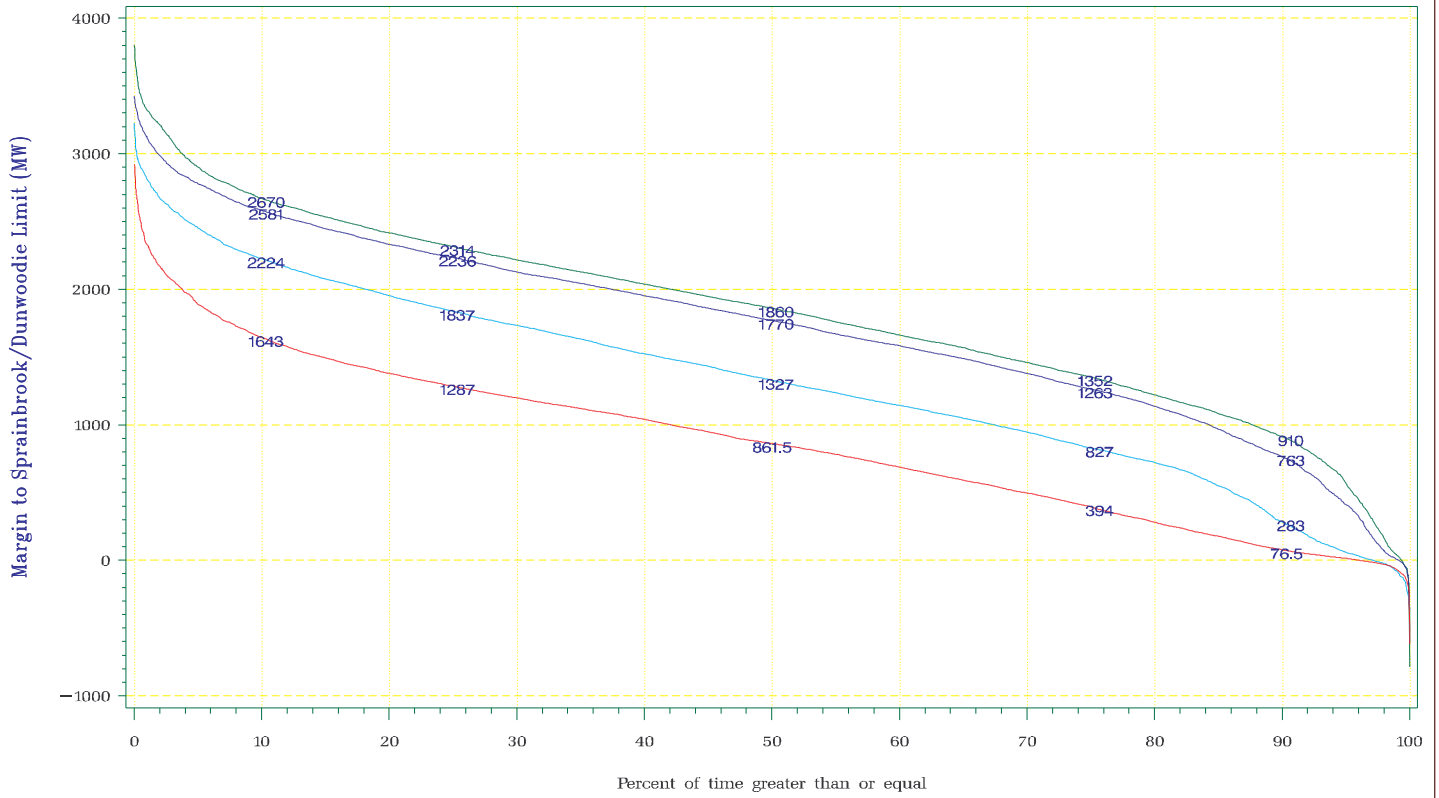
Margin to Sprainbrook/Dunwoodie Limit



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NYISO Flow Duration Curve For January 1997 – December 2000

Margin to Sprainbrook/Dunwoodie Limit



1997 1998 1999 2000

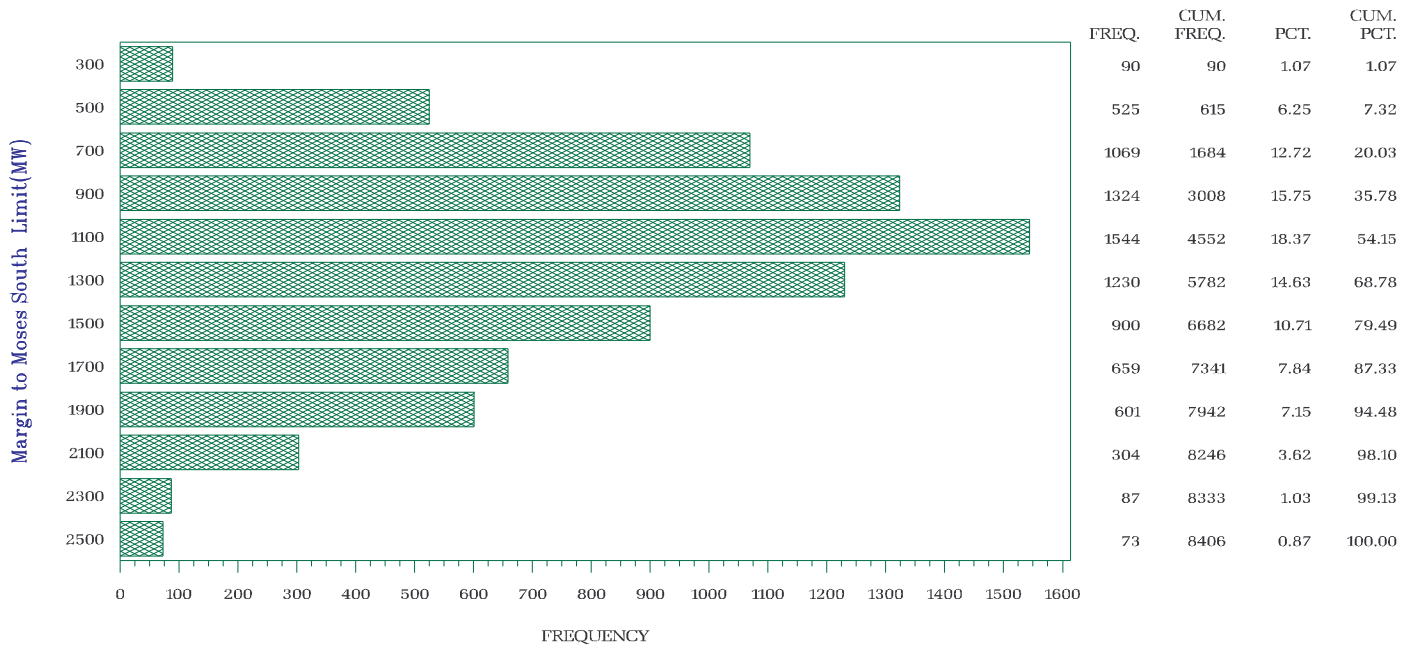
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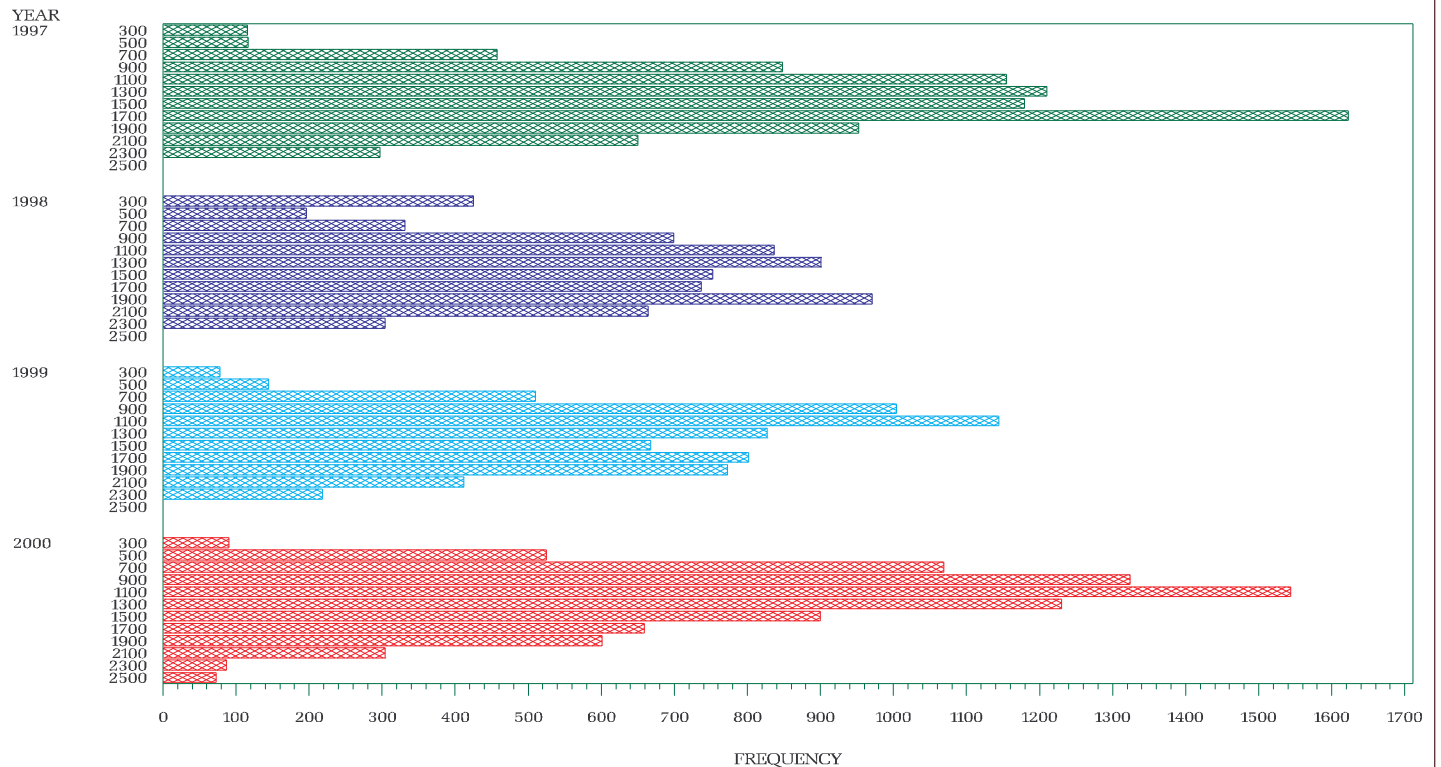
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Margin to Moses South Limit



NYISO Transmission Use Statistics For January 1997–December 2000

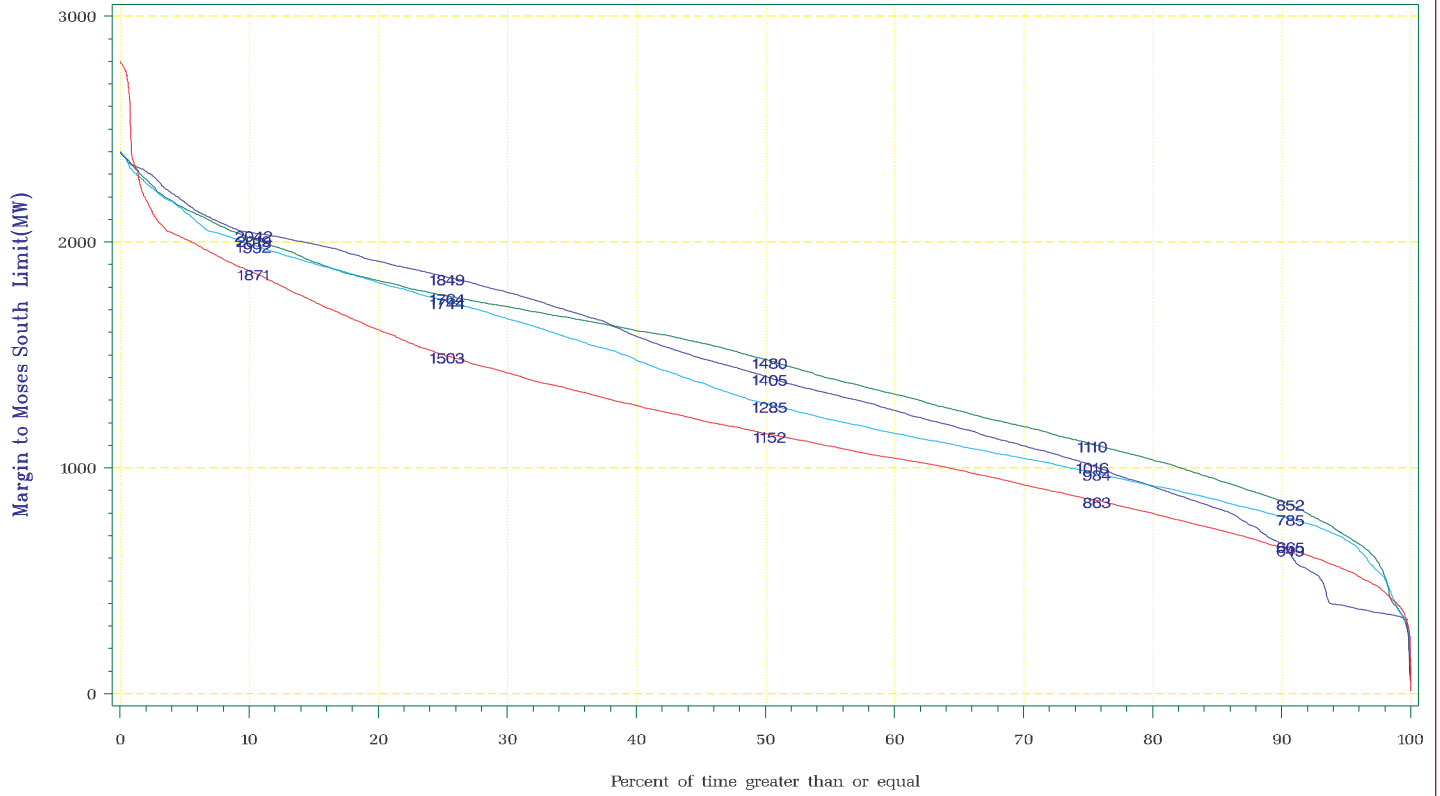
Margin to Moses South Limit



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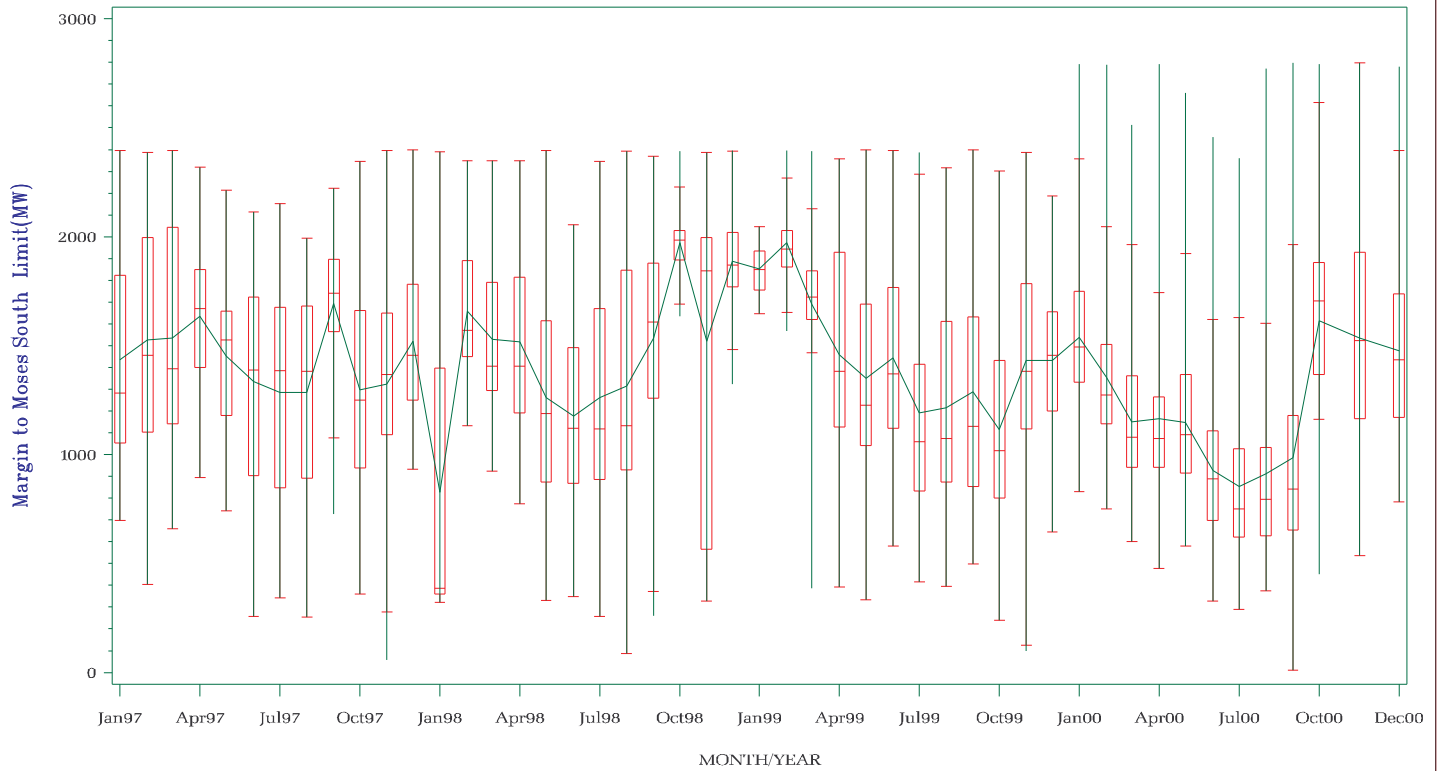
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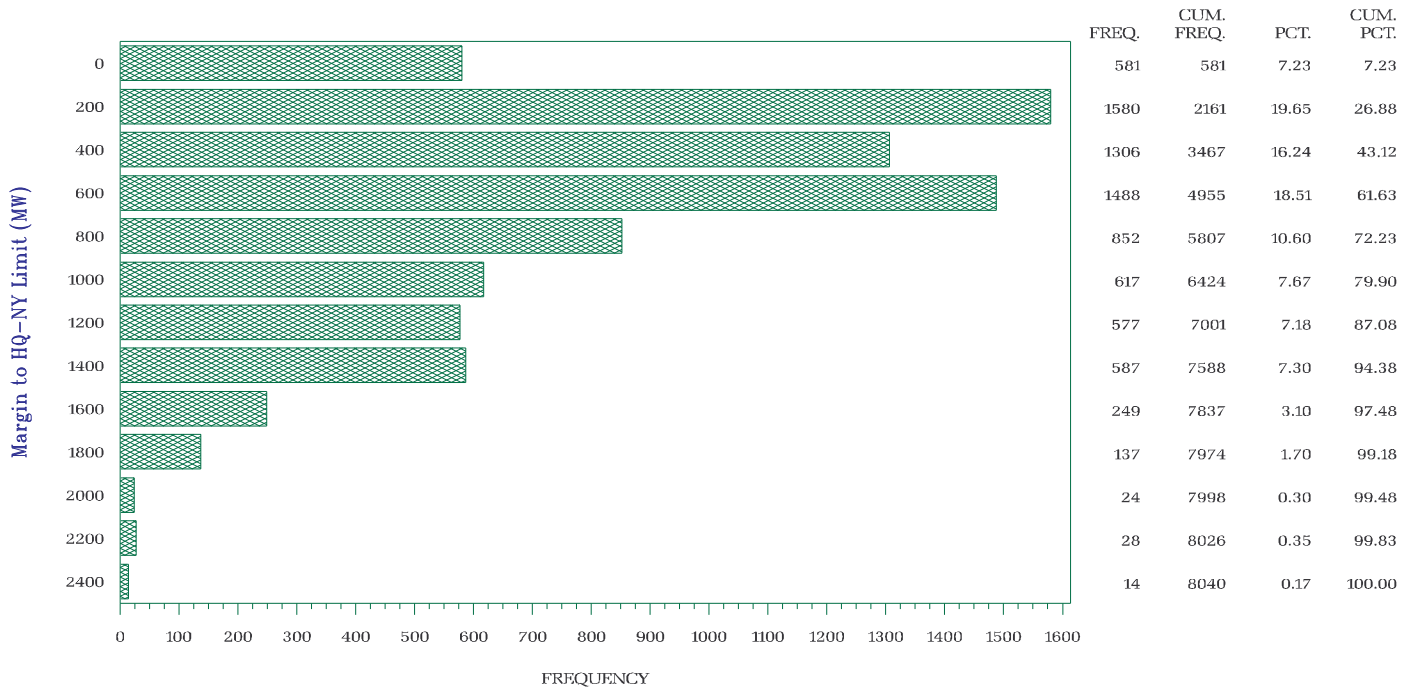
NYISO Average Monthly Interface Flow
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Margin to Moses South Limit



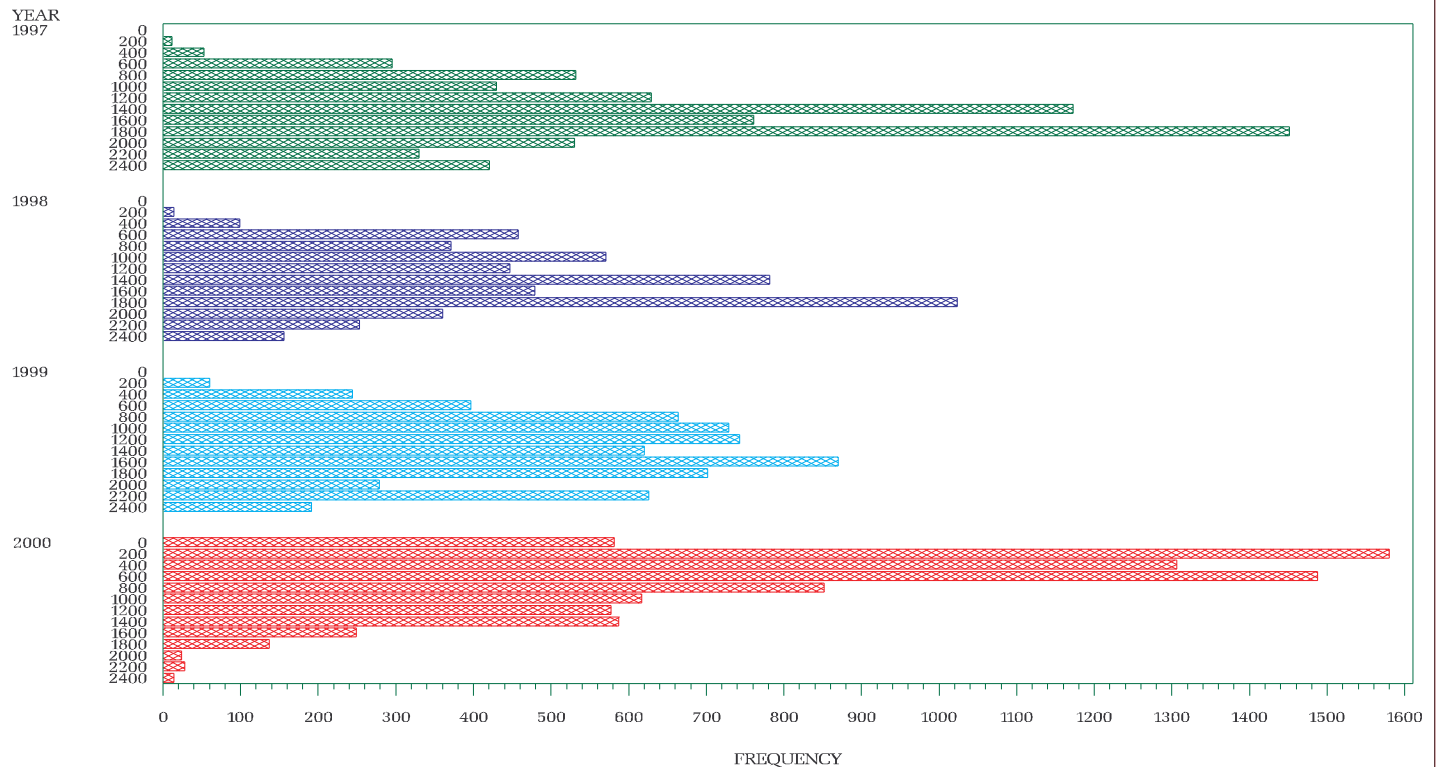
NYISO Transmission Use Statistics For January–December 2000

Margin to HQ–NY Limit



NYISO Transmission Use Statistics For January 1997–December 2000

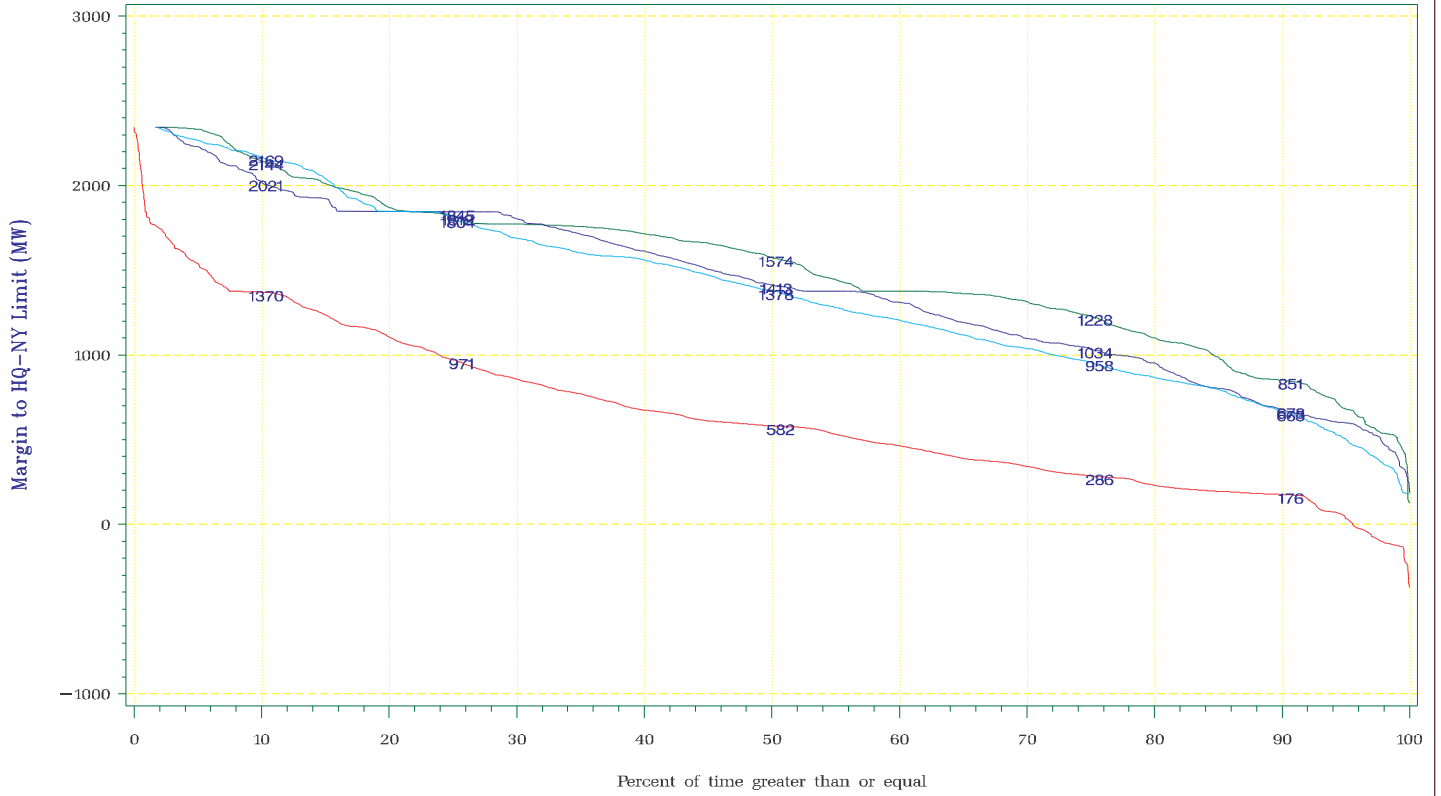
Margin to HQ–NY Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

Margin to HQ–NY Limit



1997 1998 1999 2000

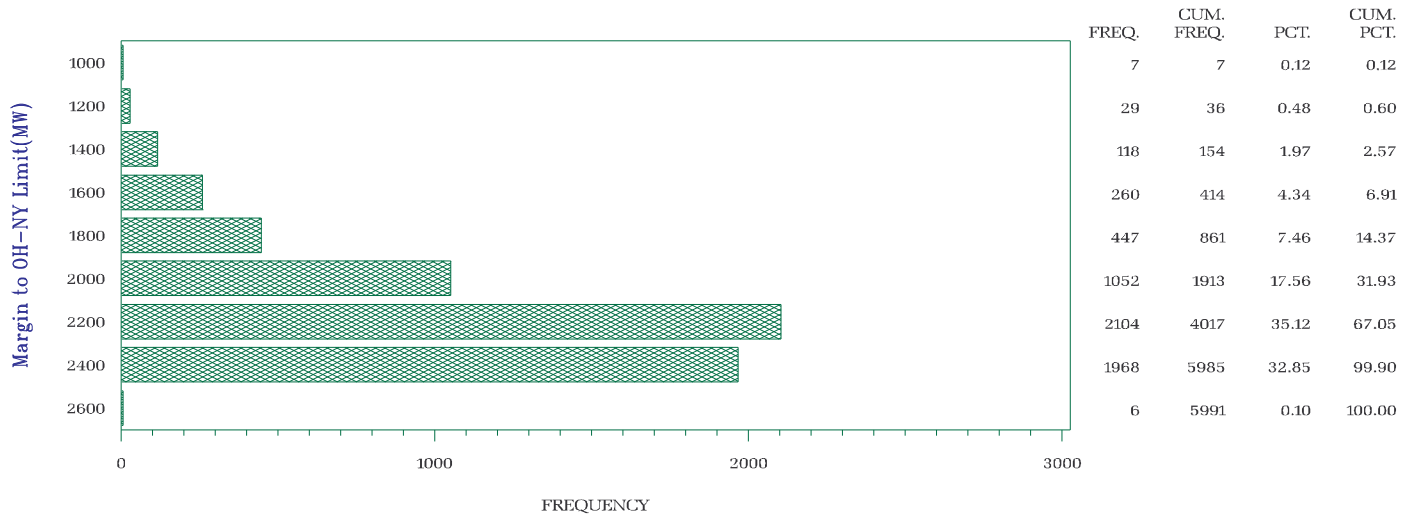
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Margin to HQ–NY Limit



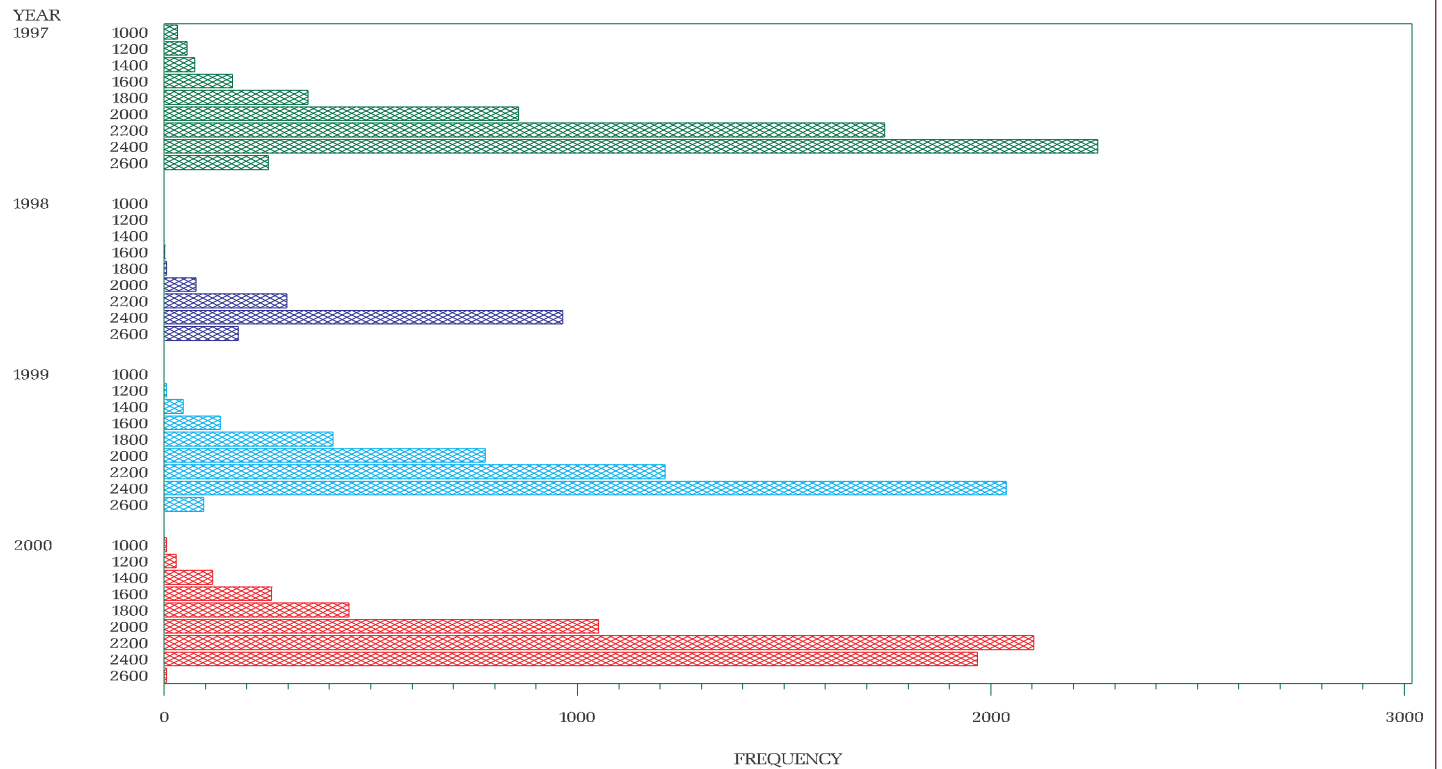
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Margin to OH–NY Limit



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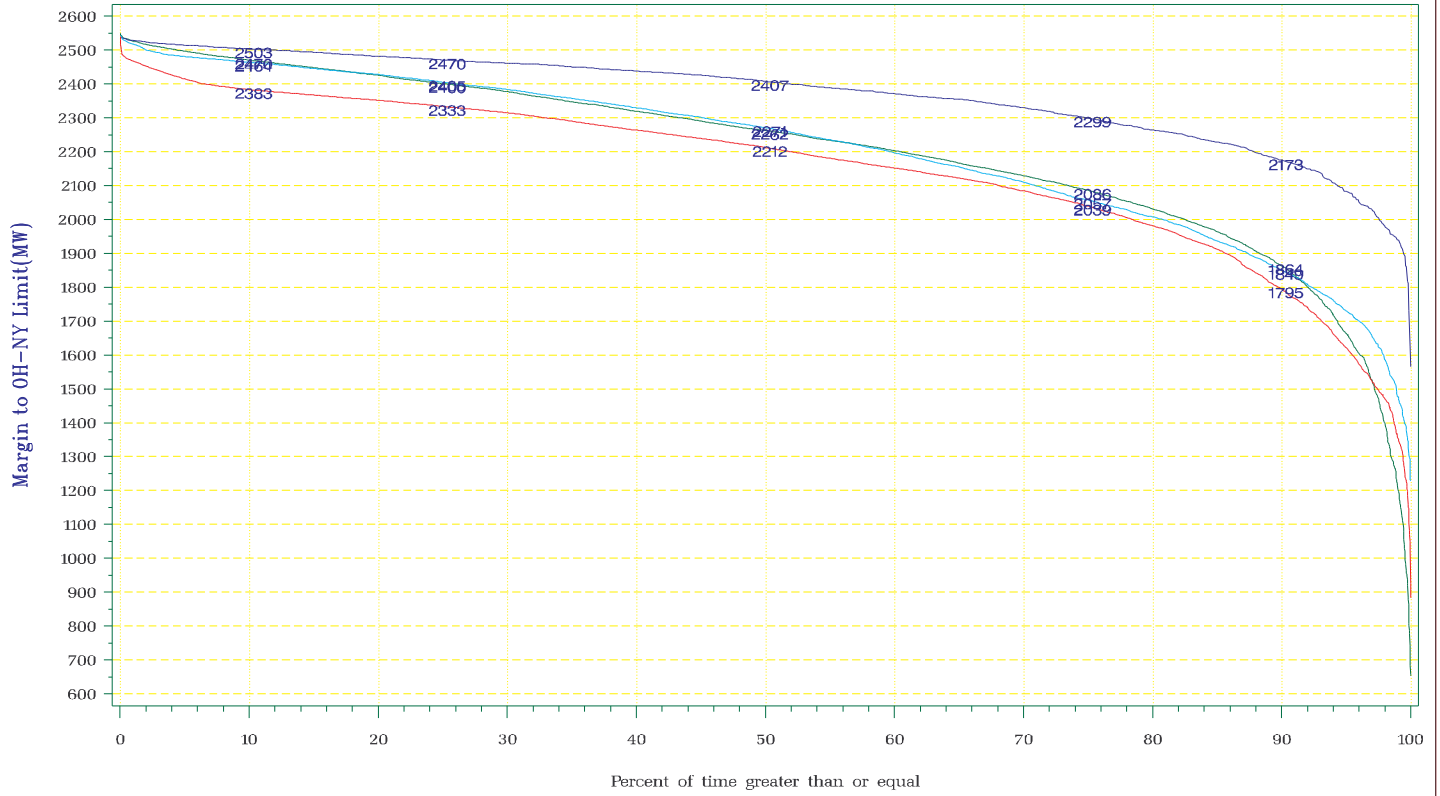
Margin to OH–NY Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

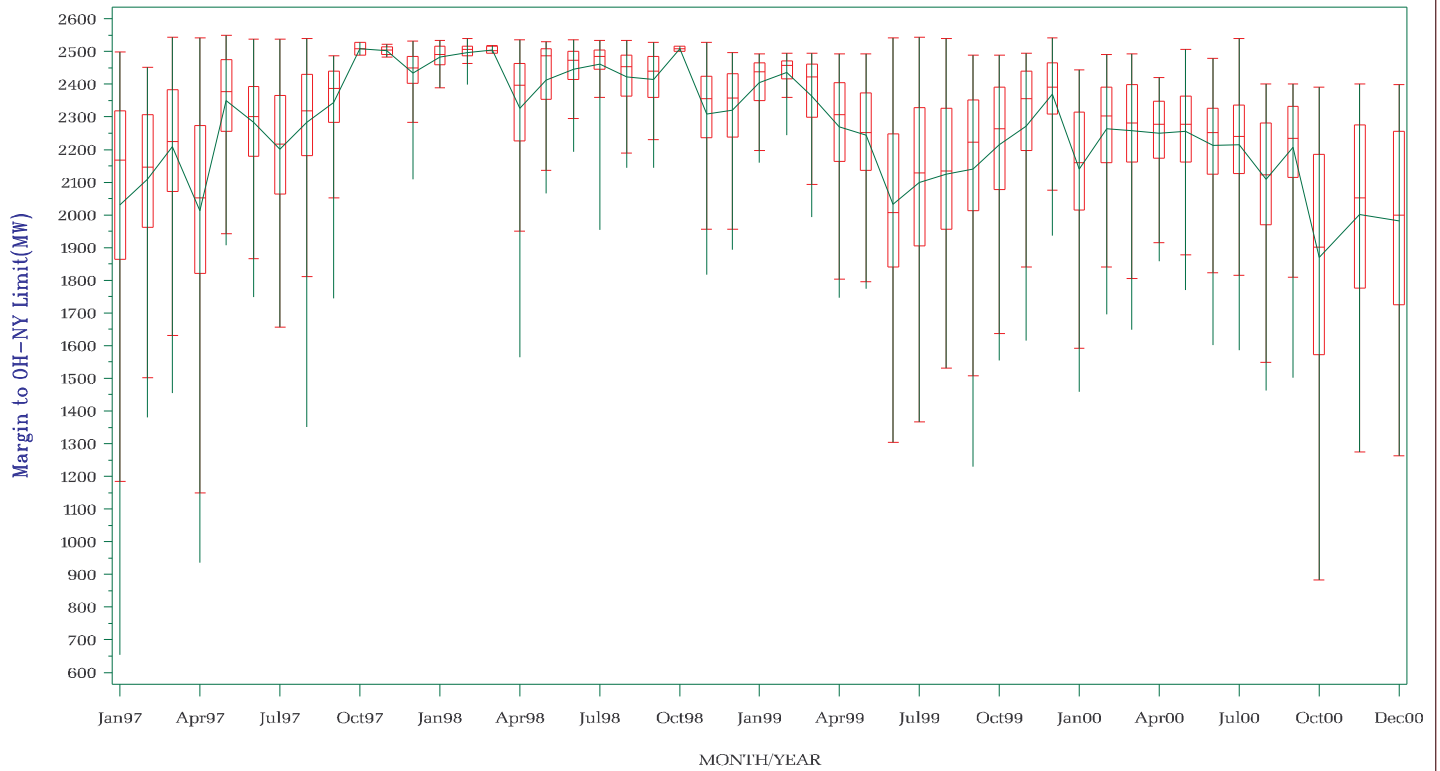
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1997 1998 1999 2000

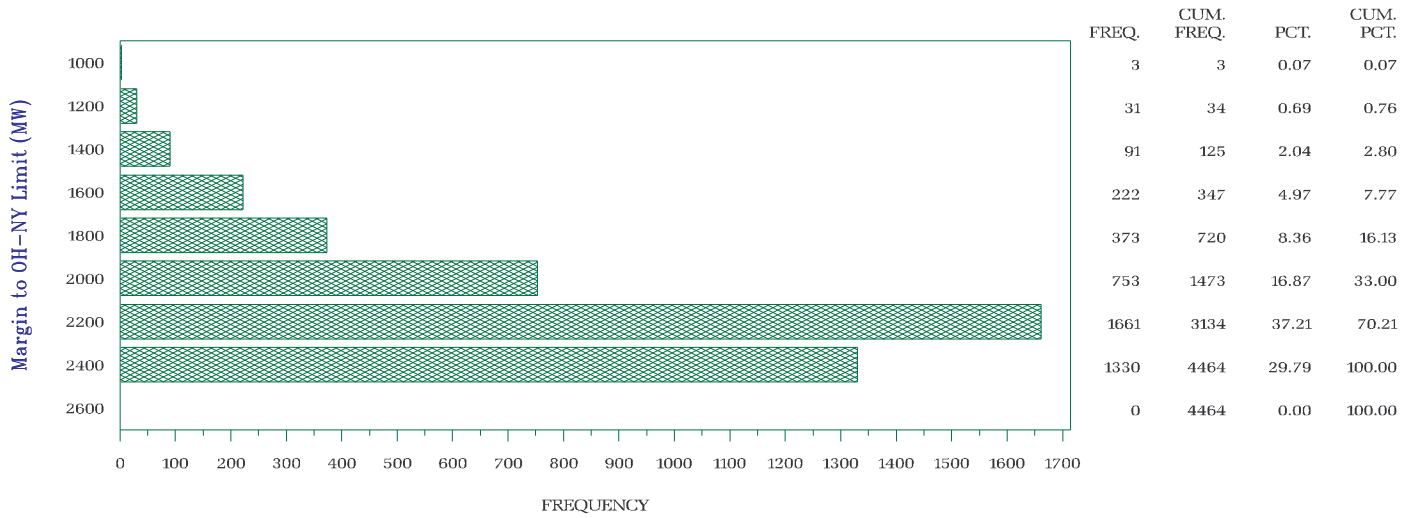
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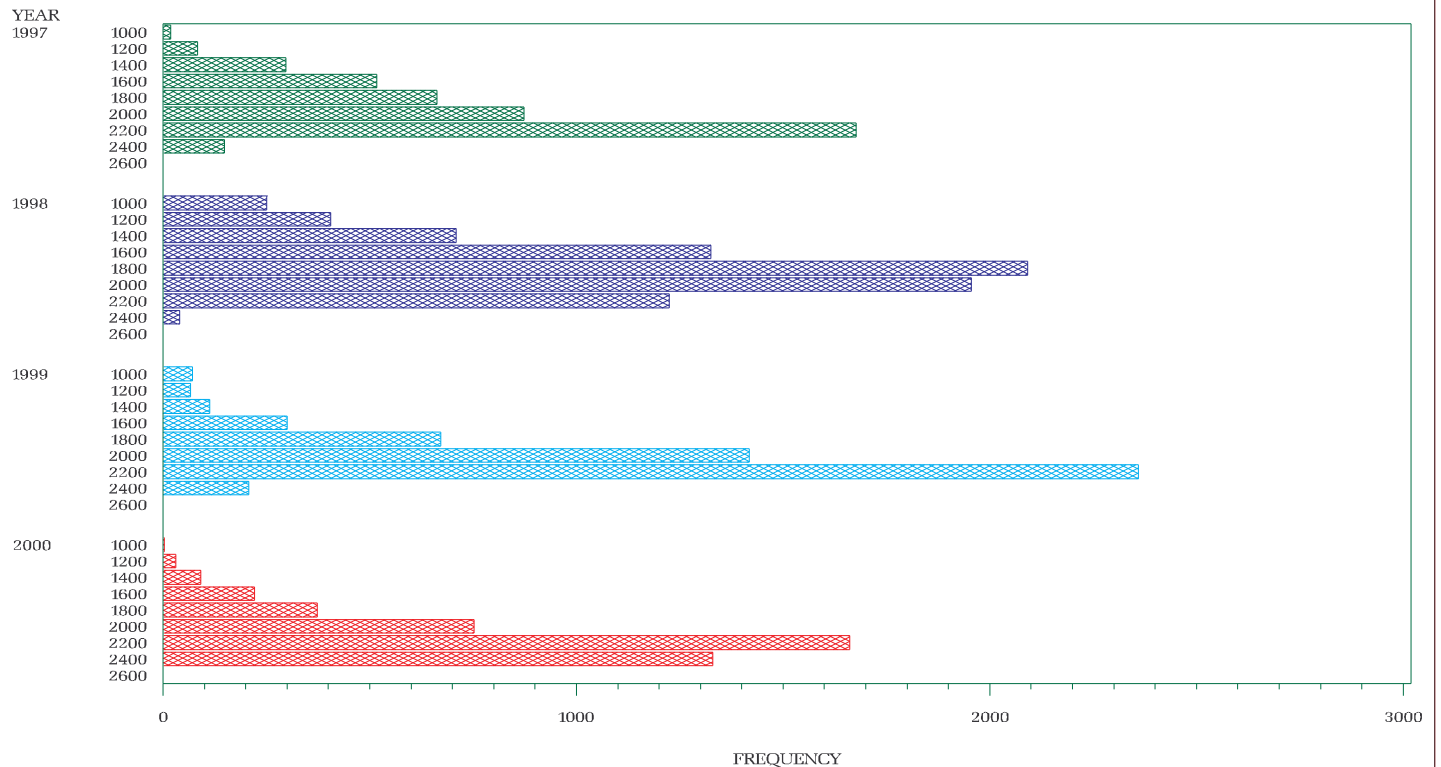
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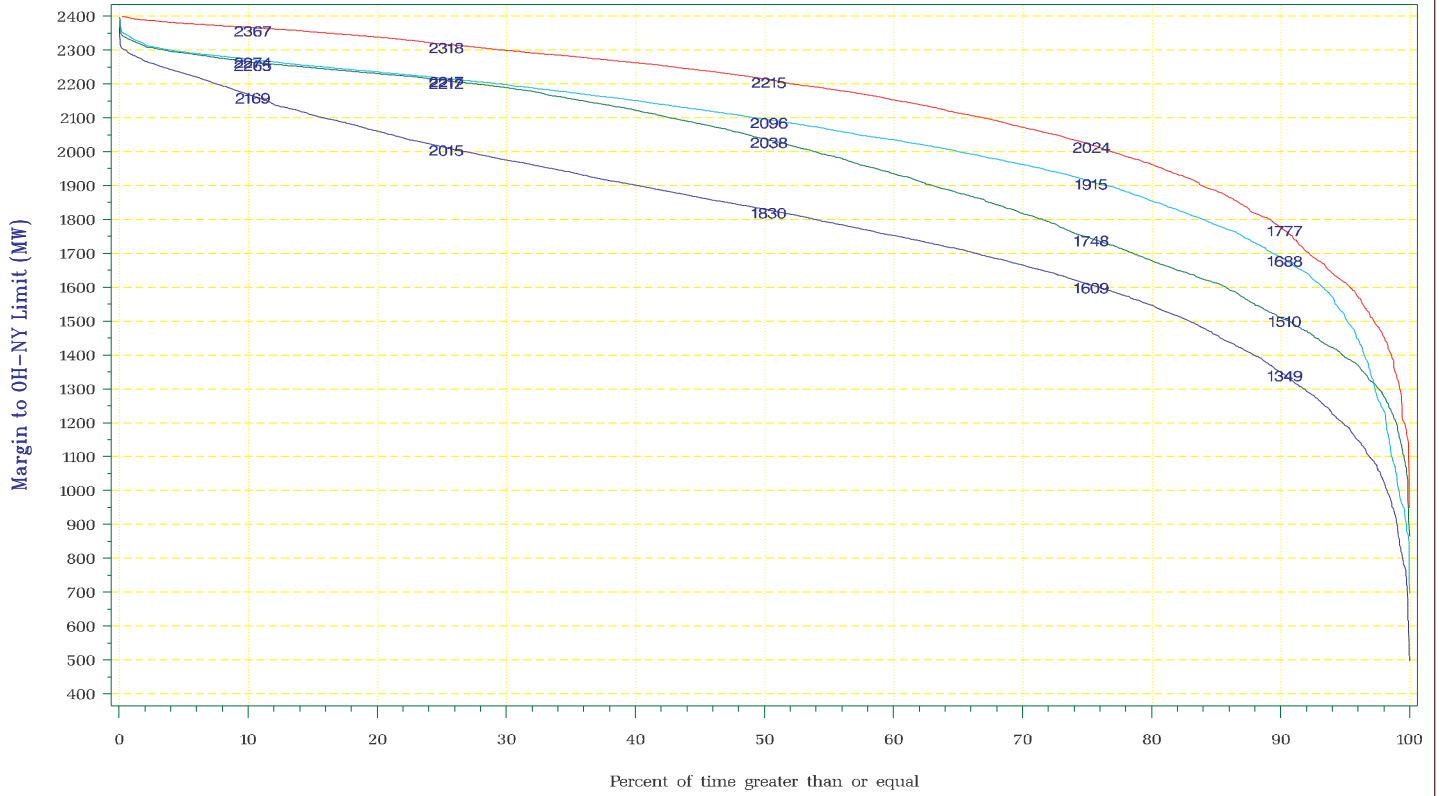
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1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

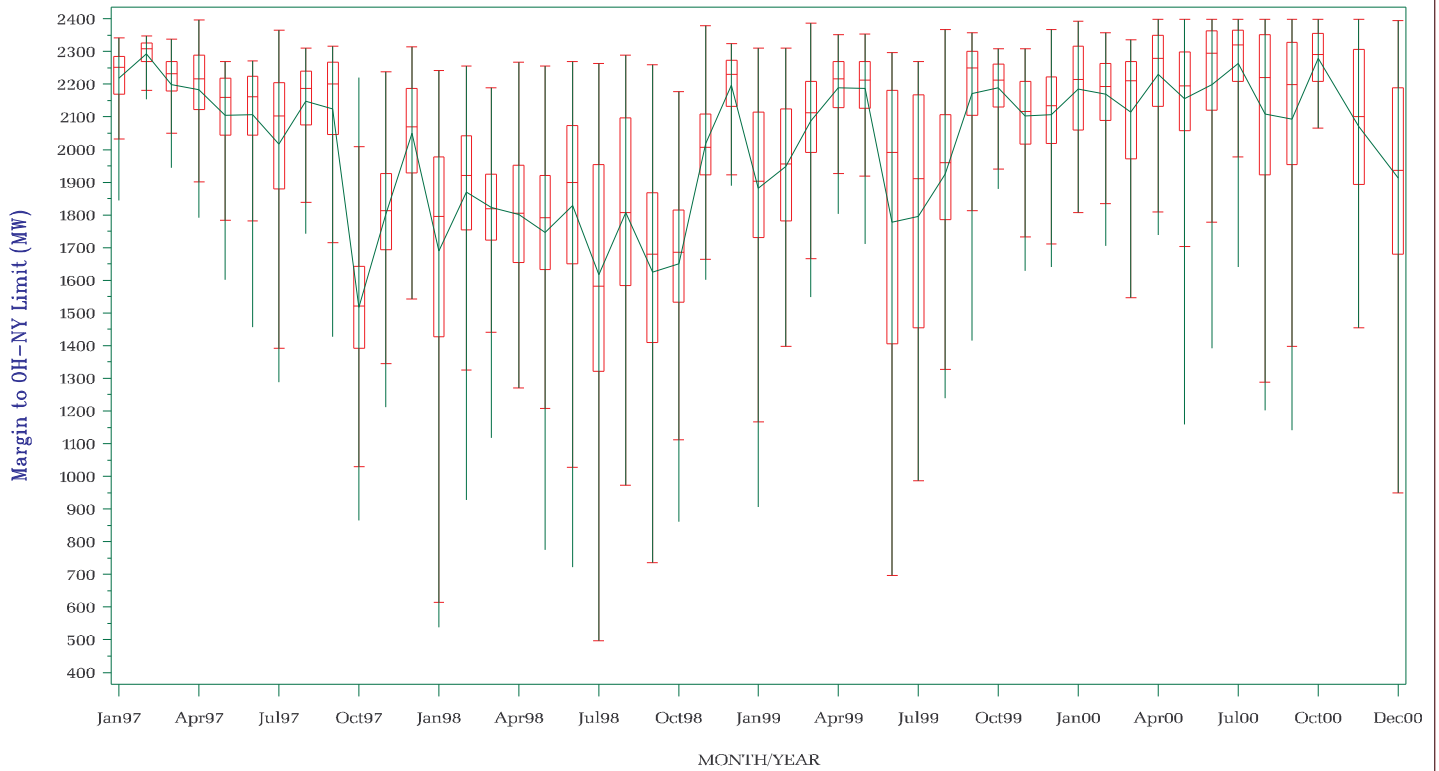
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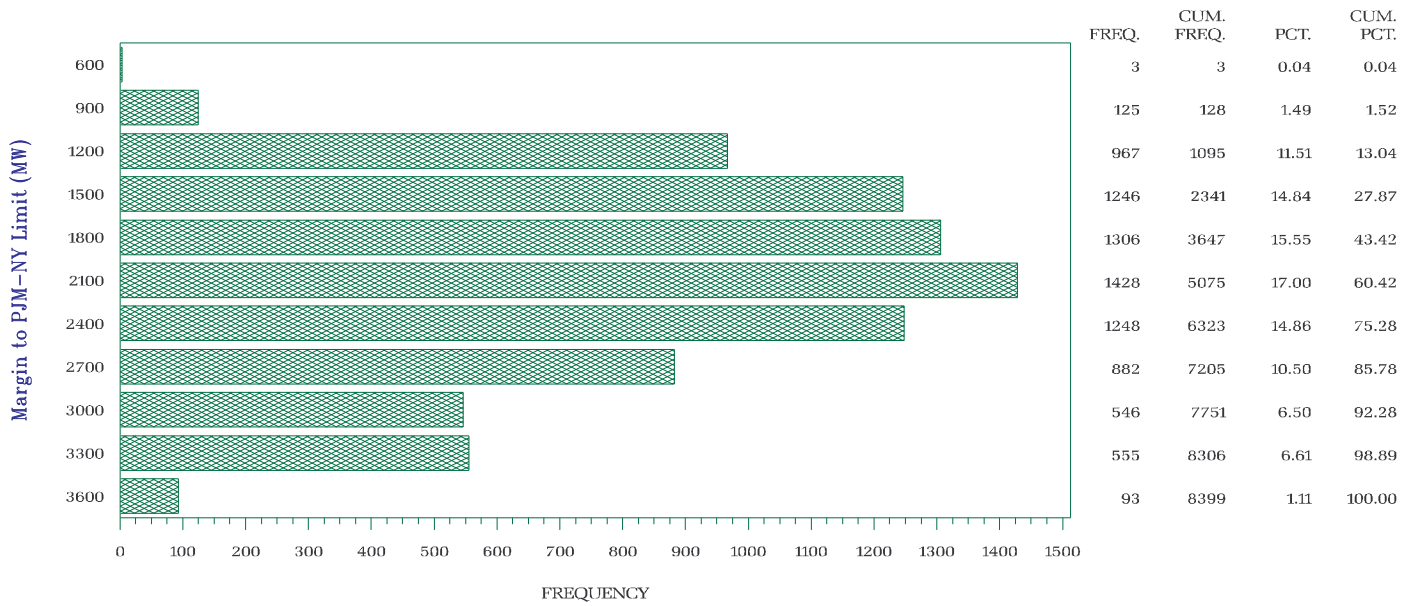
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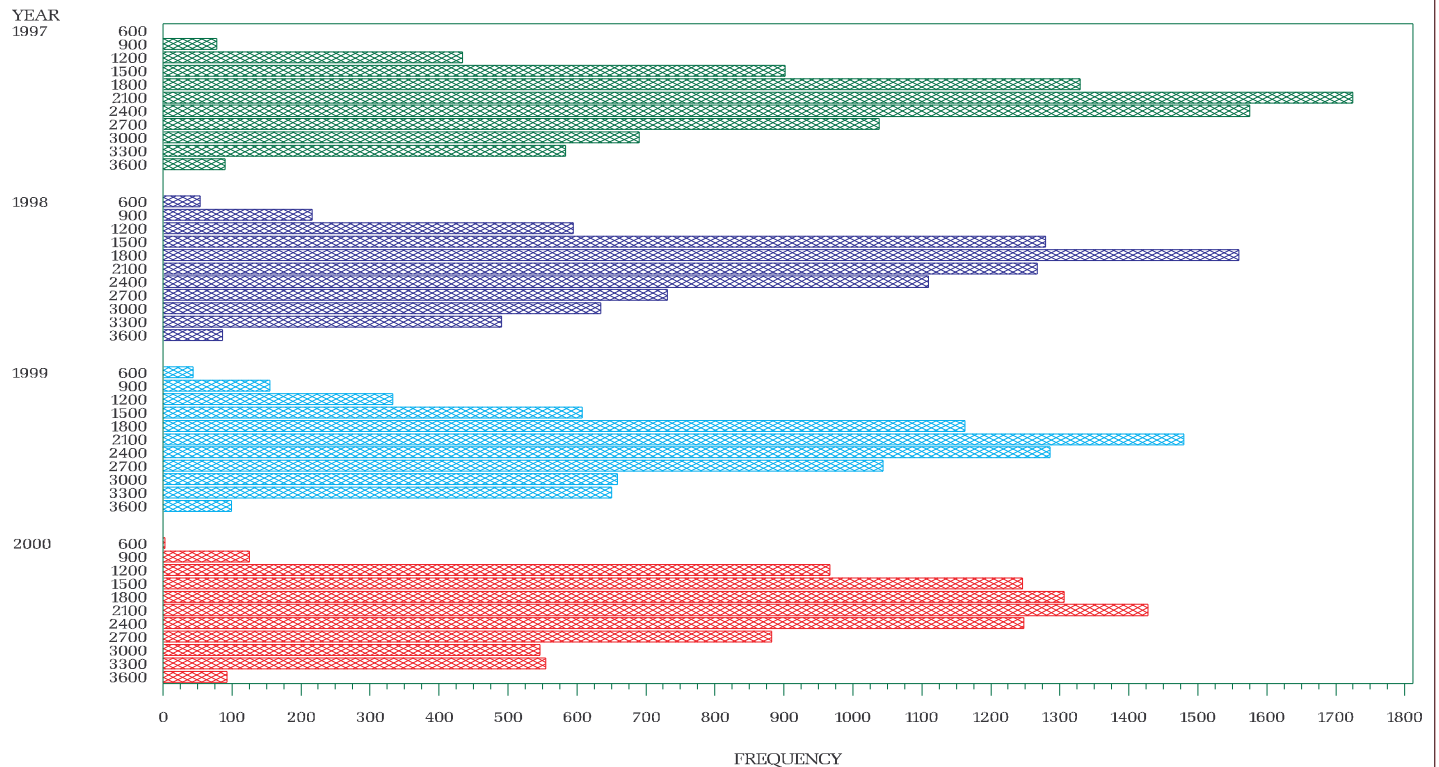
NYISO Transmission Use Statistics For January–December 2000

Margin to PJM–NY Limit



NYISO Transmission Use Statistics For January 1997–December 2000

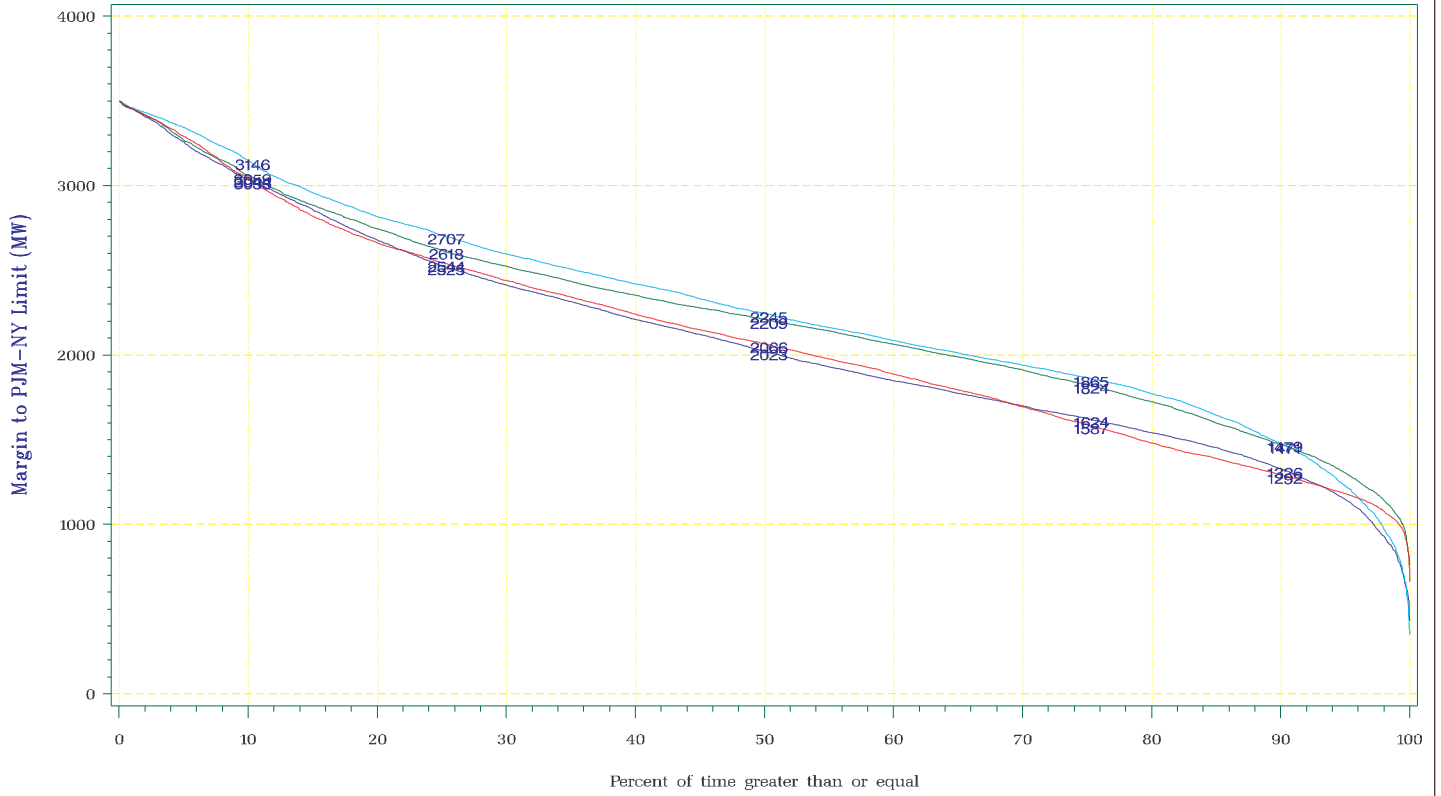
Margin to PJM–NY Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

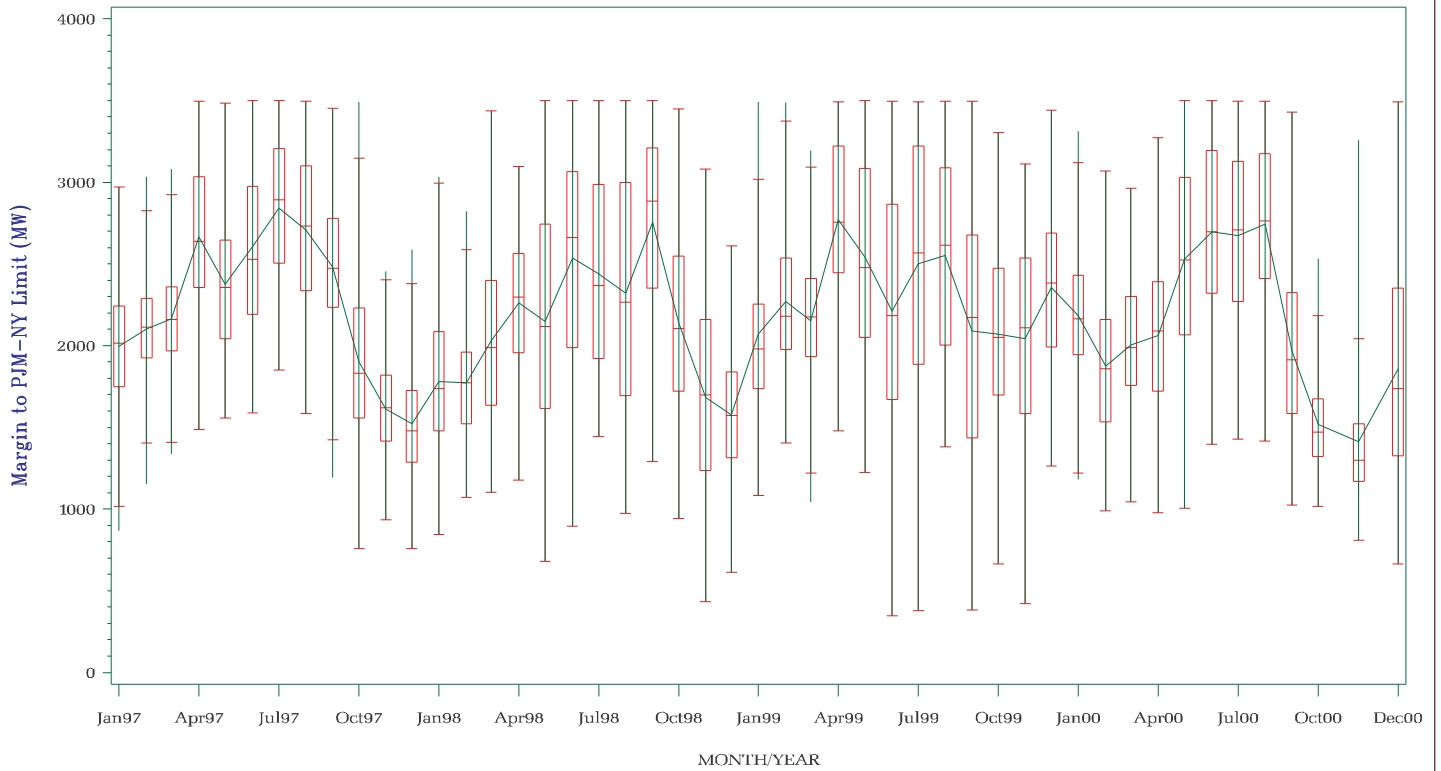
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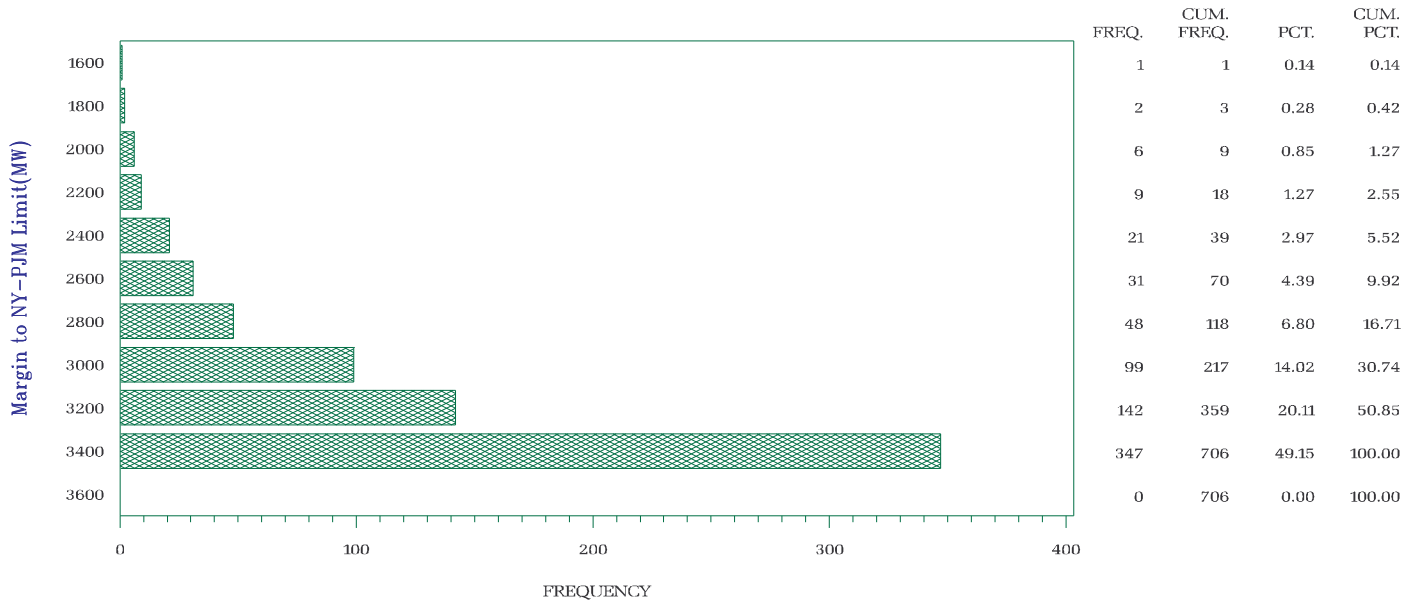
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Margin to PJM–NY Limit



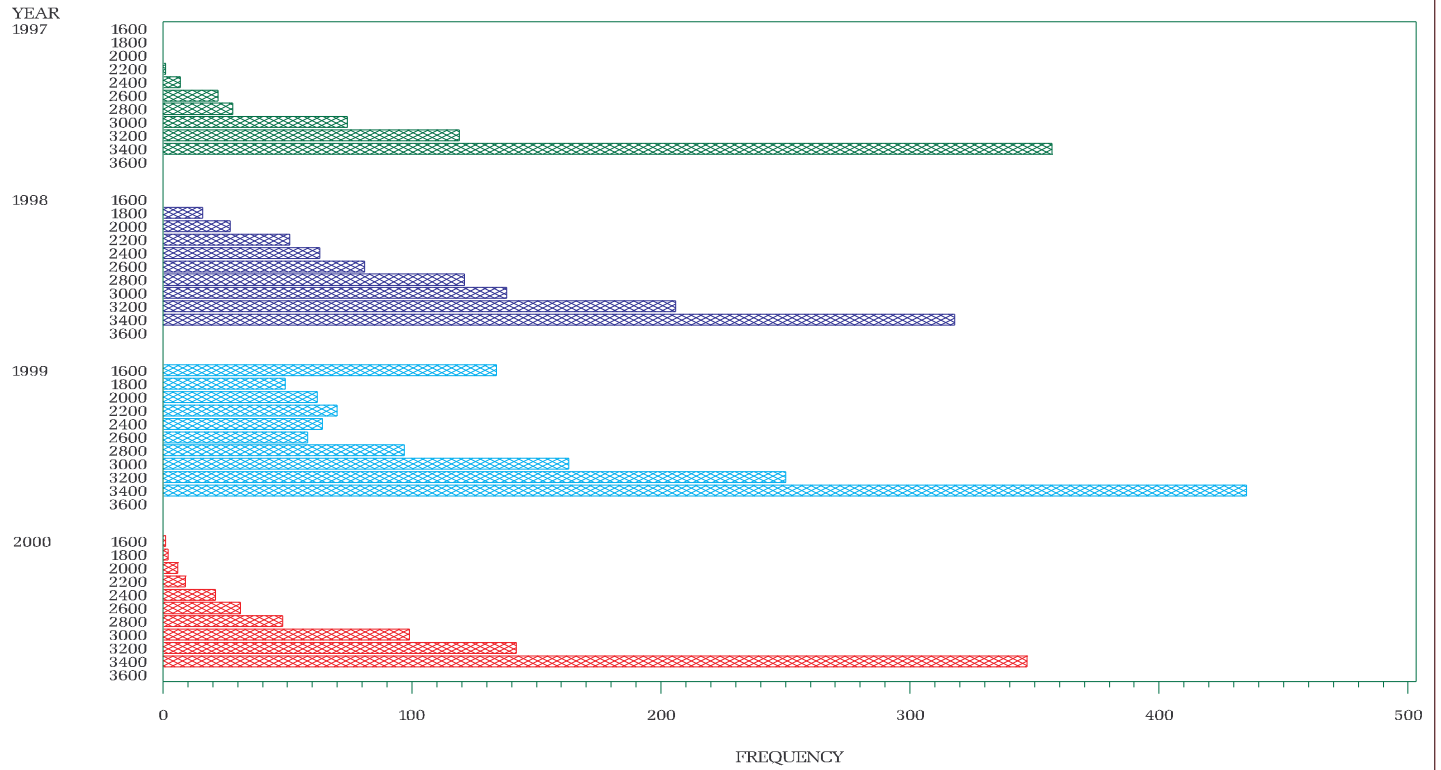
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Margin to NY–PJM Limit



NYISO Transmission Use Statistics For January 1997–December 2000

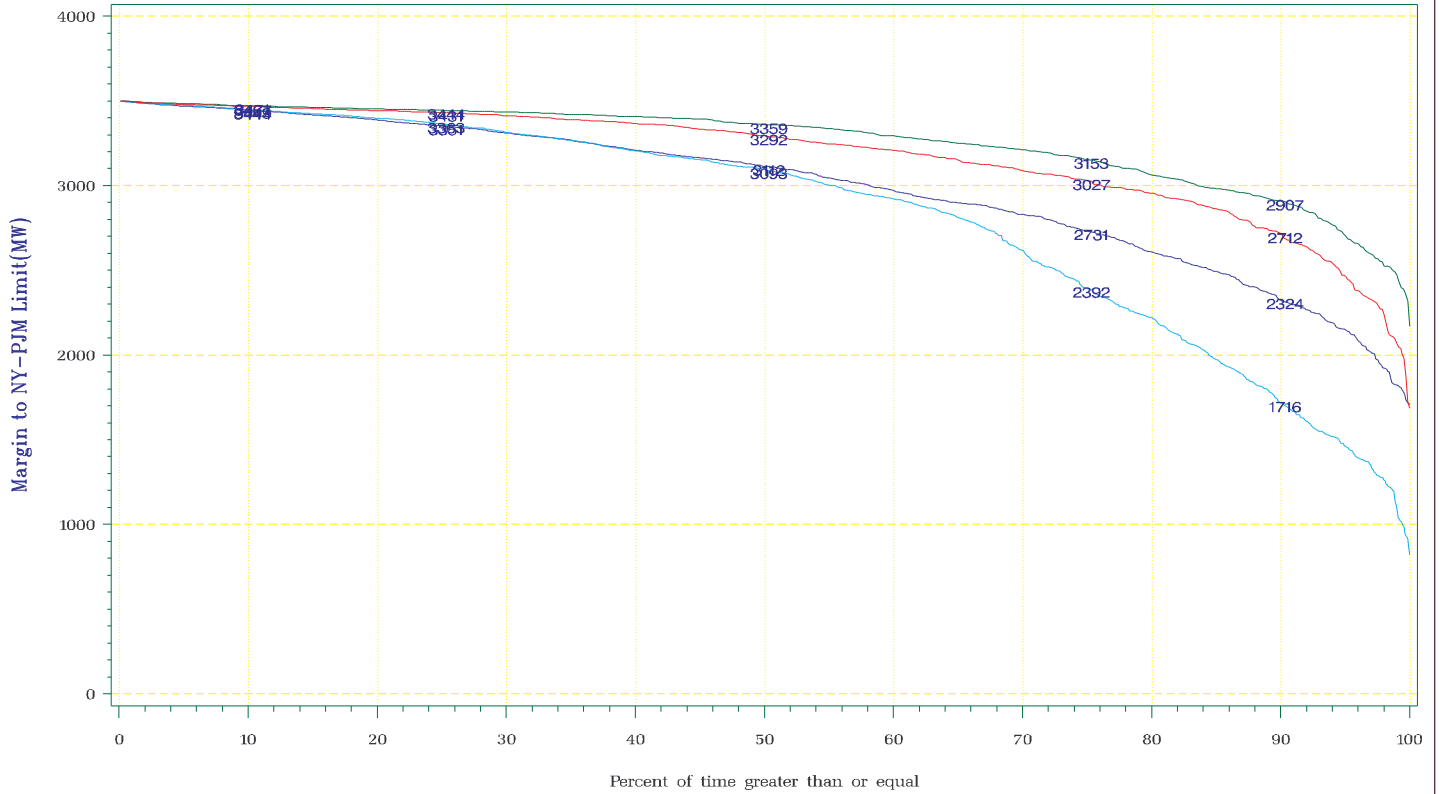
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1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

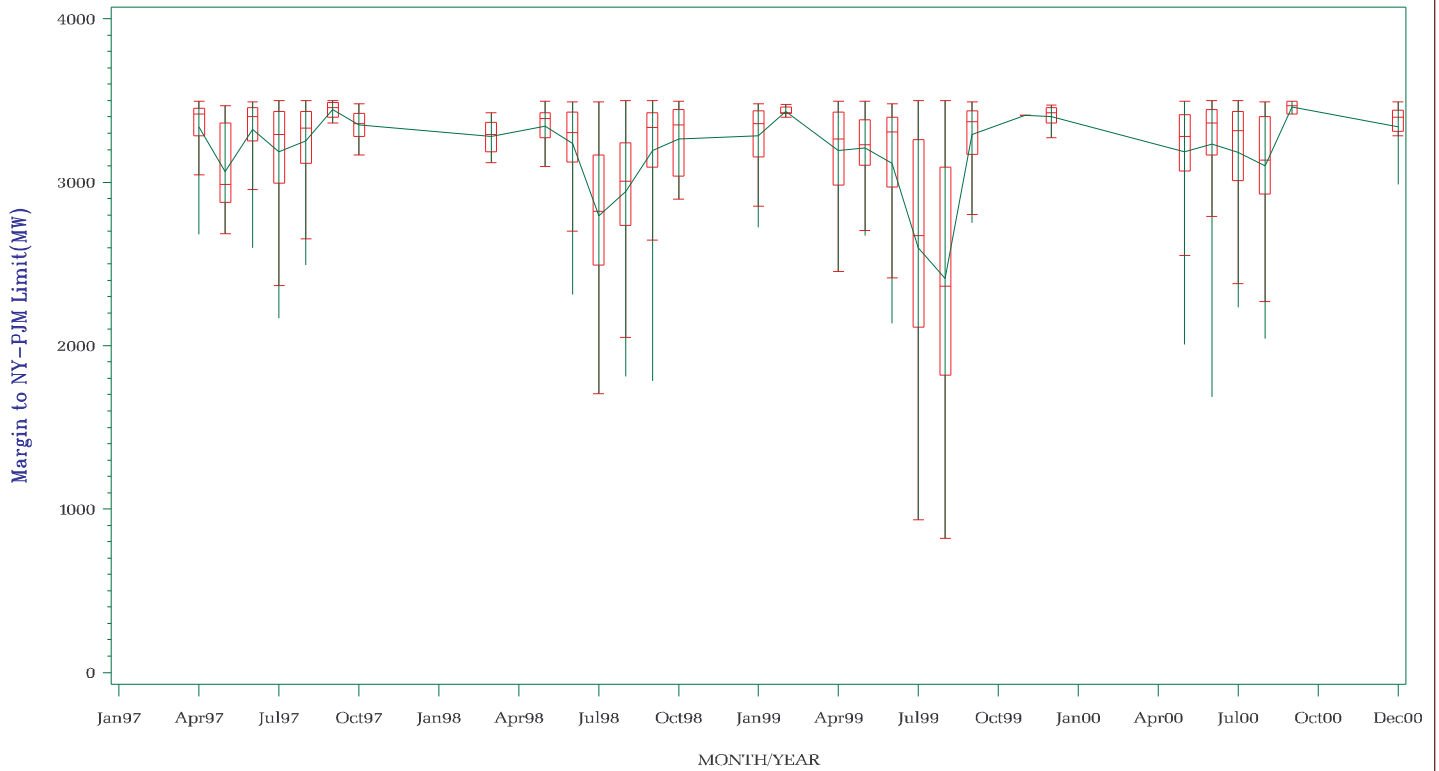
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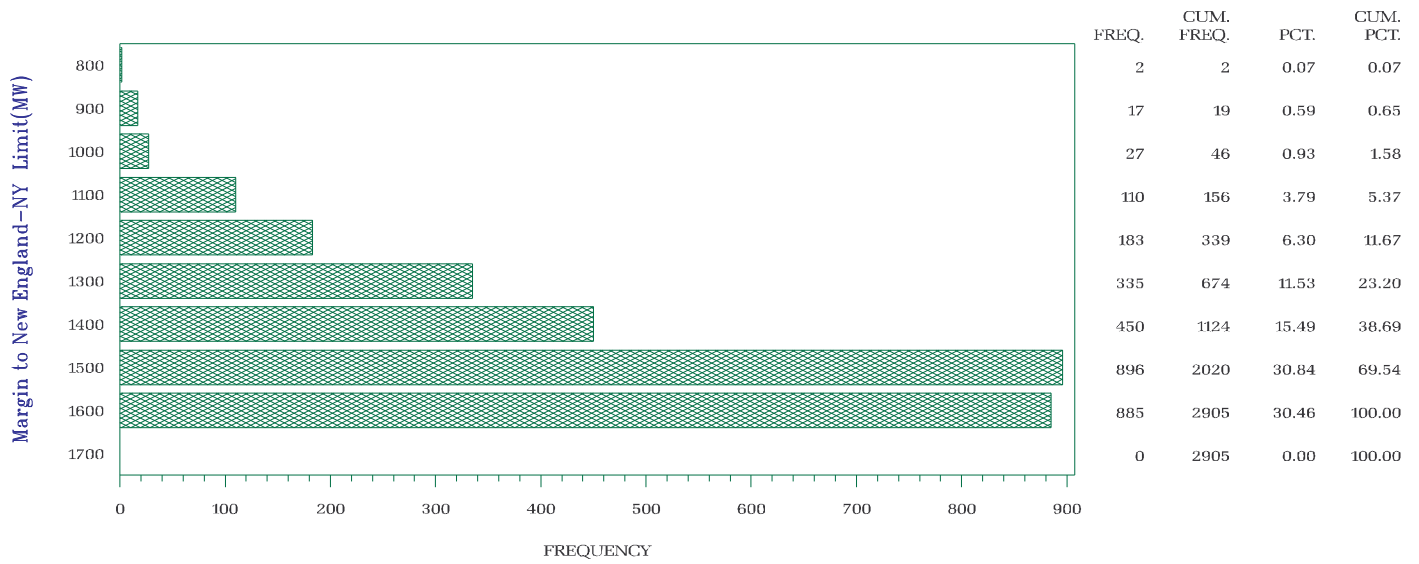
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Margin to NY-PJM Limit



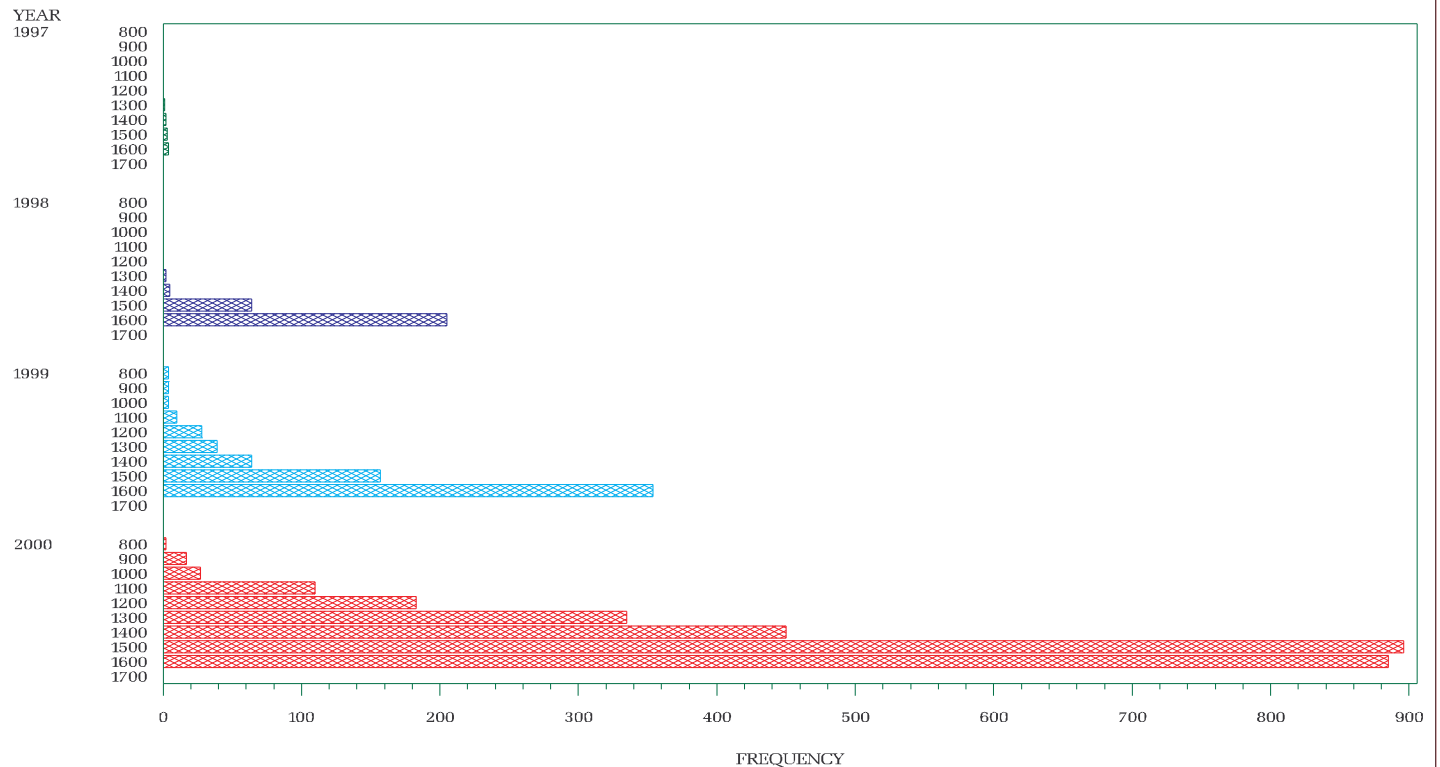
NYISO Transmission Use Statistics For January–December 2000

Margin to New England – NY Limit



NYISO Transmission Use Statistics For January 1997–December 2000

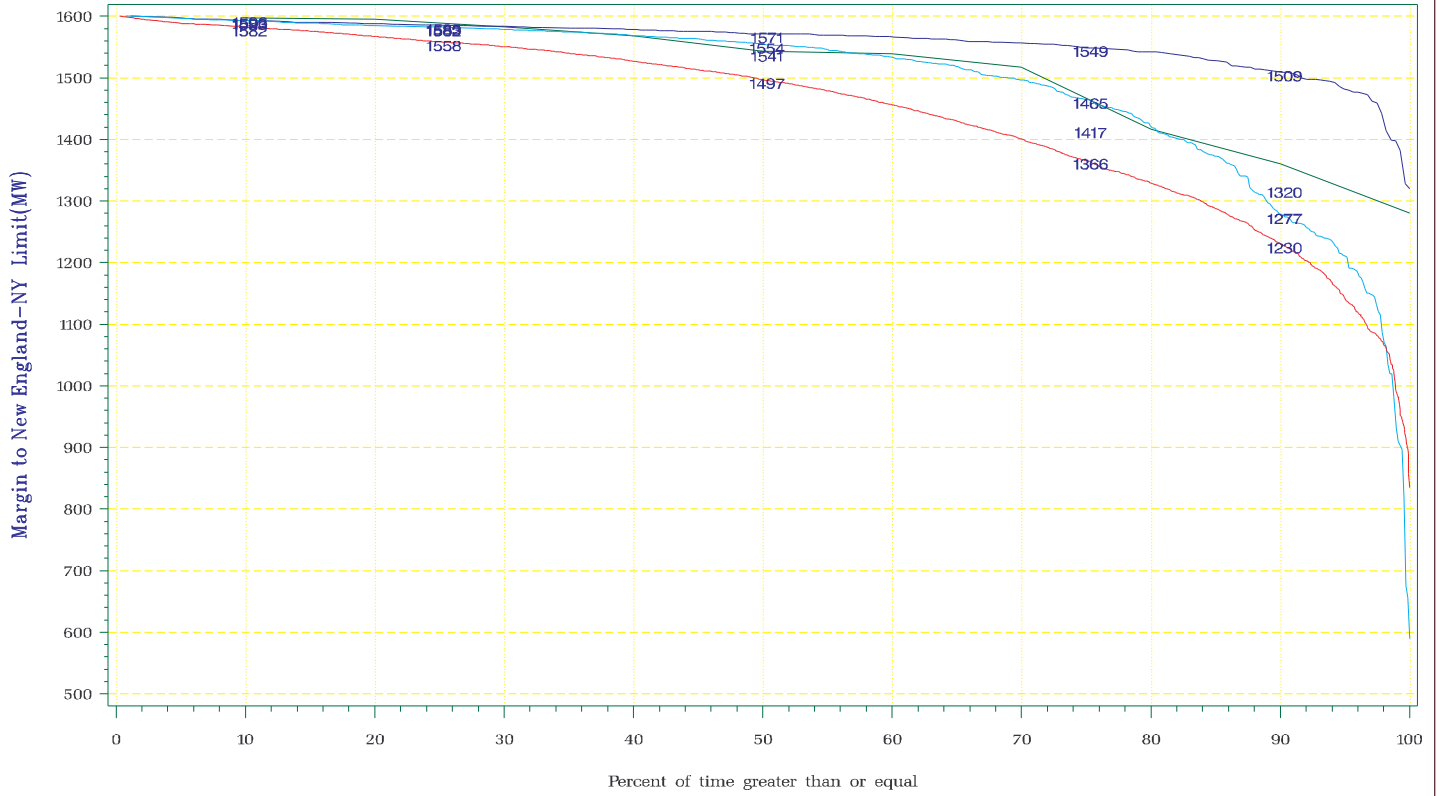
Margin to New England – NY Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

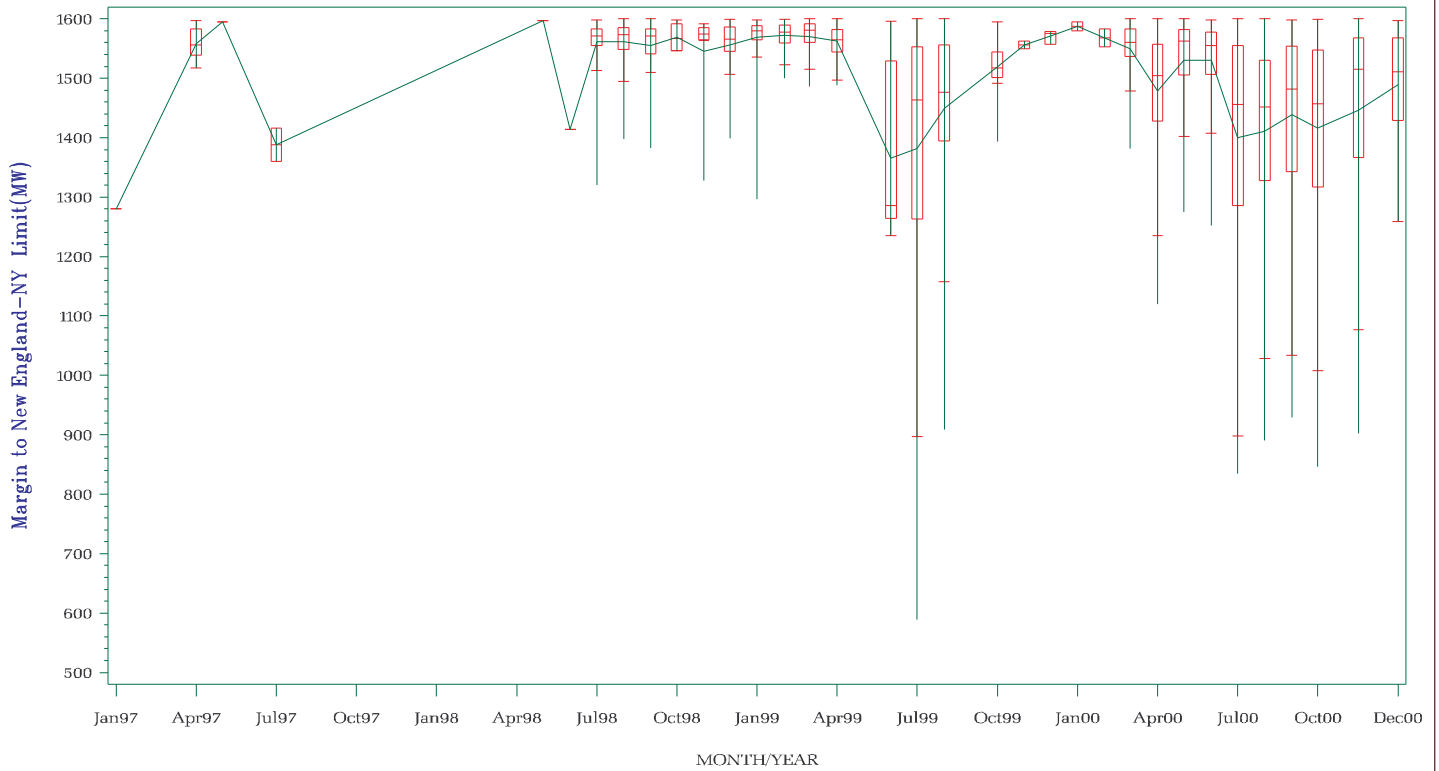
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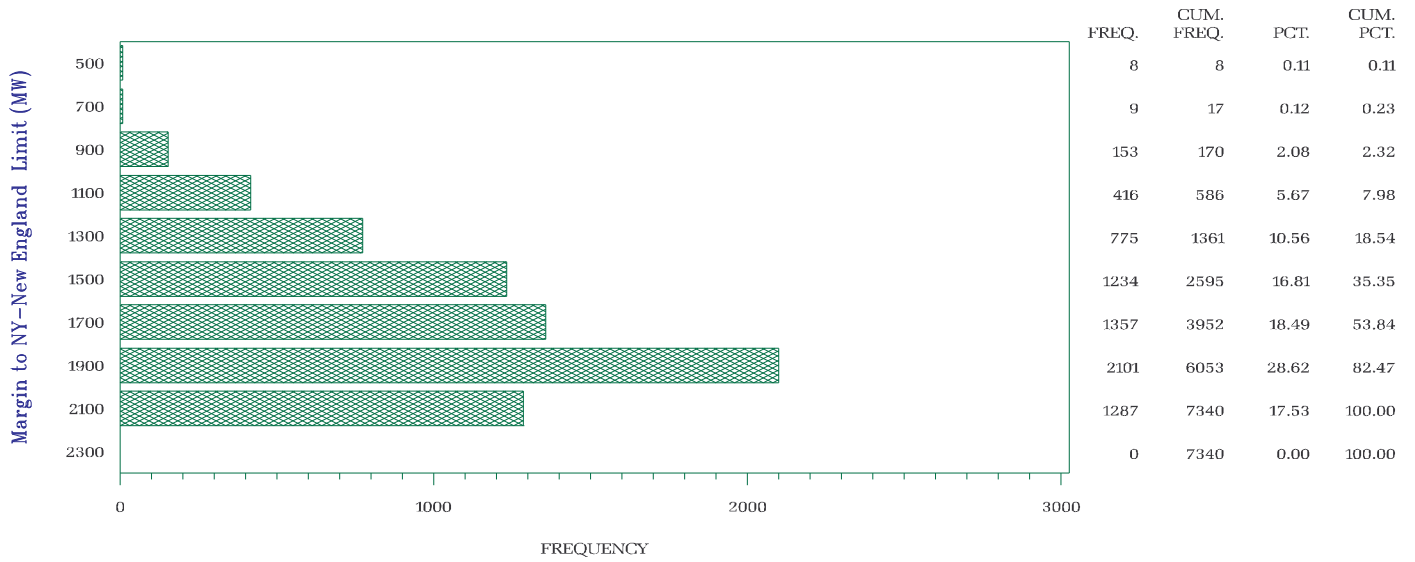
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Margin to New England – NY Limit



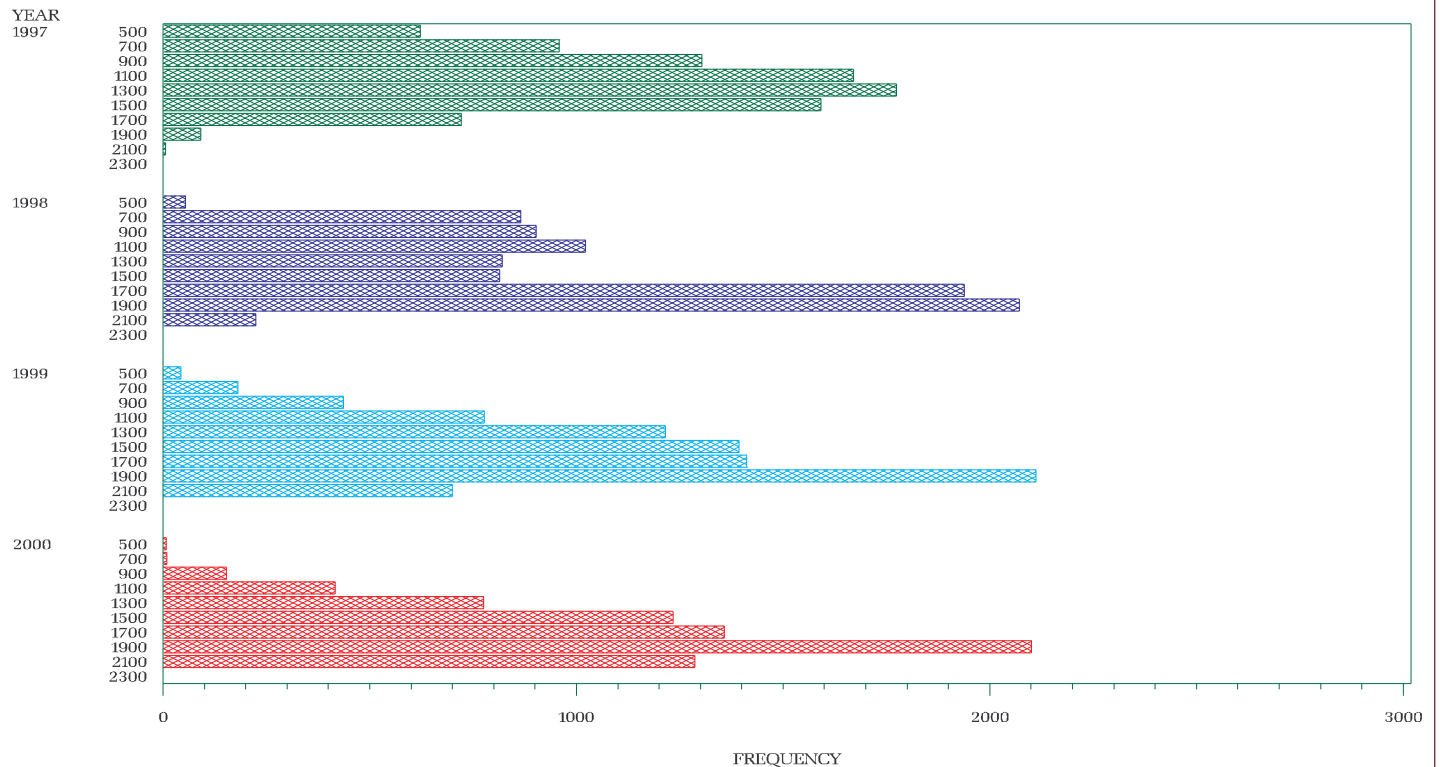
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NYISO Transmission Use Statistics For January 1997–December 2000

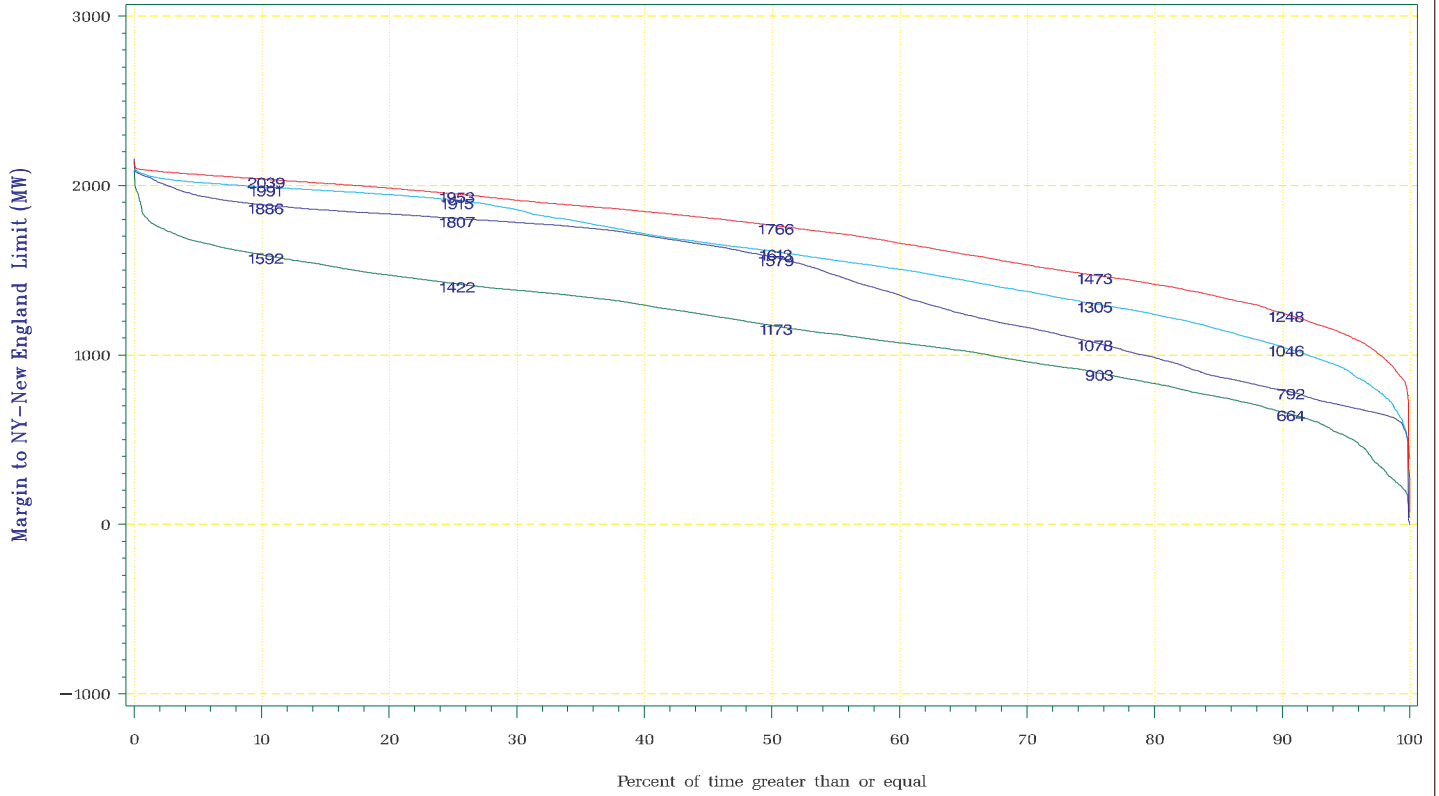
Margin to NY–New England Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

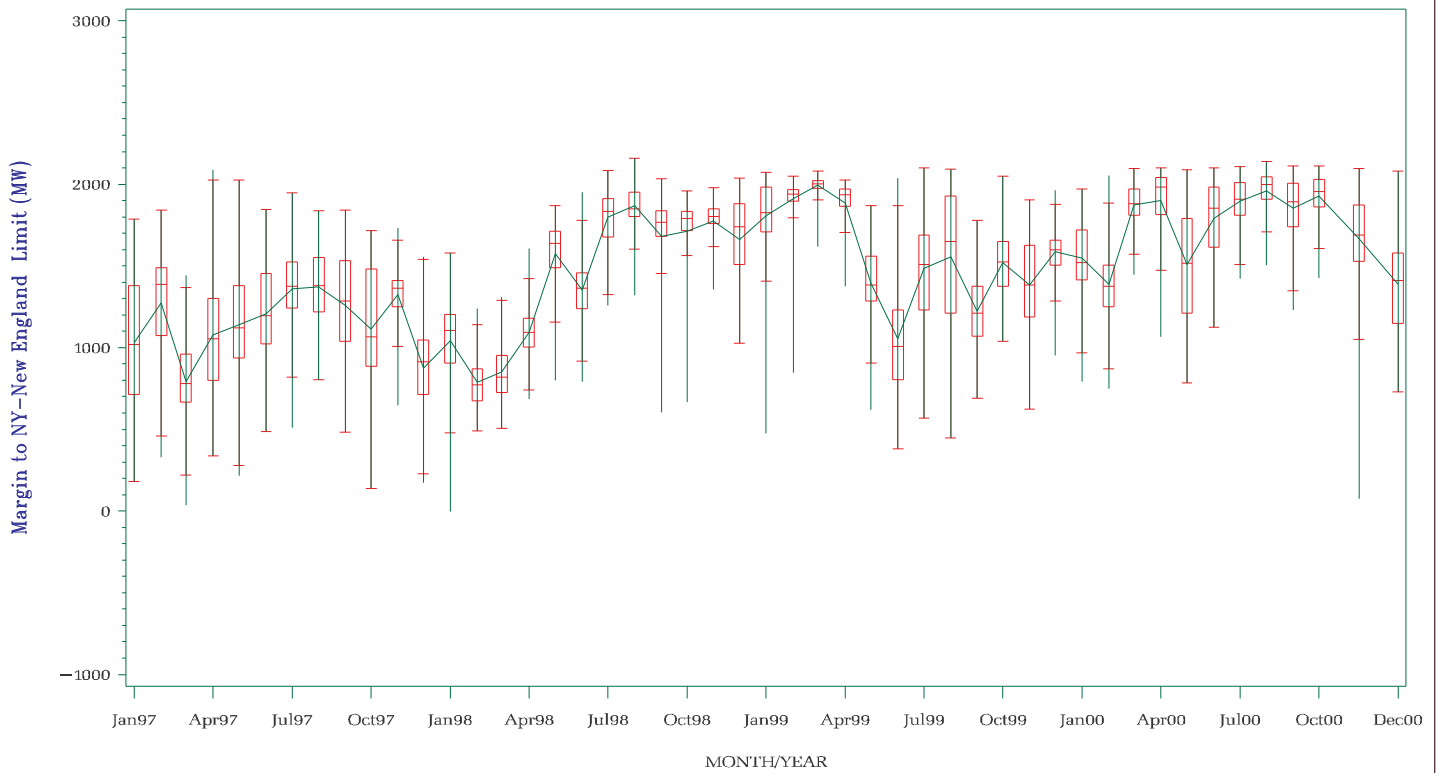
Margin to NY–New England Limit



1997 1998 1999 2000

NYISO Average Monthly Interface Flow
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Margin to NY–New England Limit



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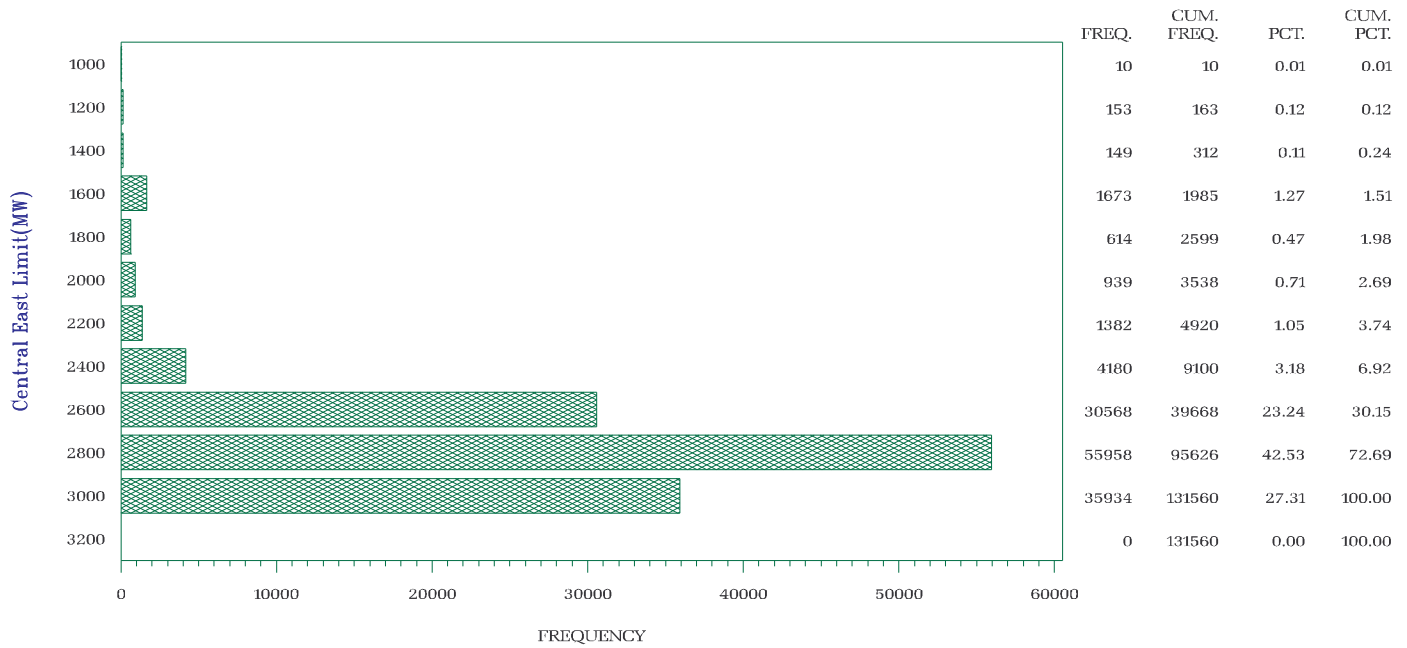
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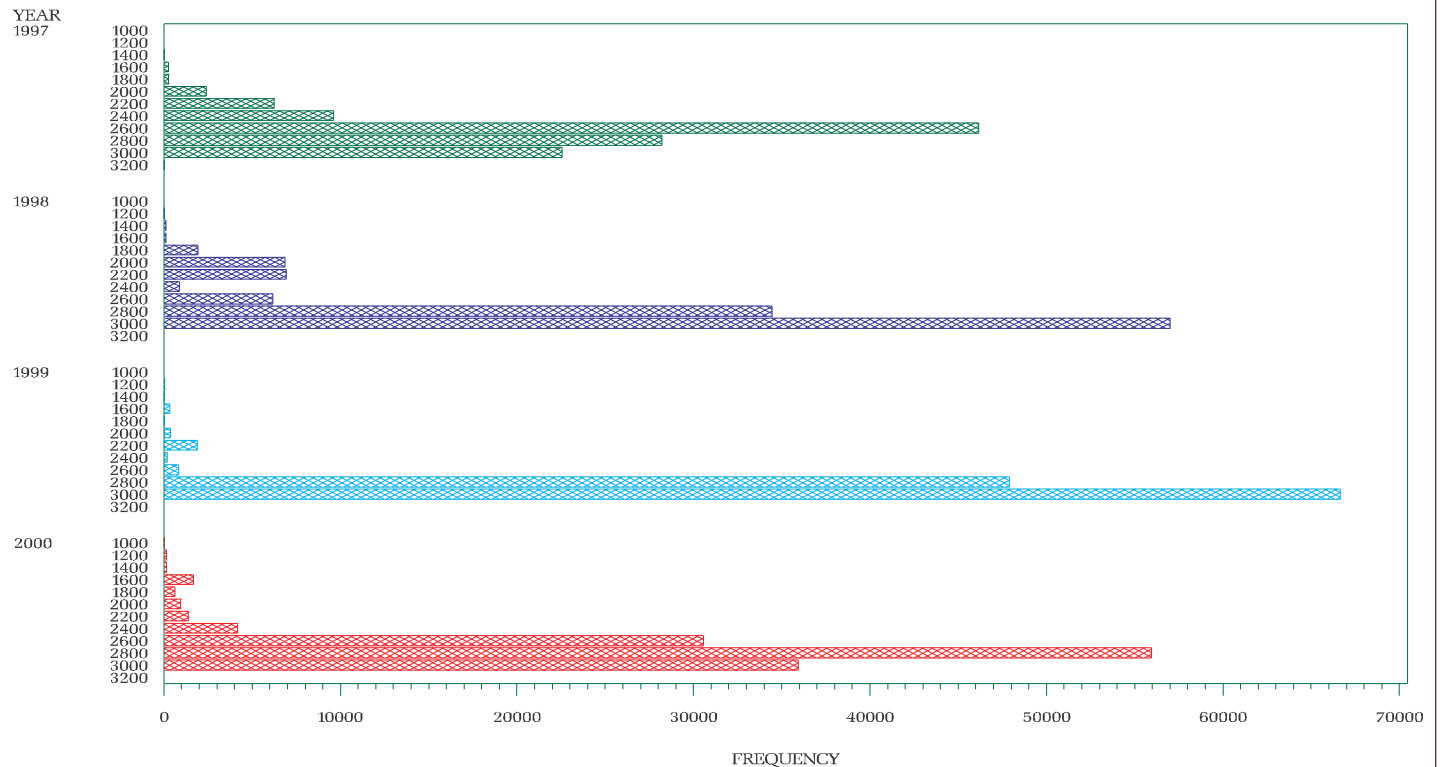
NYISO Transmission Use Statistics For January-December 2000

Central East Limit



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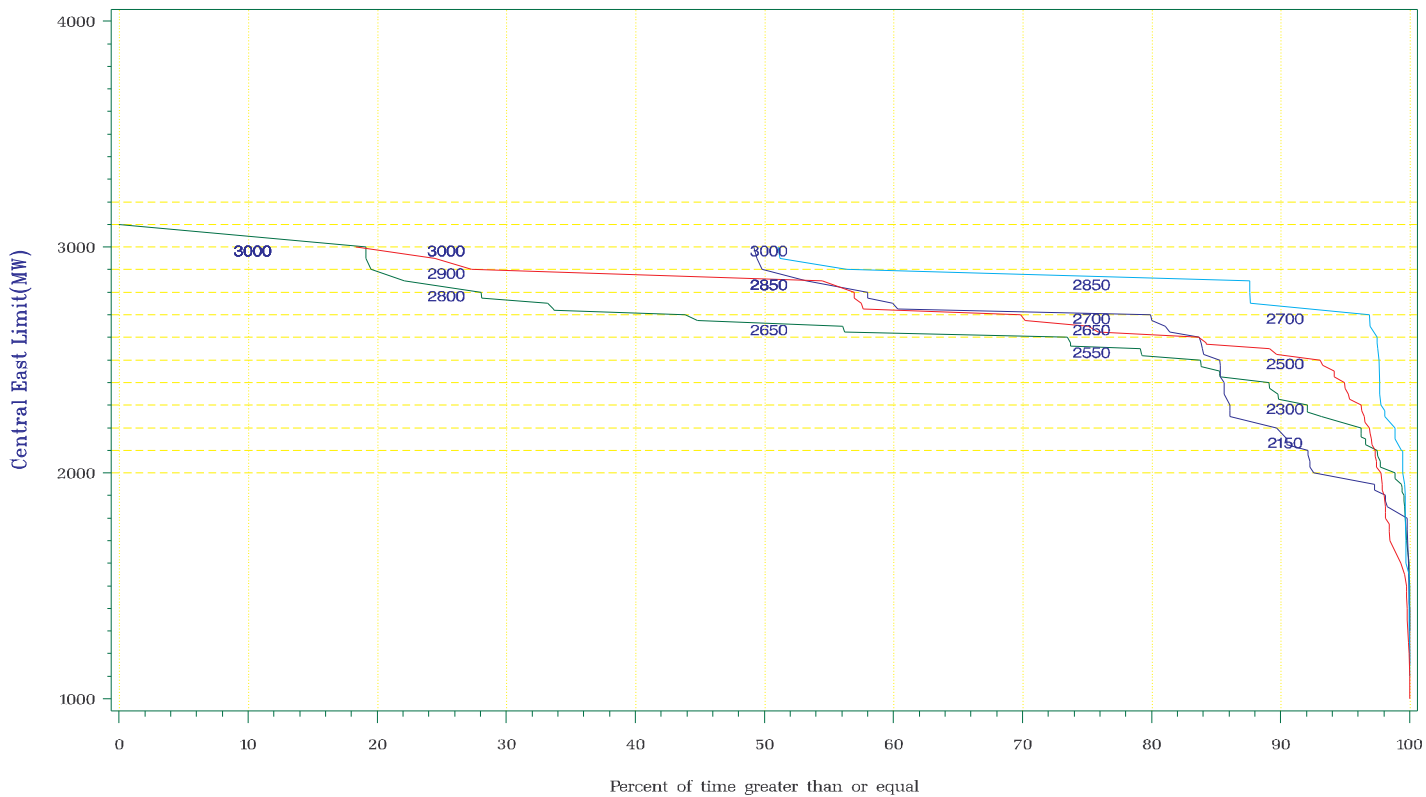
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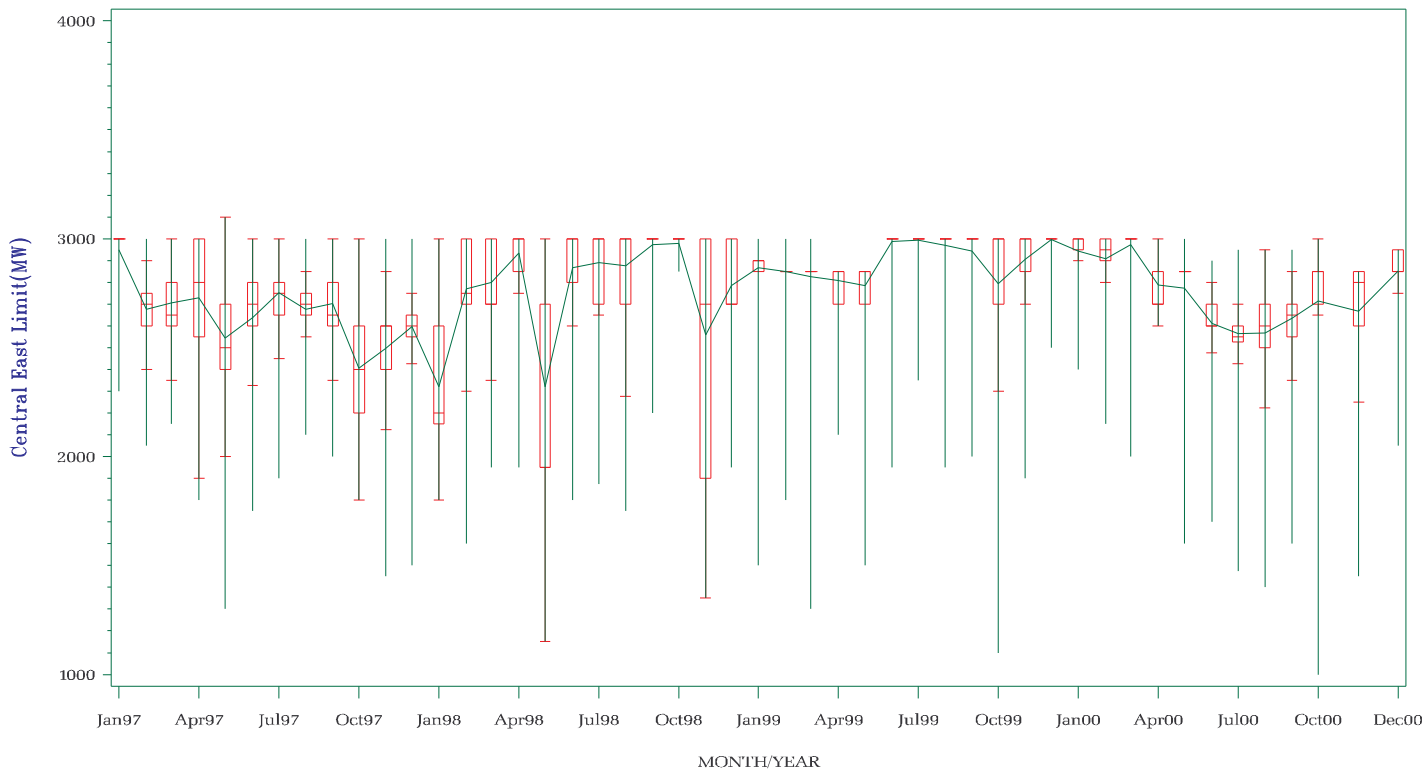
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1997 1998 1999 2000

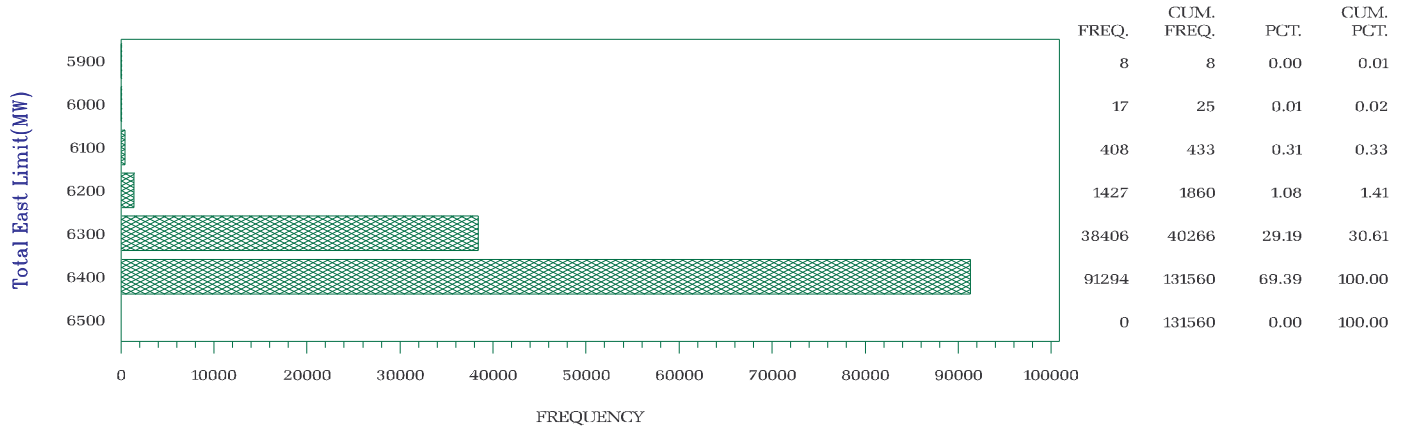
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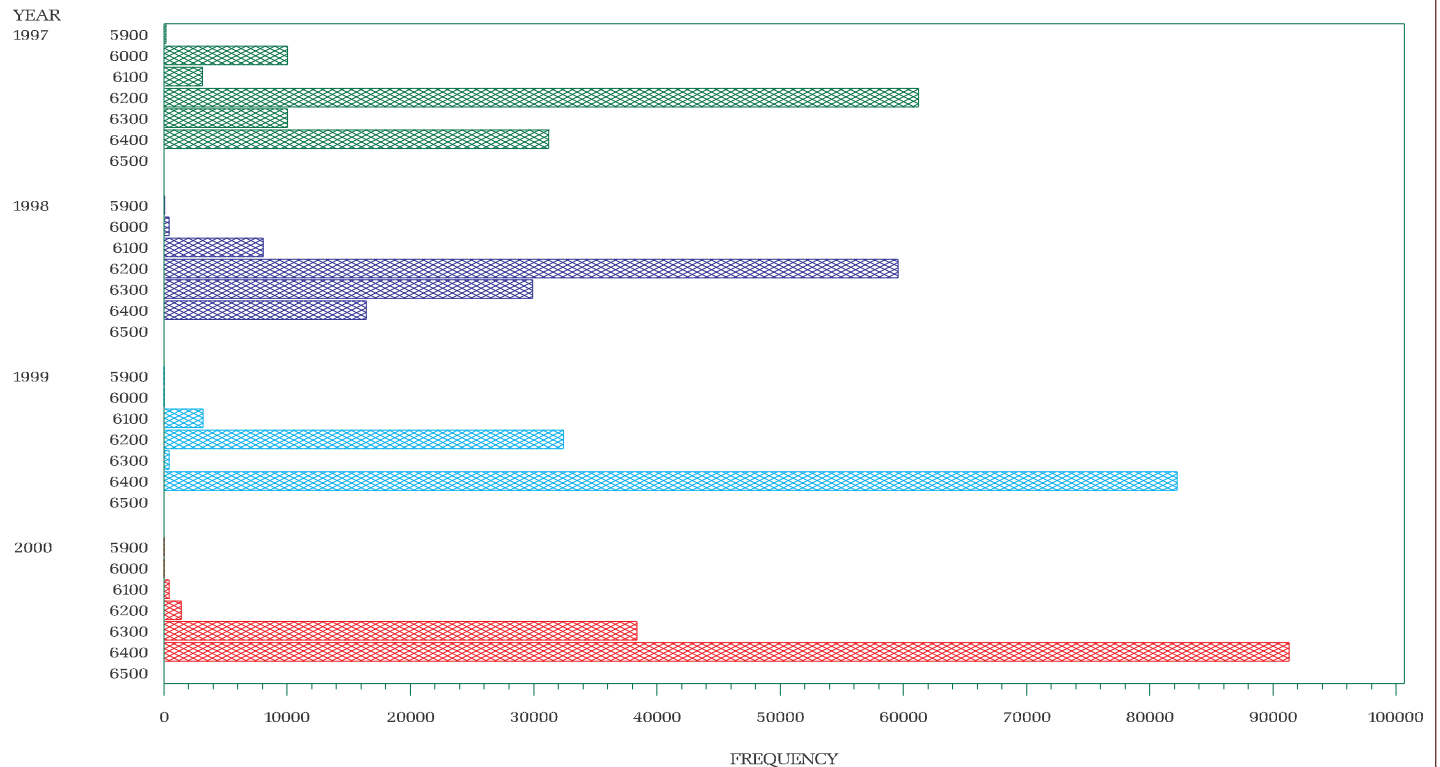
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NYISO Transmission Use Statistics For January 1997–December 2000

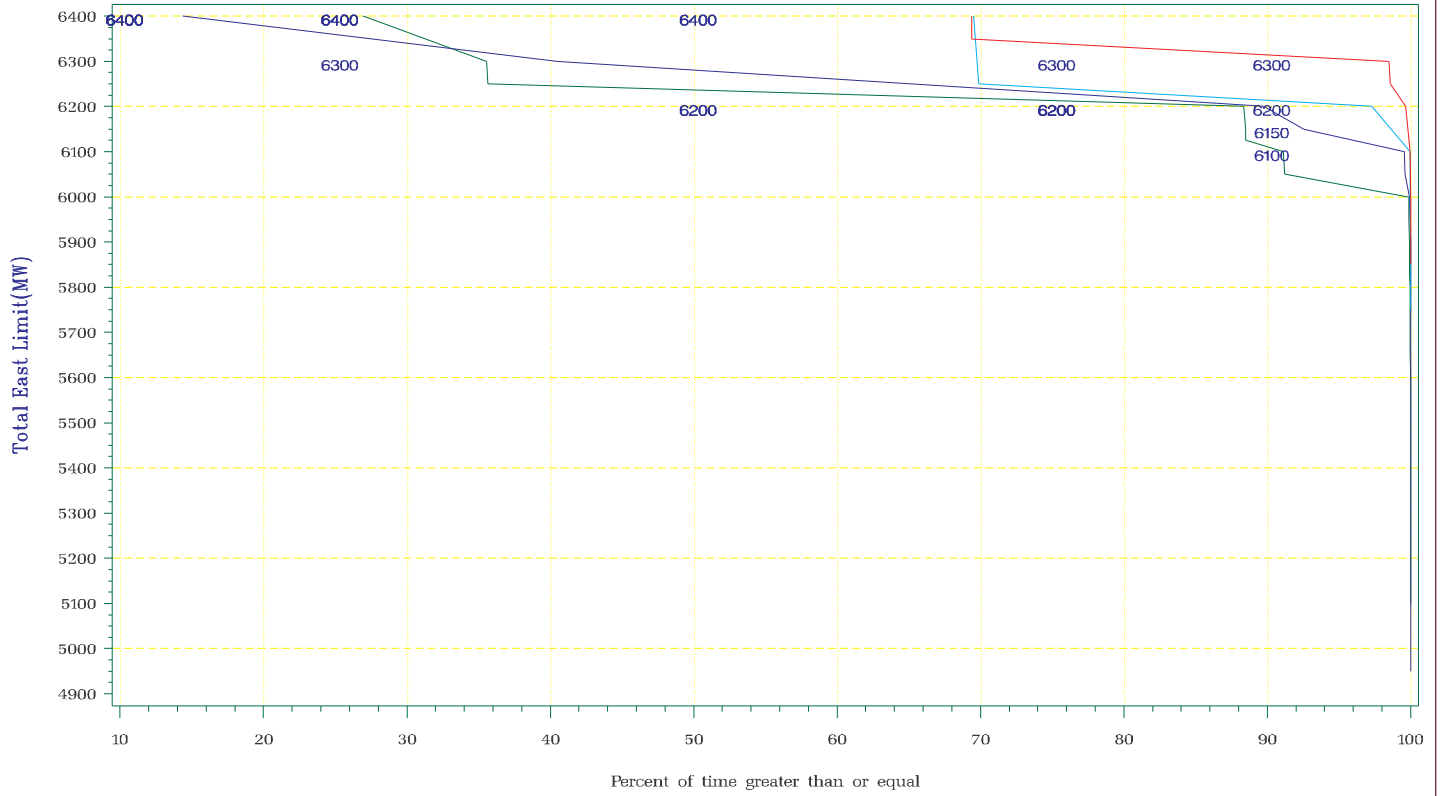
Total East Limit



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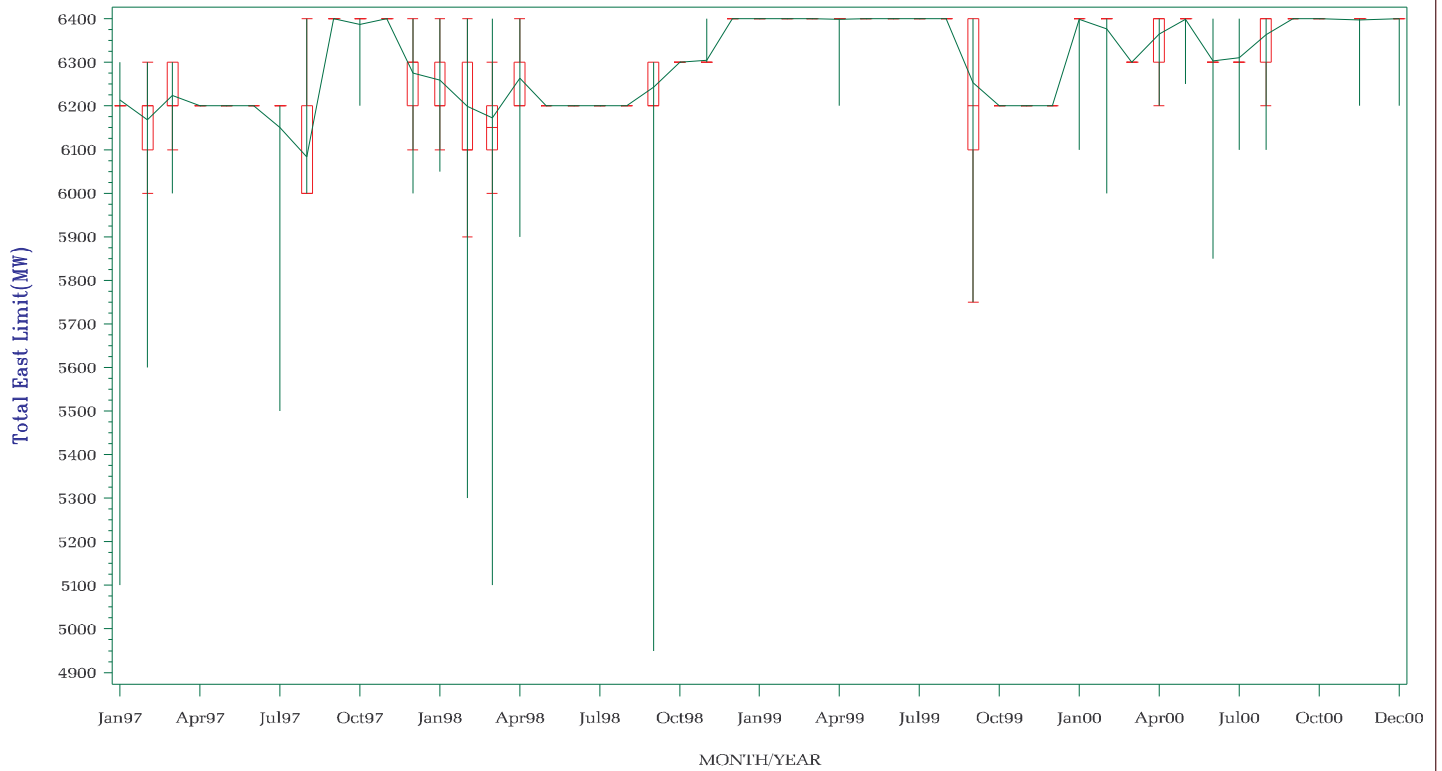
Total East Limit



1997 1998 1999 2000

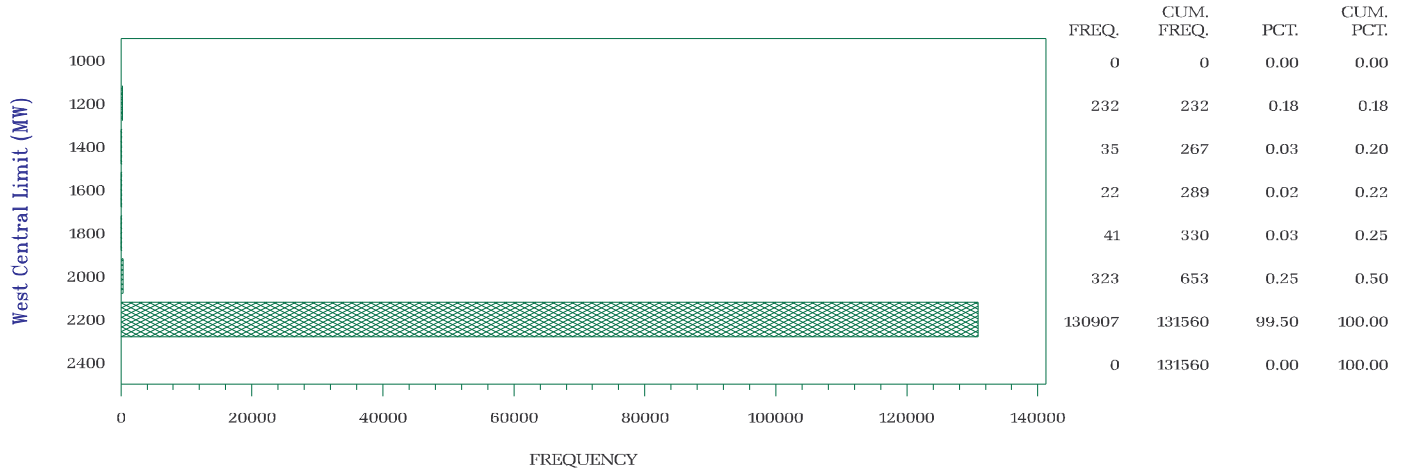
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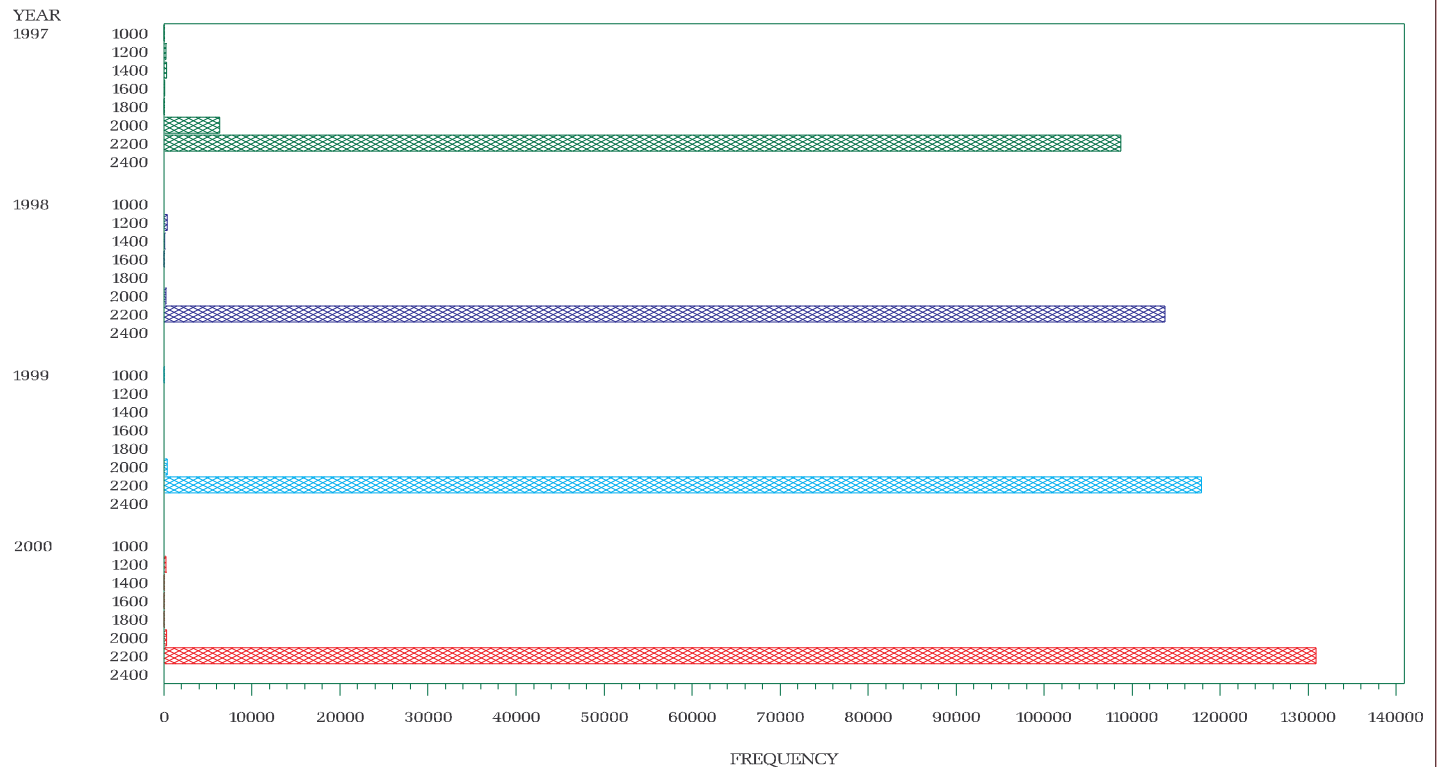
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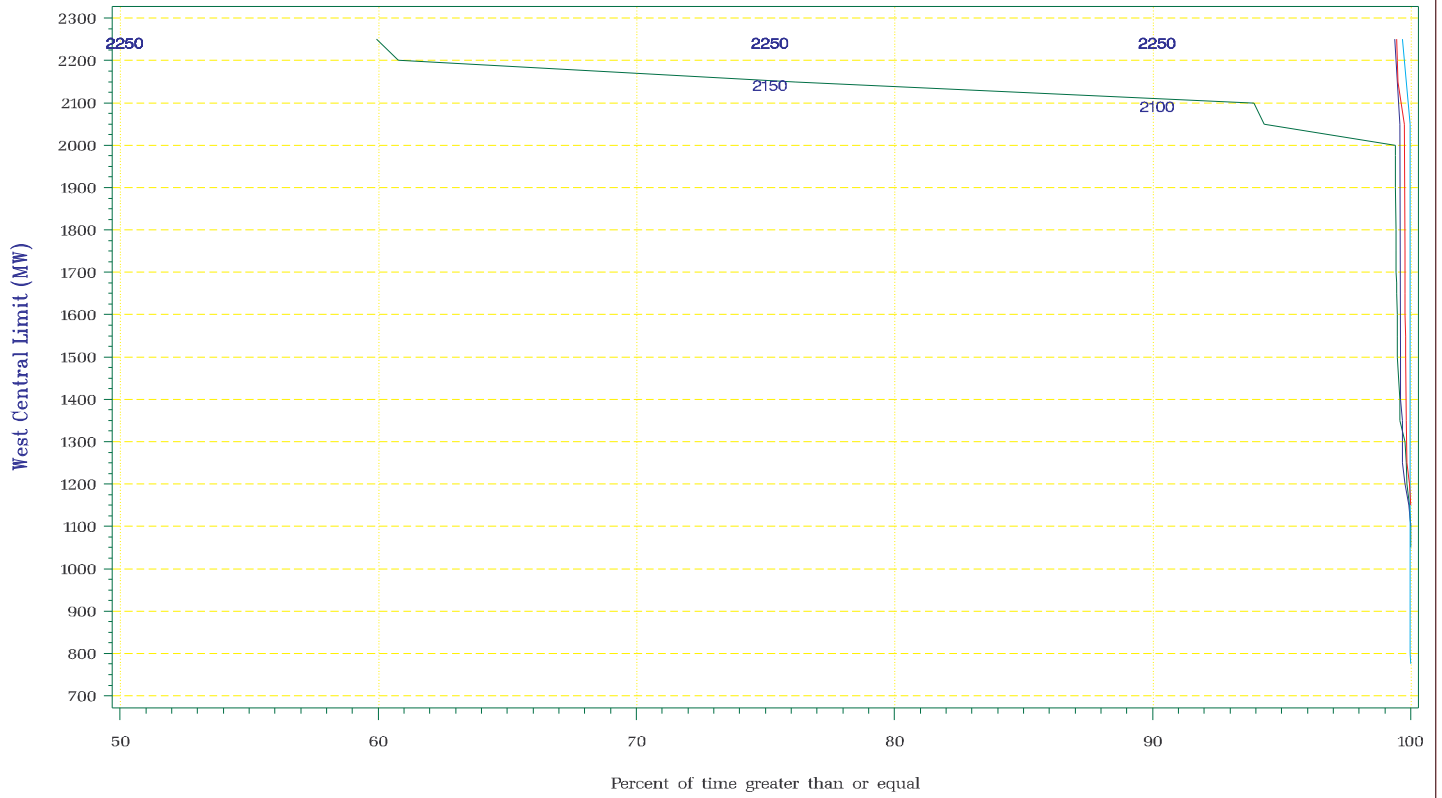
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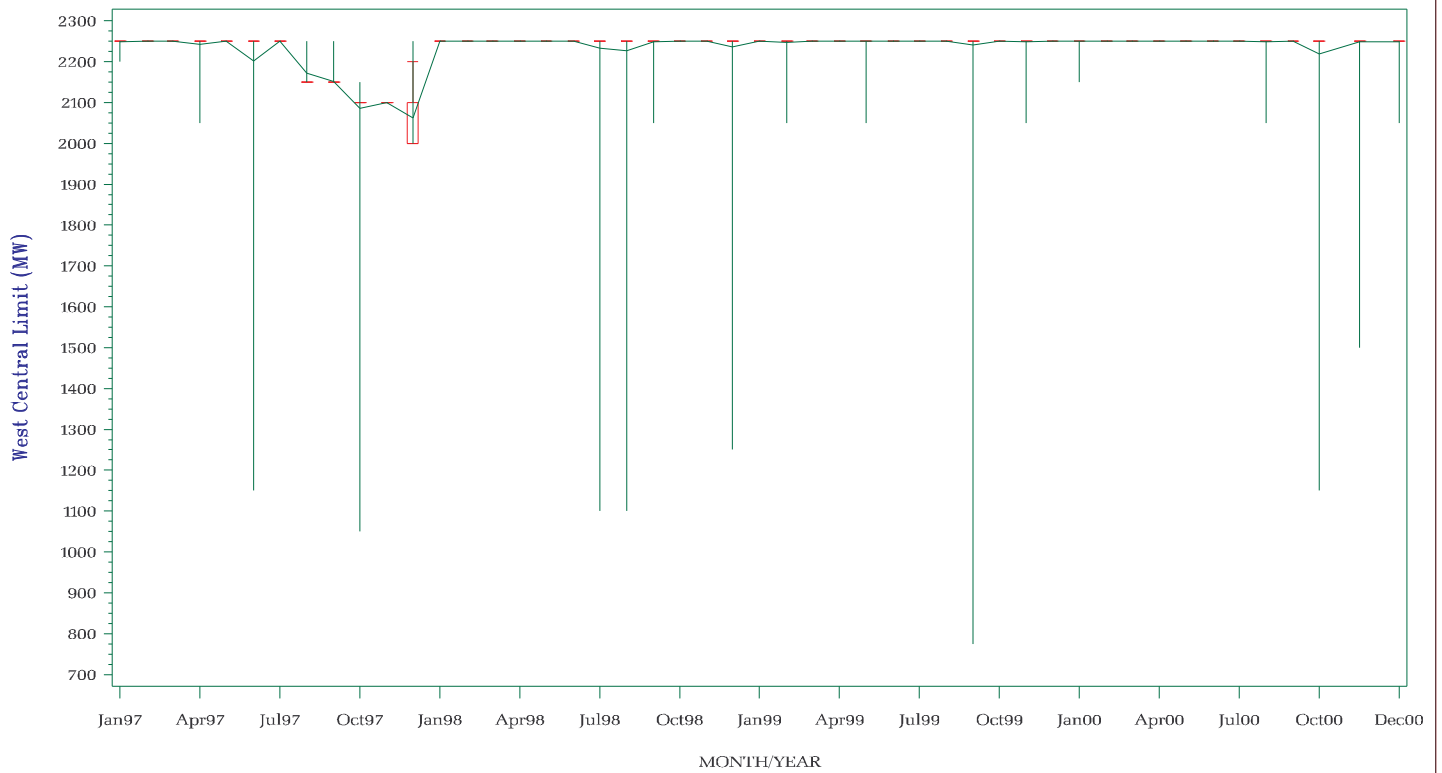
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1997 1998 1999 2000

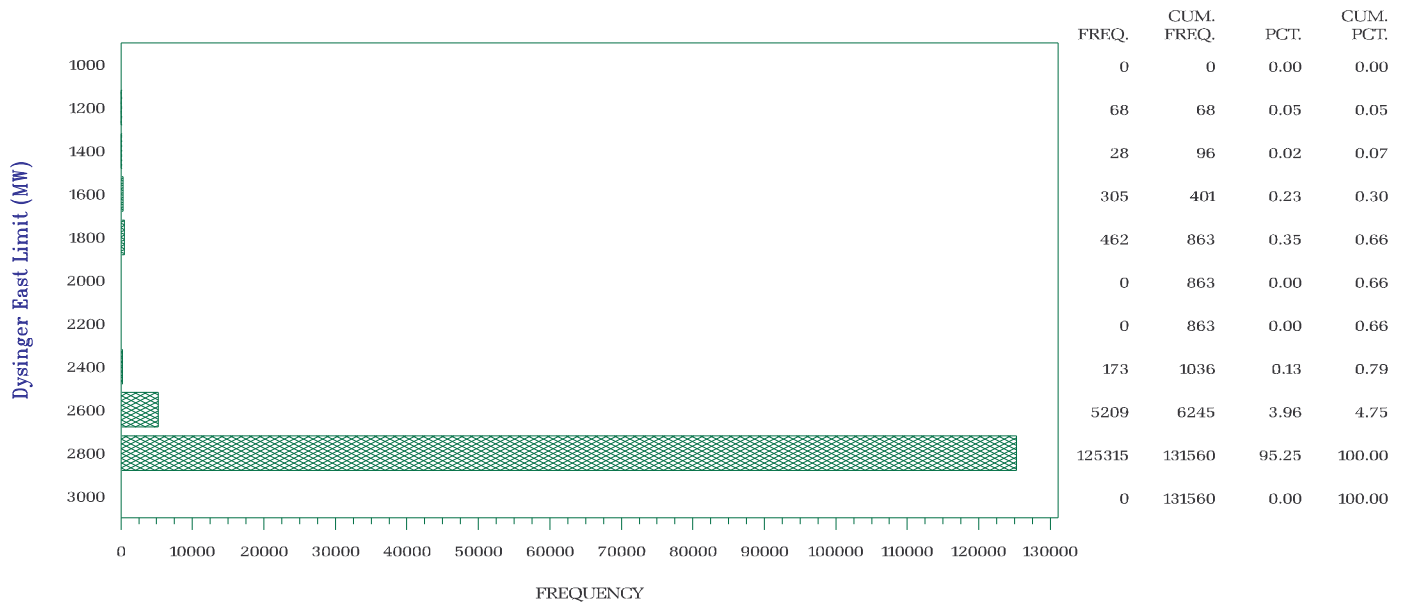
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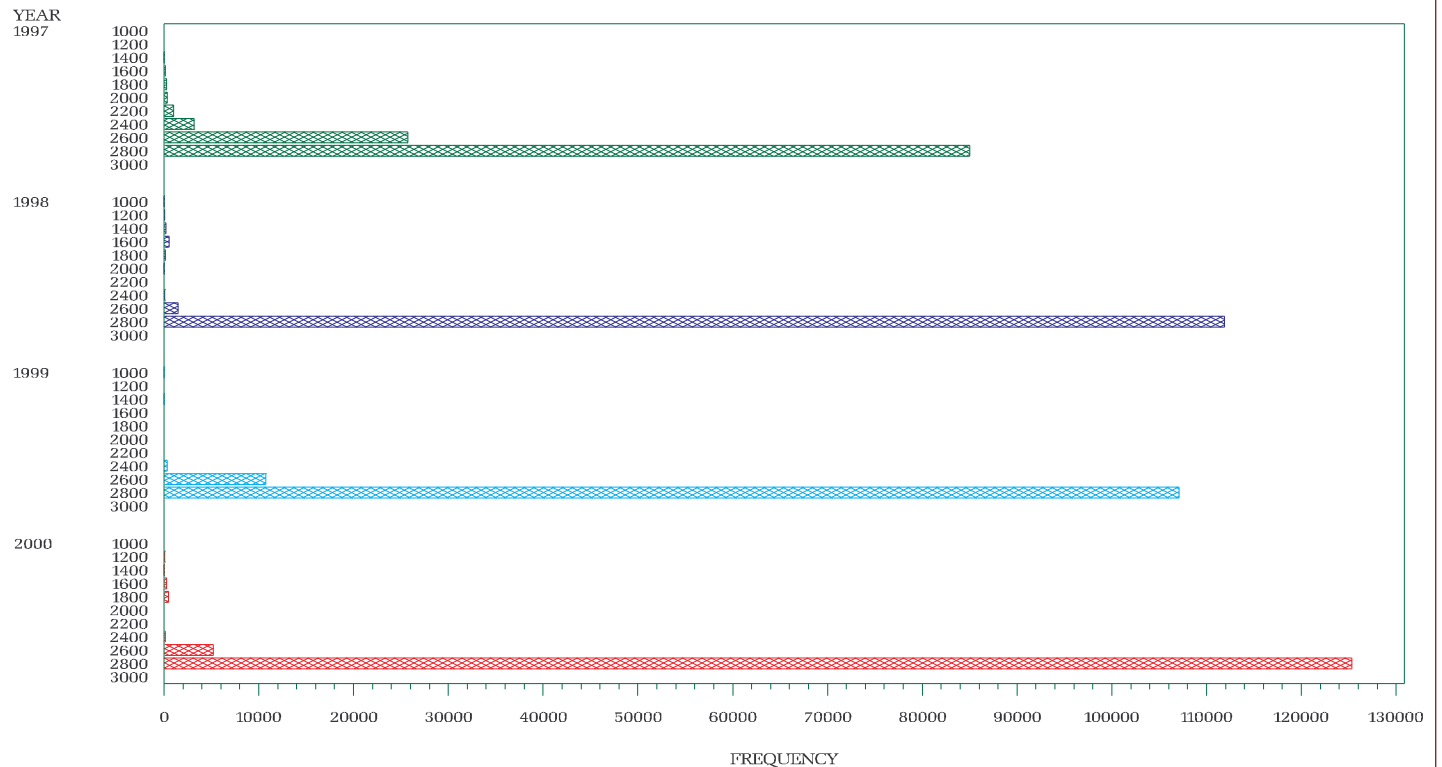
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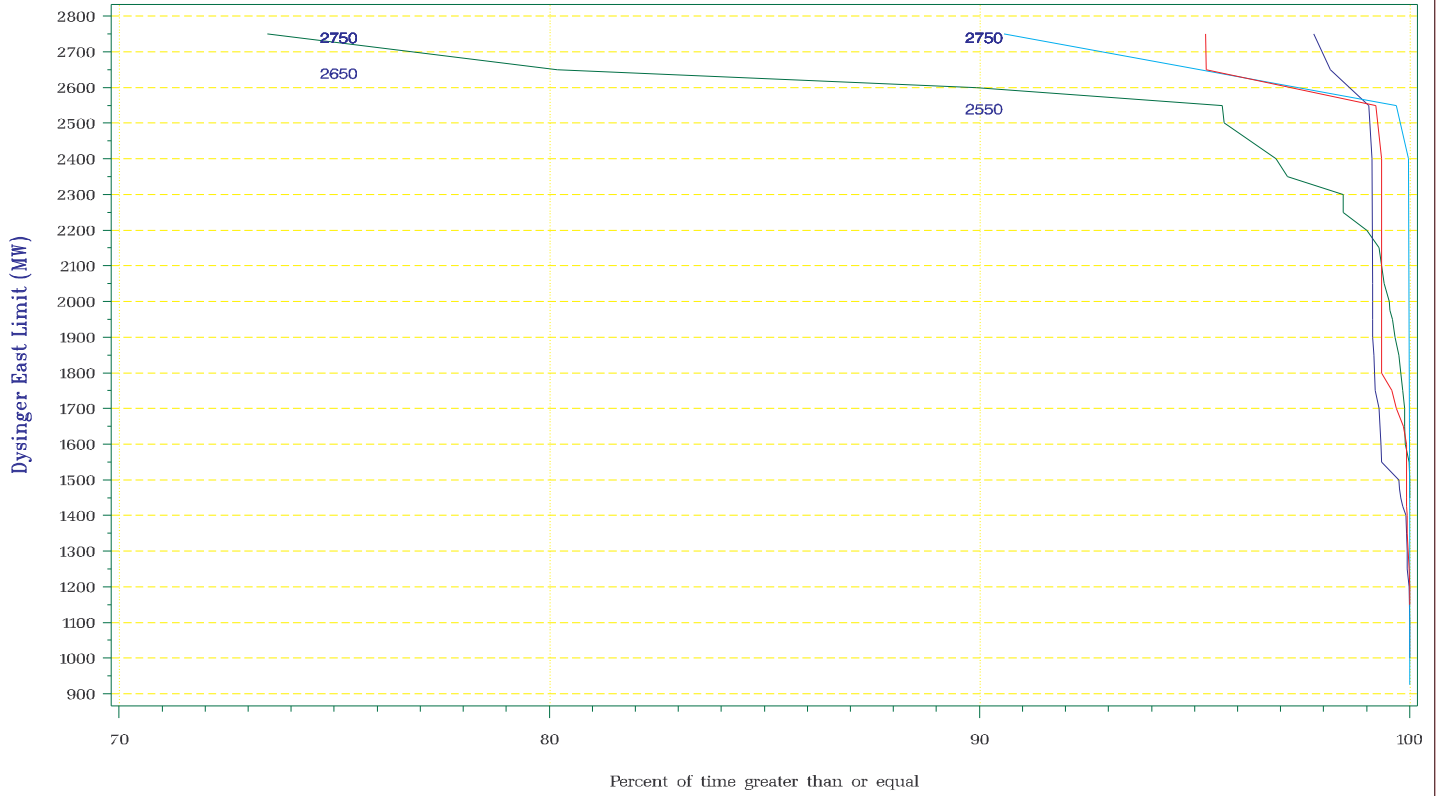
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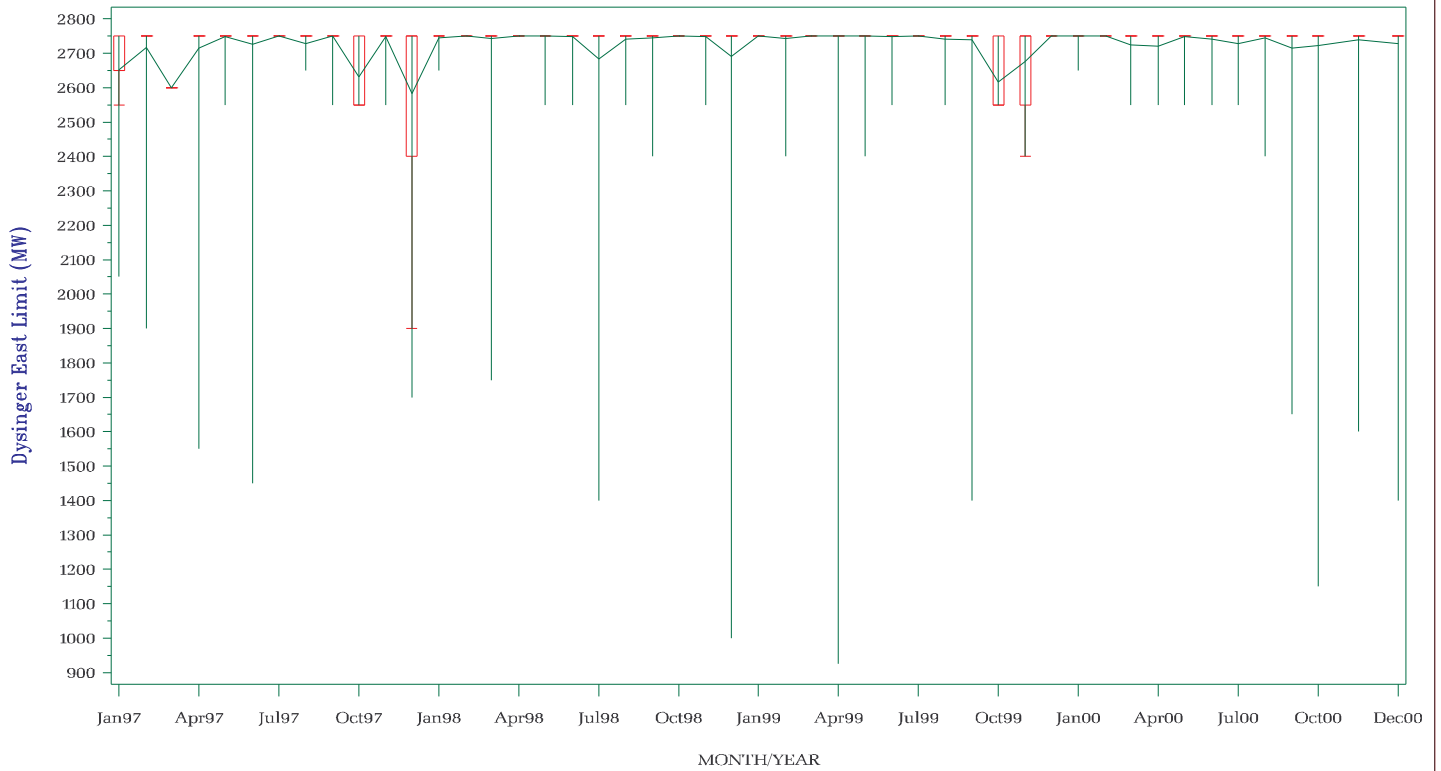
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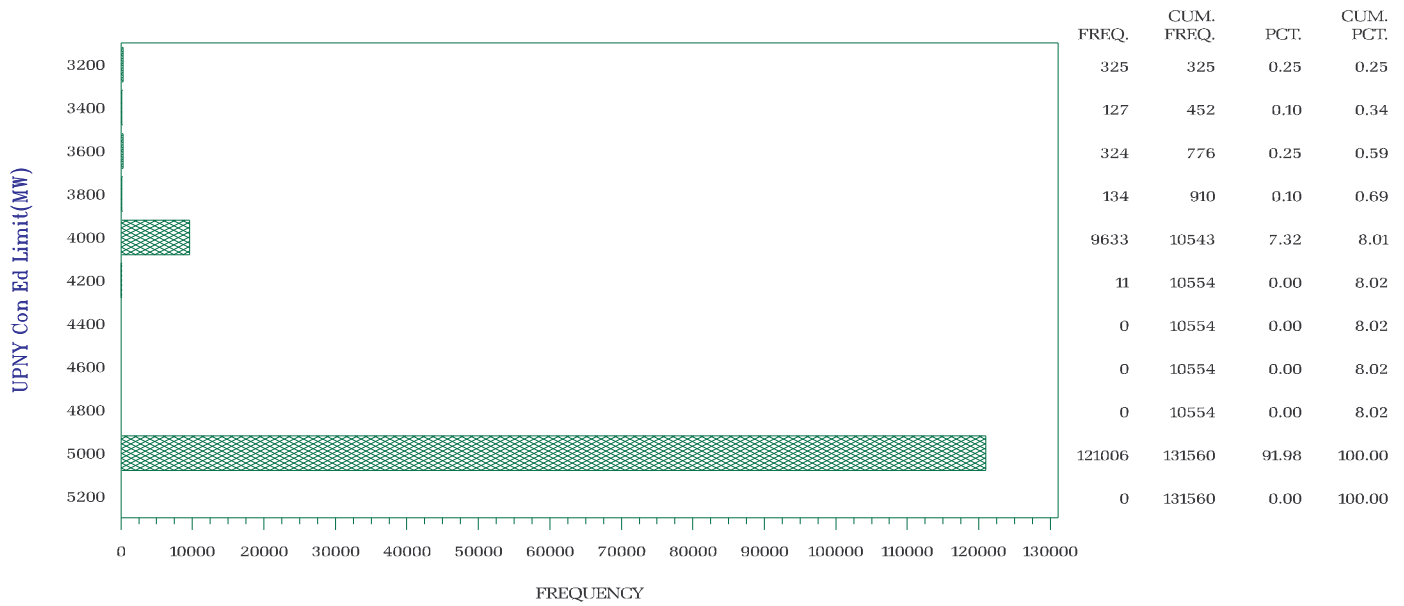
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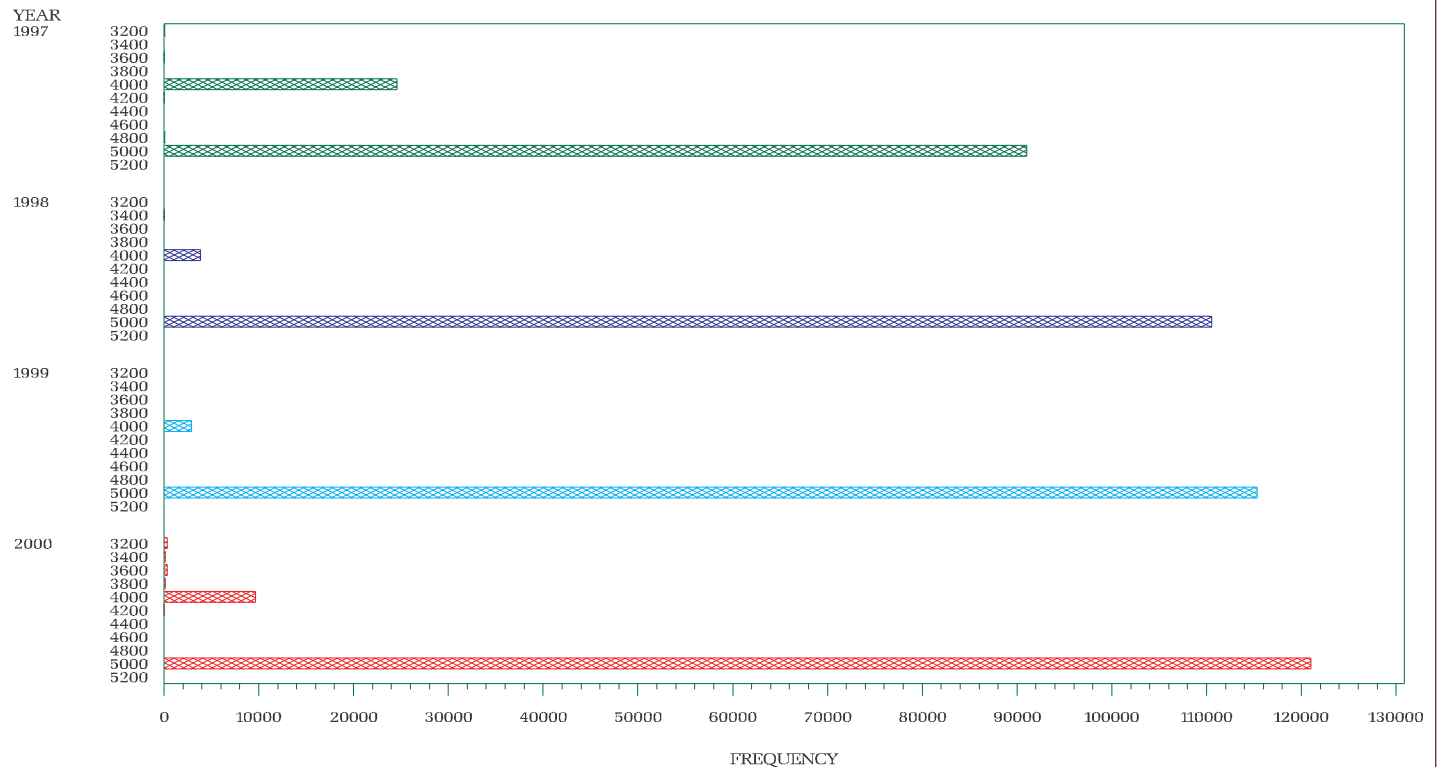
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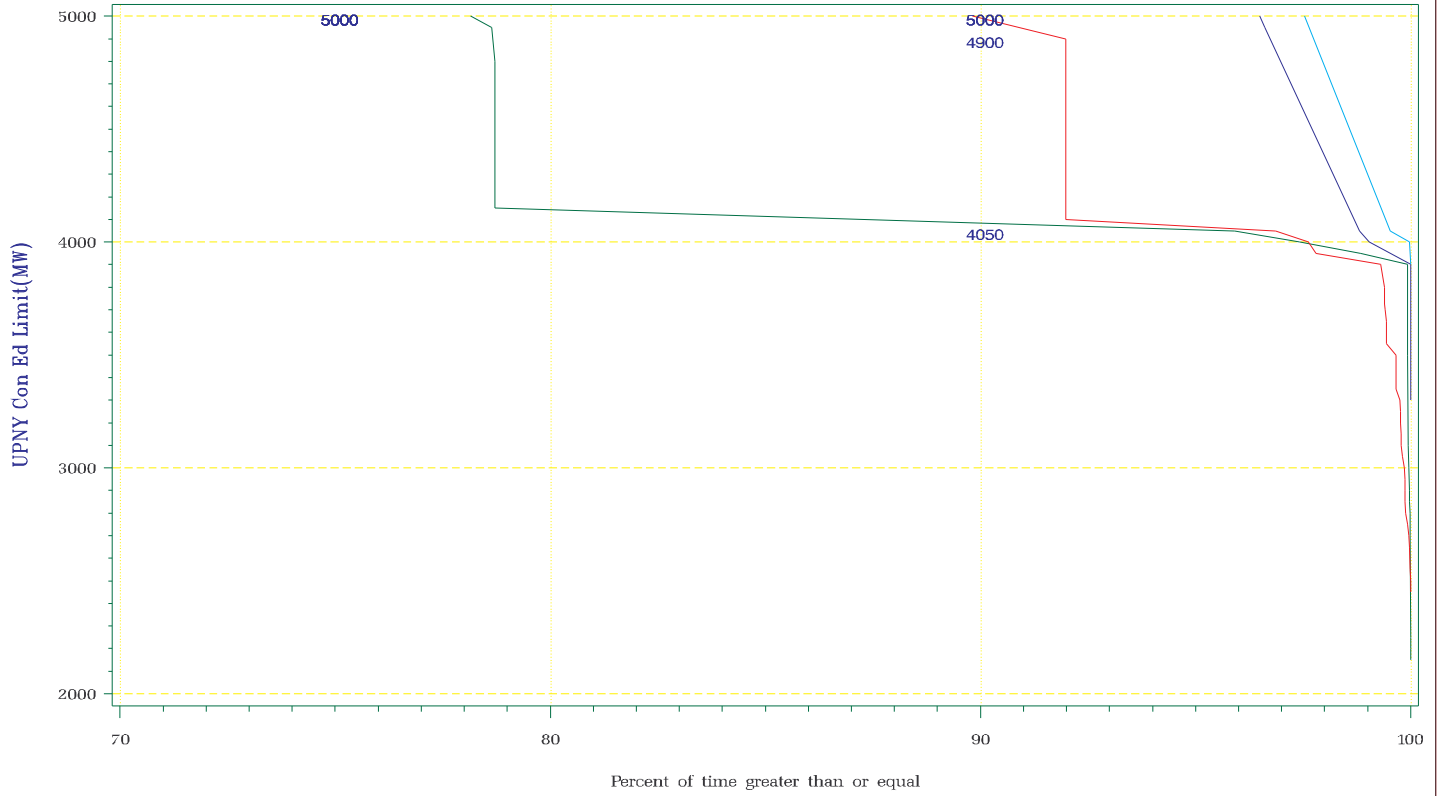
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1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

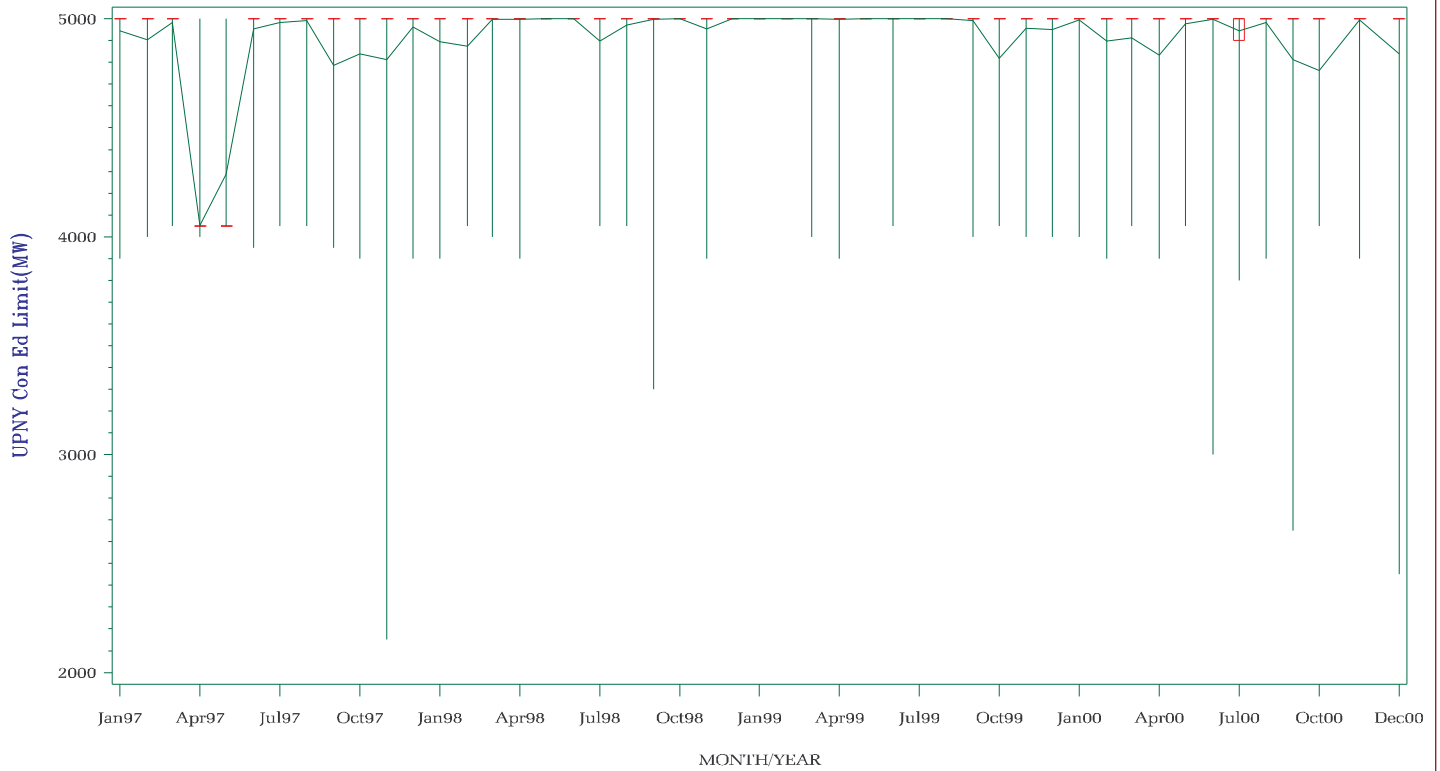
UPNY Con Ed Limit



1997 1998 1999 2000

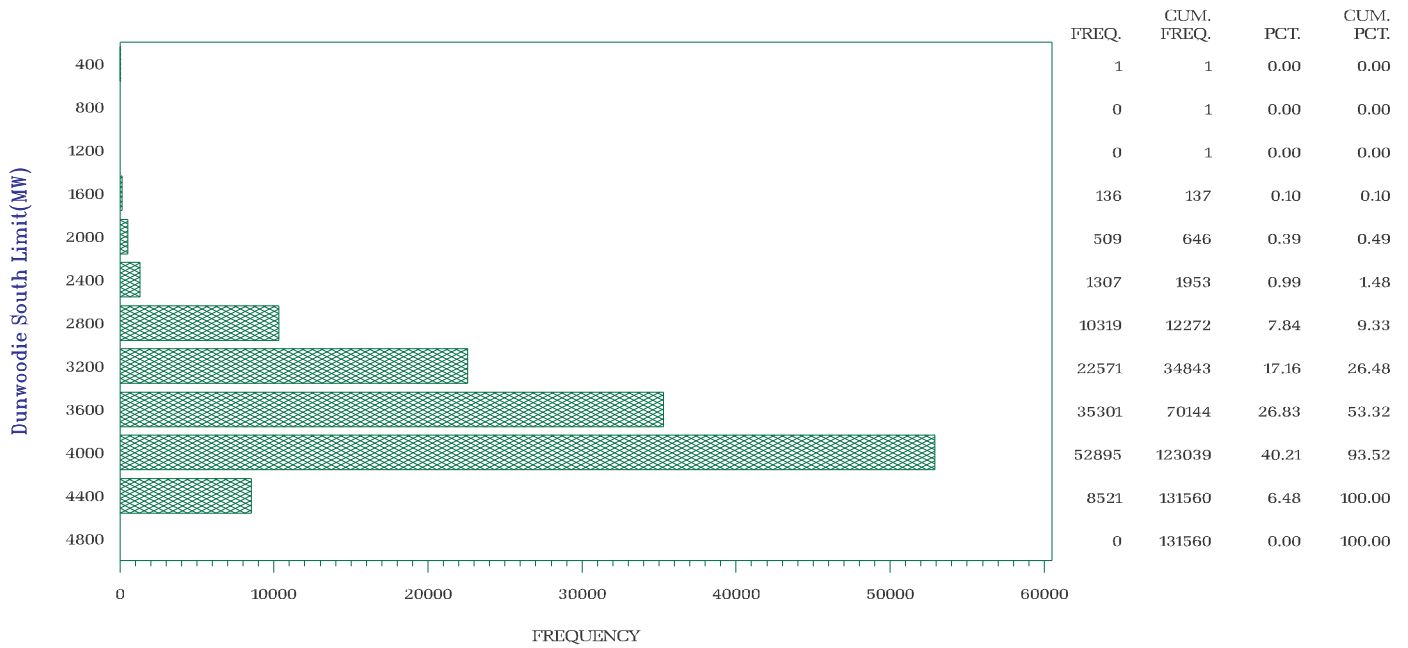
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

UPNY Con Ed Limit



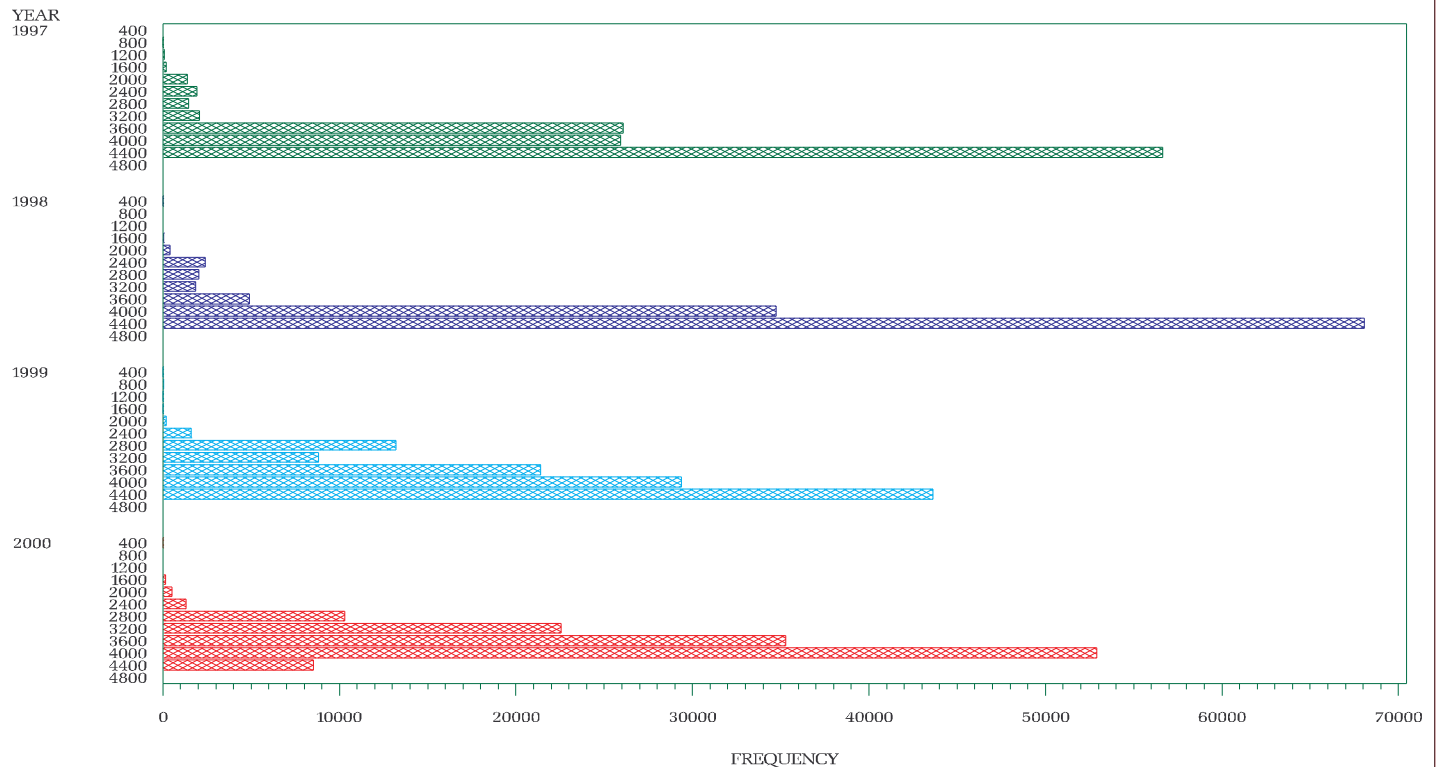
NYISO Transmission Use Statistics For January-December 2000

Dunwoodie South Limit



NYISO Transmission Use Statistics For January 1997-December 2000

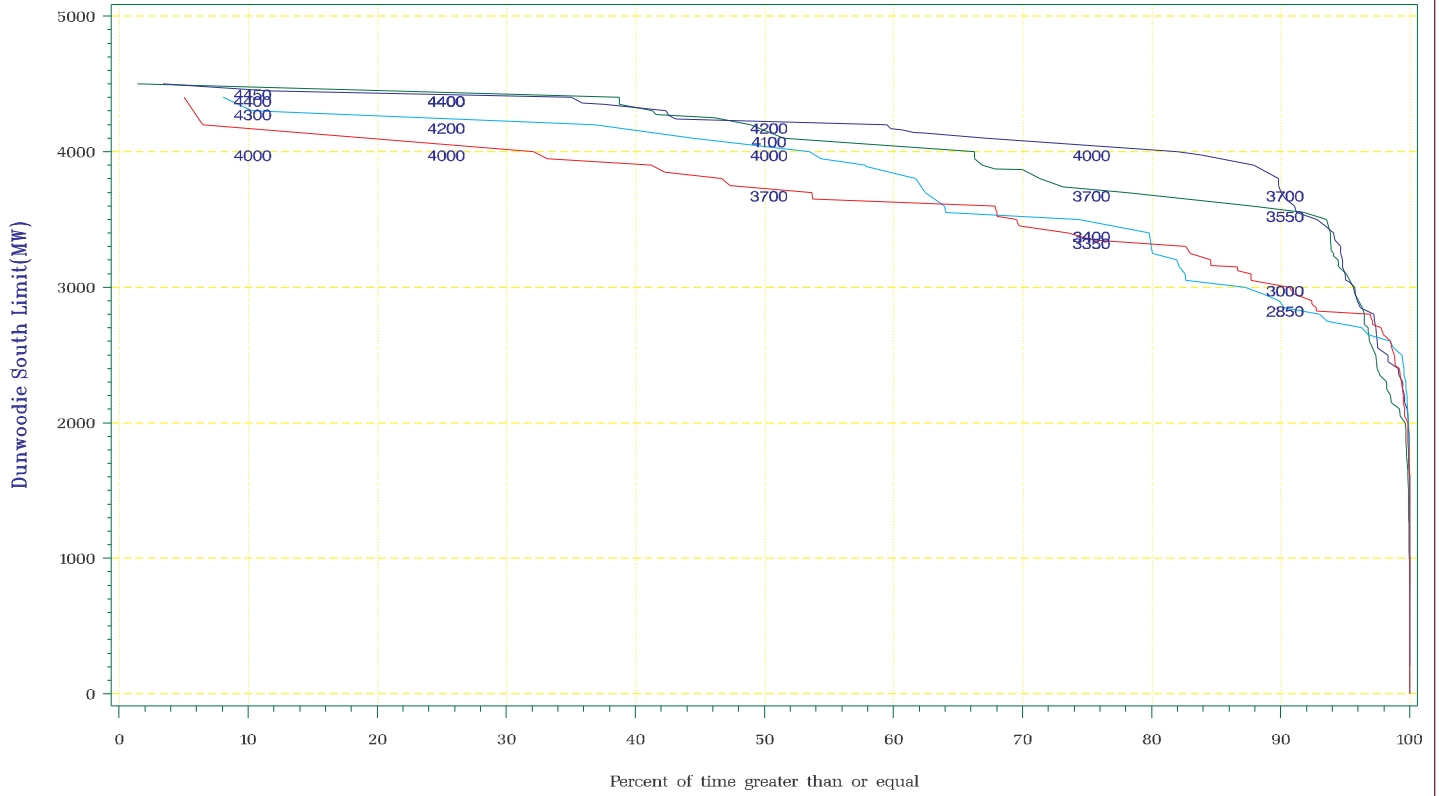
Dunwoodie South Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

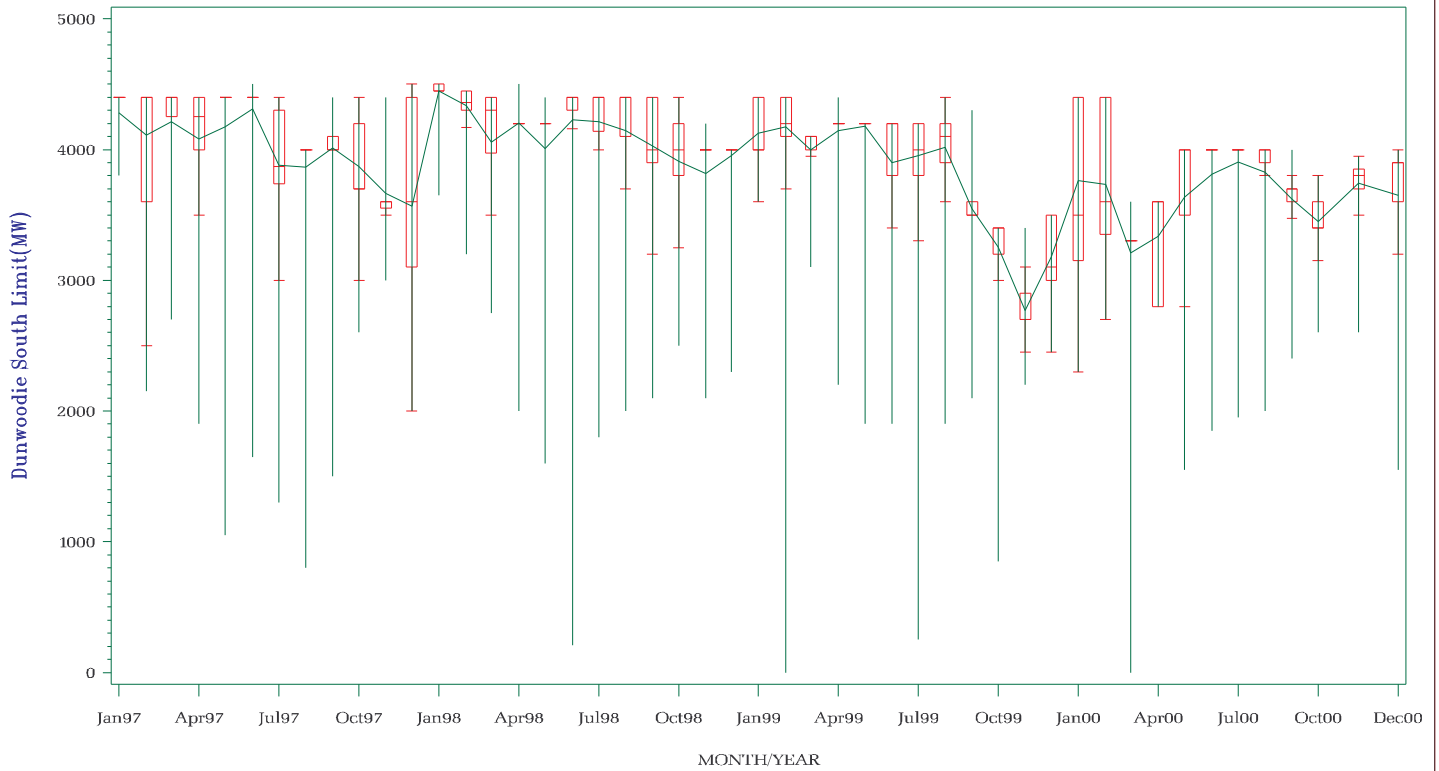
Dunwoodie South Limit



1997 1998 1999 2000

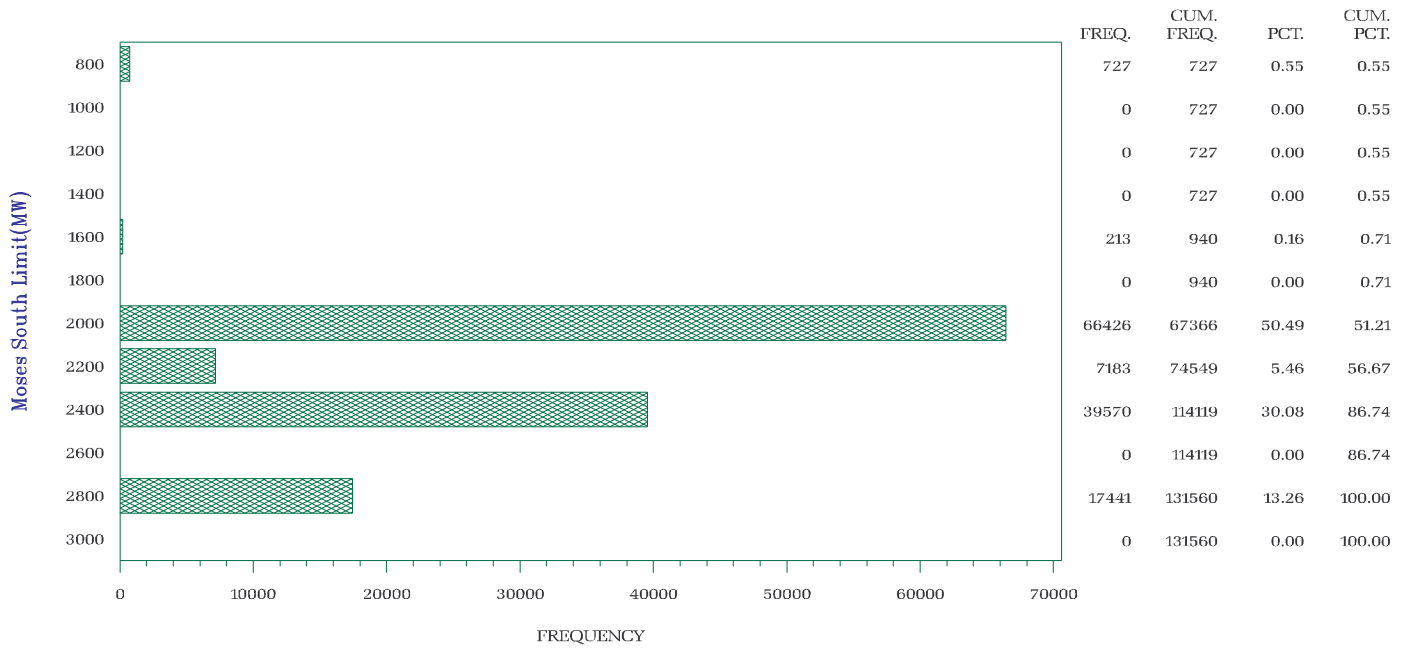
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

Dunwoodie South Limit



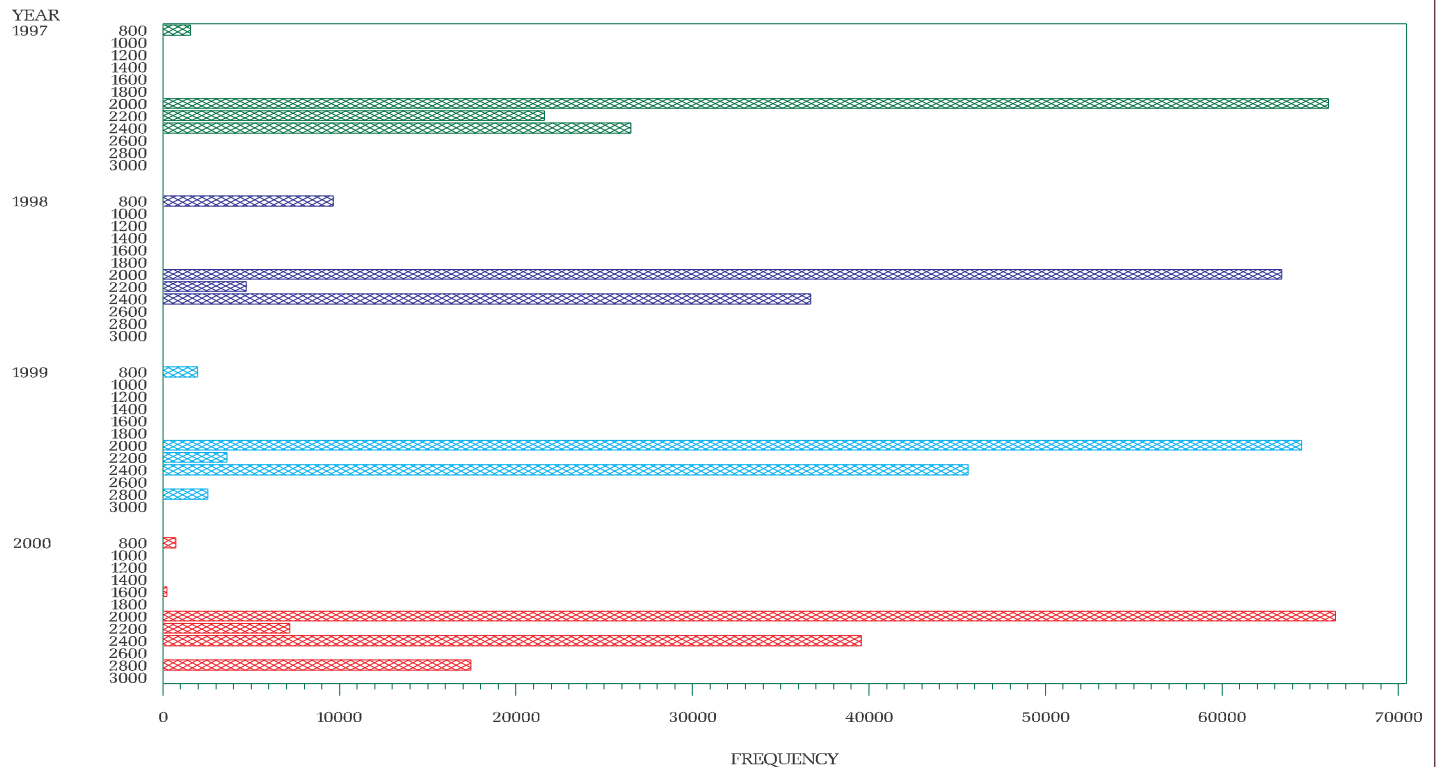
NYISO Transmission Use Statistics For January-December 2000

Moses South Limit



NYISO Transmission Use Statistics For January 1997-December 2000

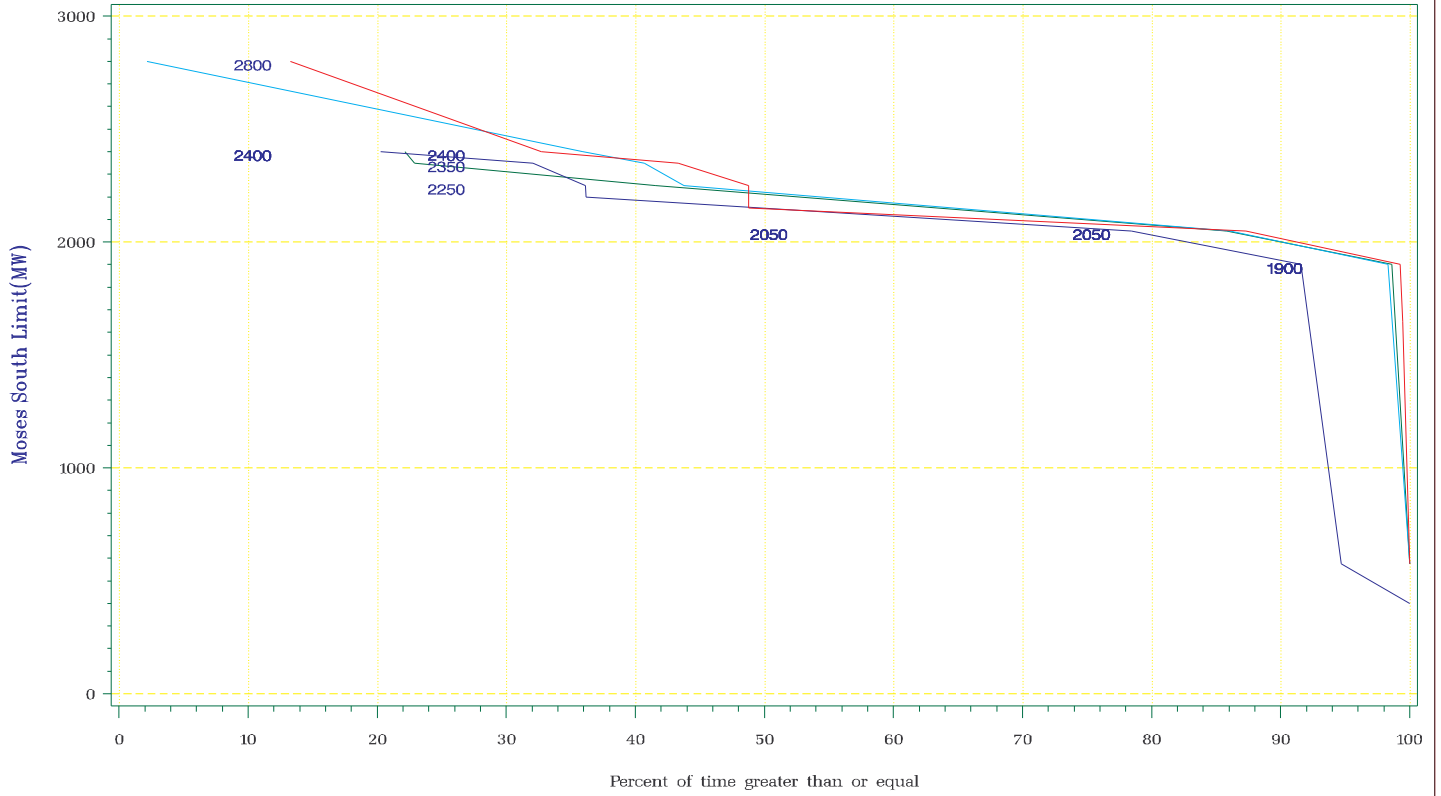
Moses South Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

Moses South Limit



1997 1998 1999 2000

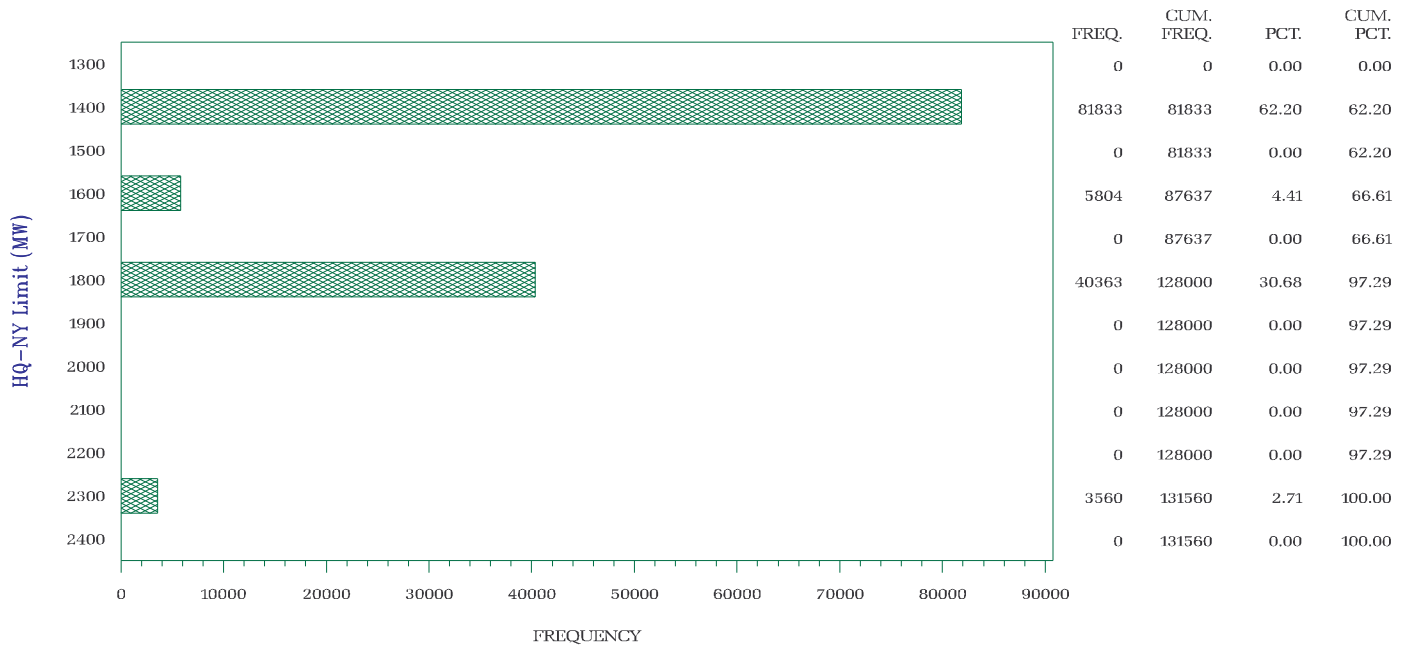
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

Moses South Limit



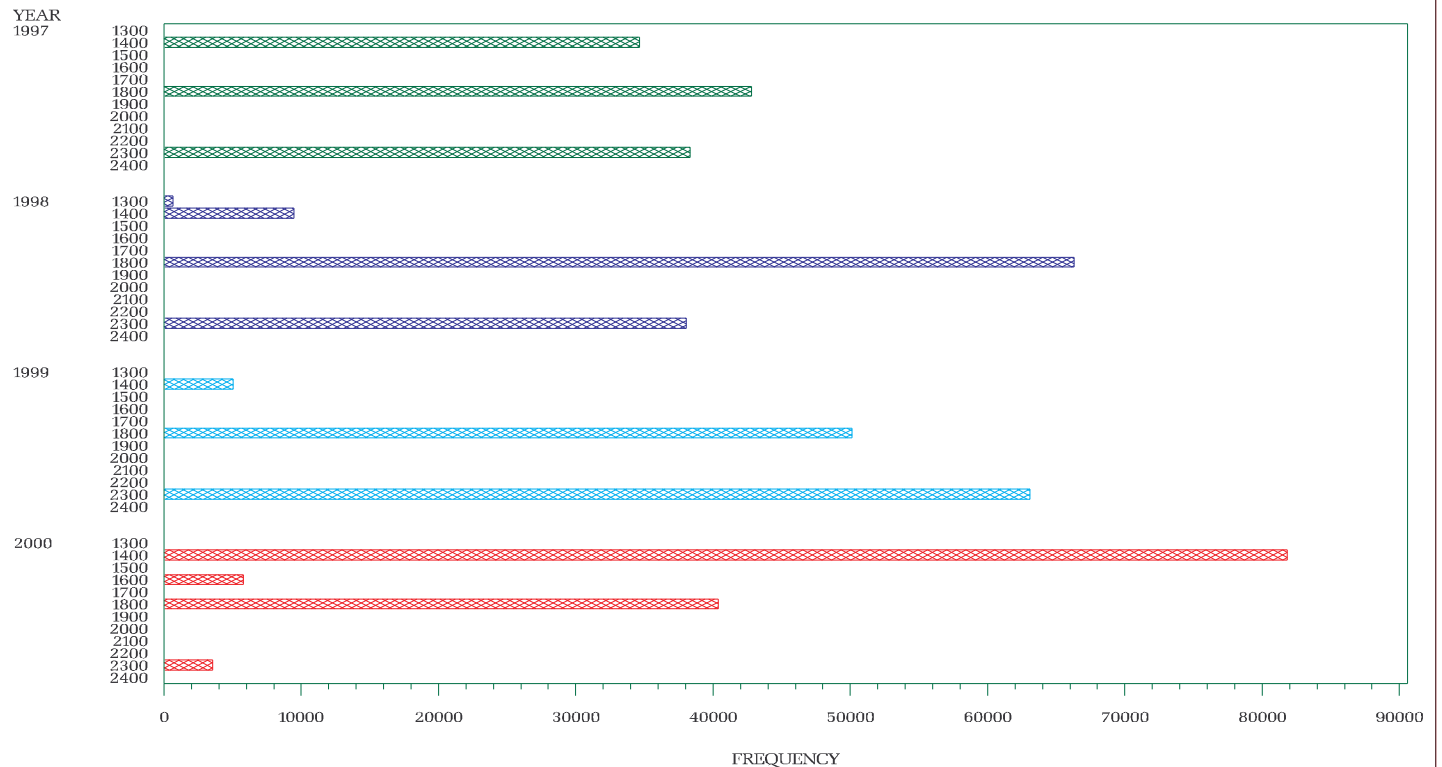
NYISO Transmission Use Statistics For January-December 2000

HQ-NY Limit



NYISO Transmission Use Statistics For January 1997-December 2000

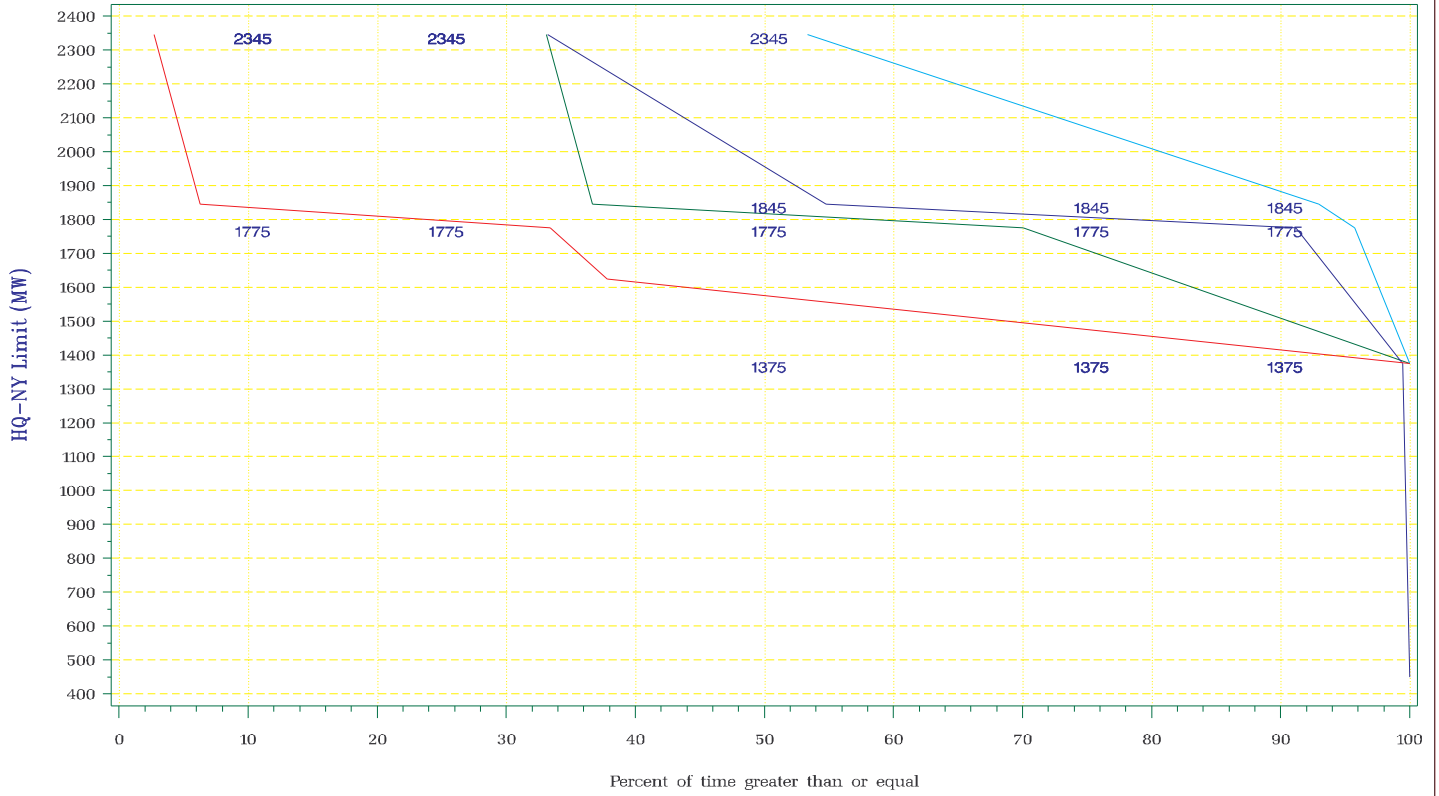
HQ-NY Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

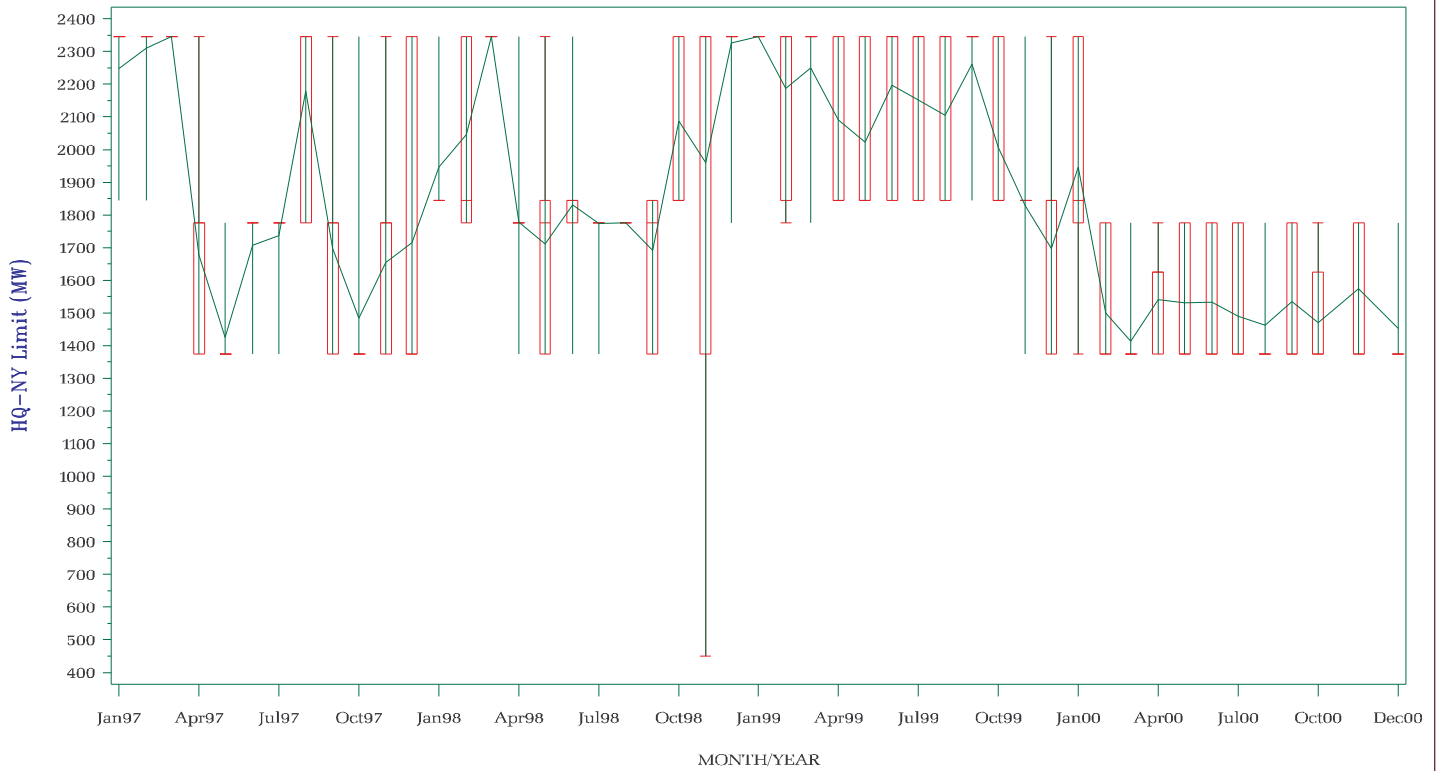
HQ-NY Limit



1997 1998 1999 2000

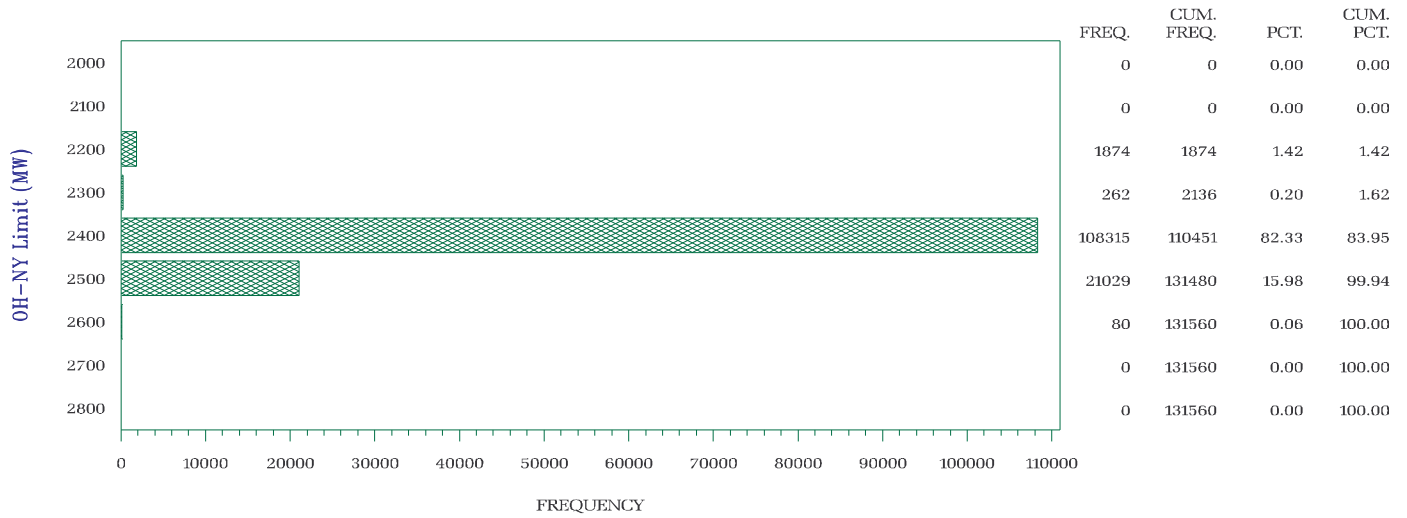
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

HQ-NY Limit



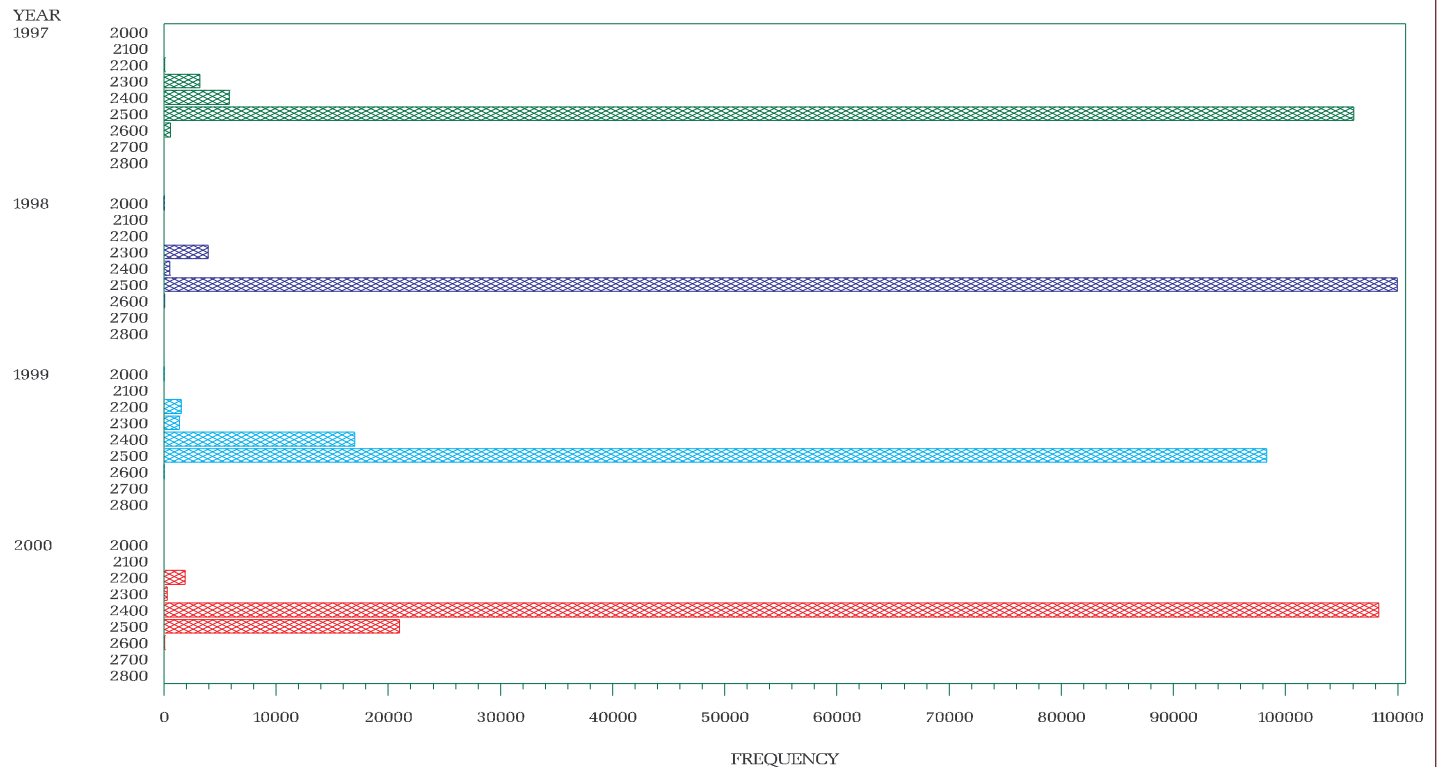
NYISO Transmission Use Statistics For January–December 2000

OH–NY Limit



NYISO Transmission Use Statistics For January 1997–December 2000

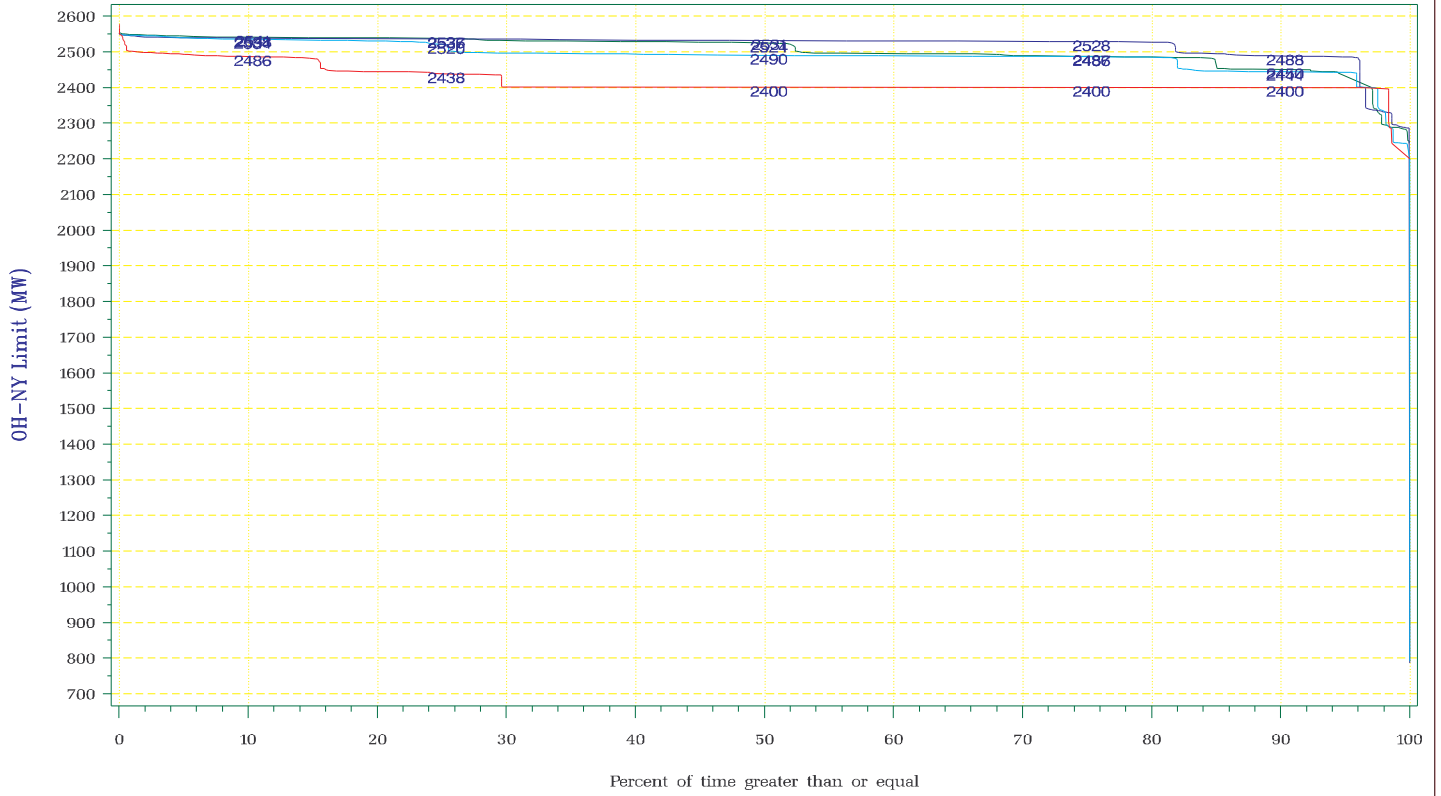
OH–NY Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

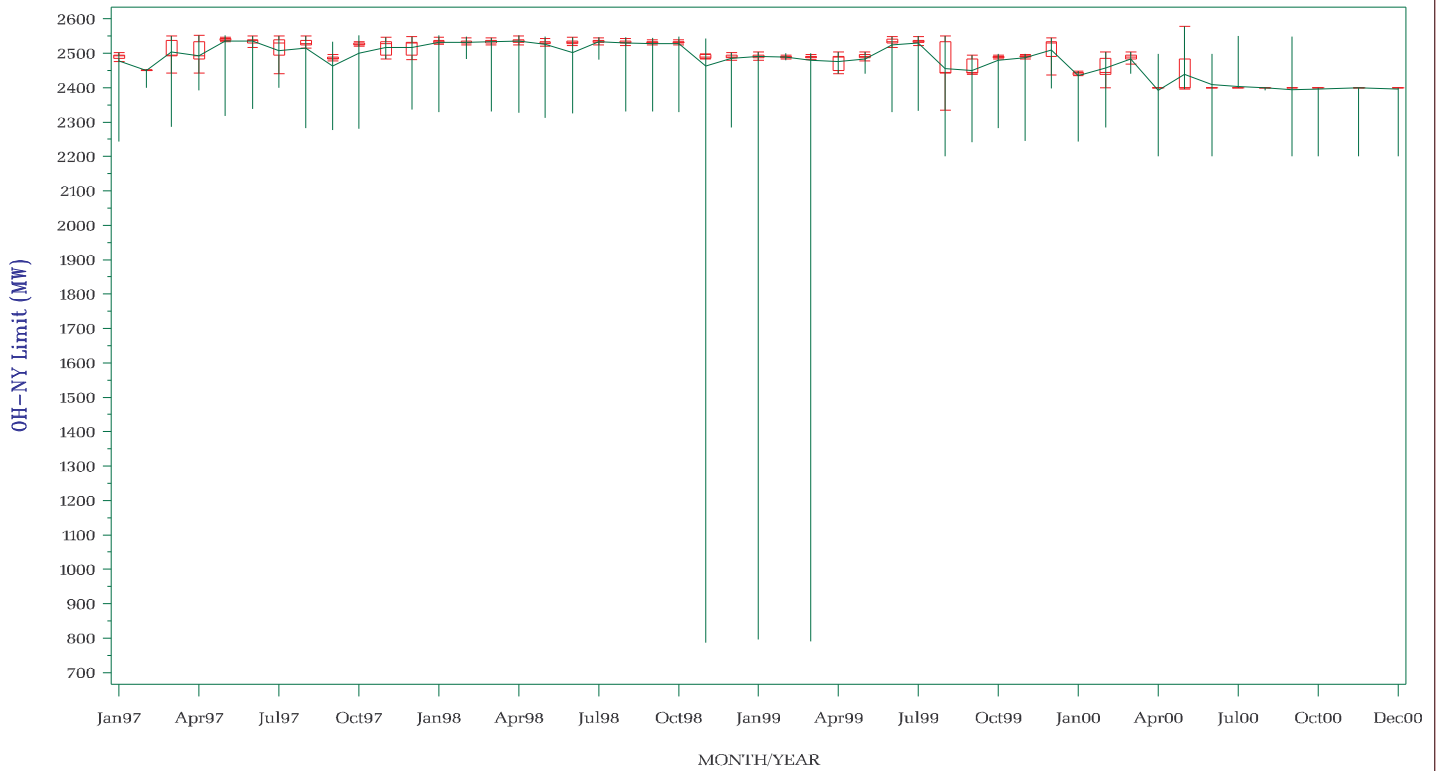
OH-NY Limit



1997 1998 1999 2000

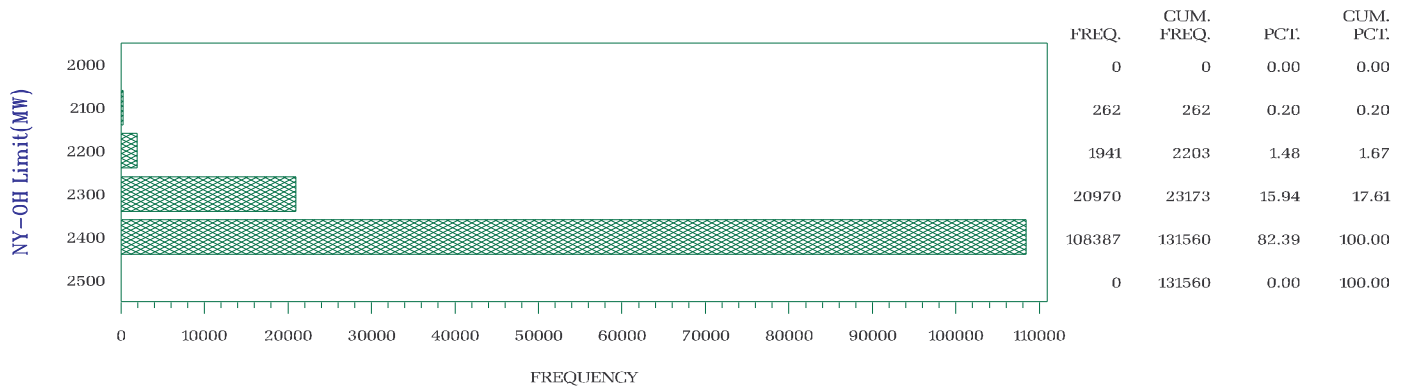
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

OH-NY Limit



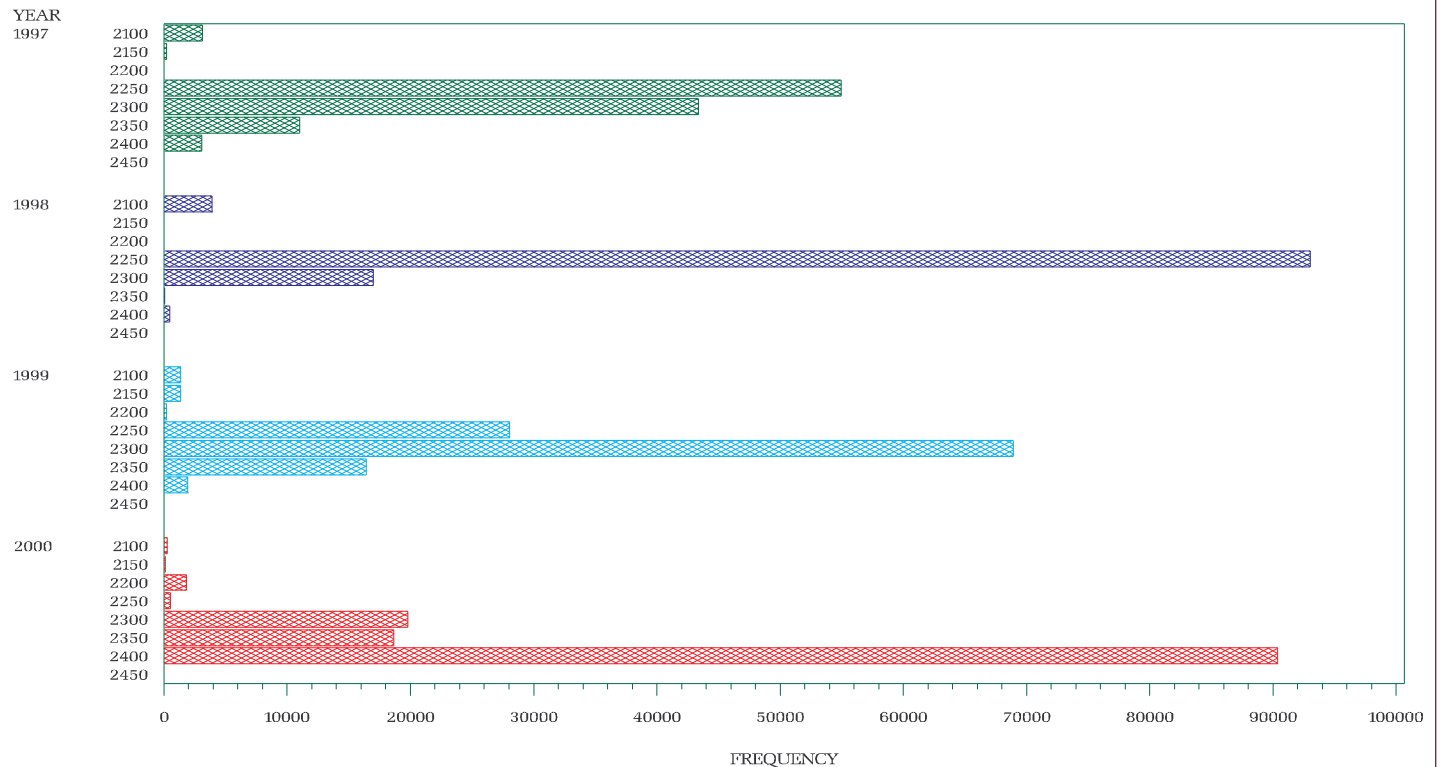
NYISO Transmission Use Statistics For January–December 2000

NY–OH Limit



NYISO Transmission Use Statistics For January 1997–December 2000

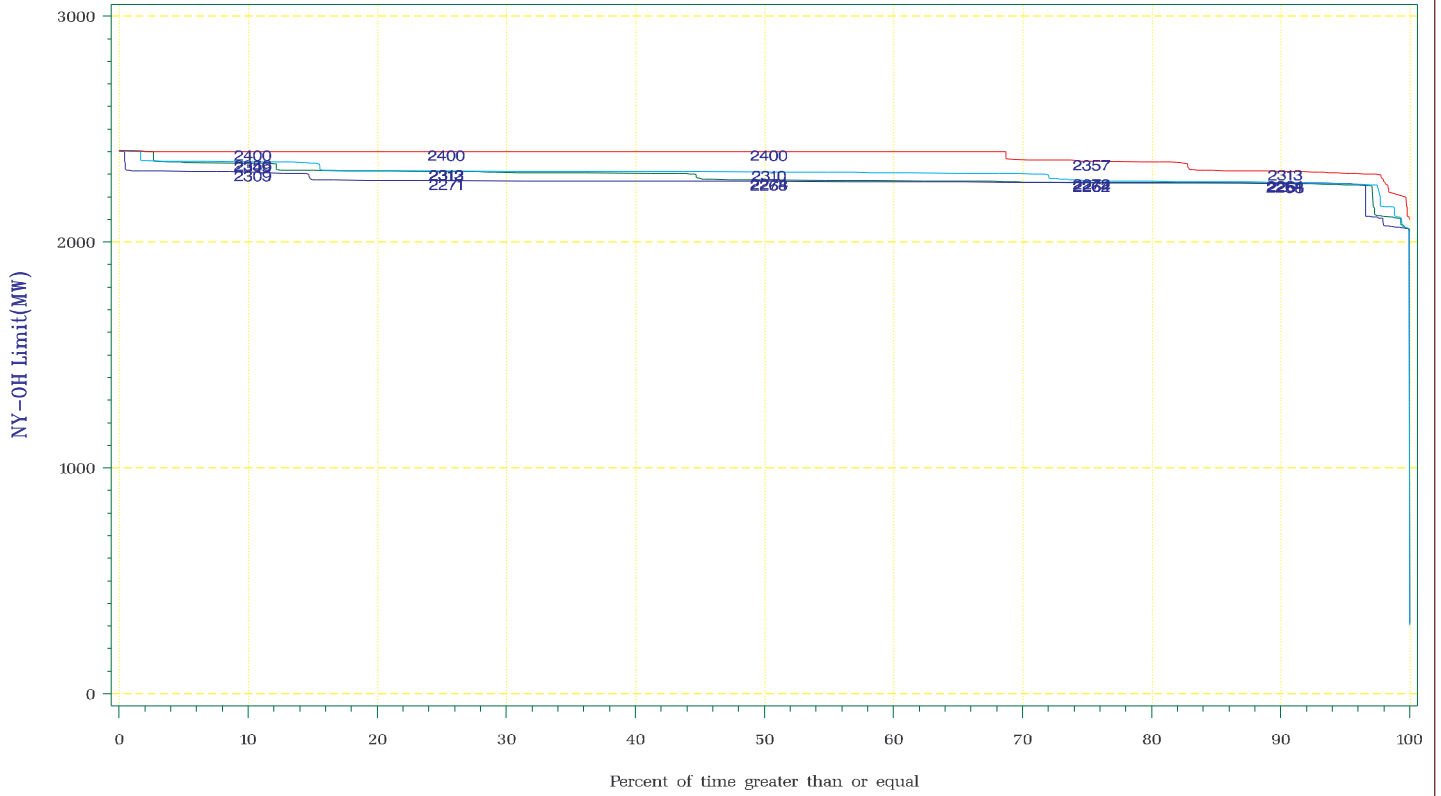
NY–OH Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

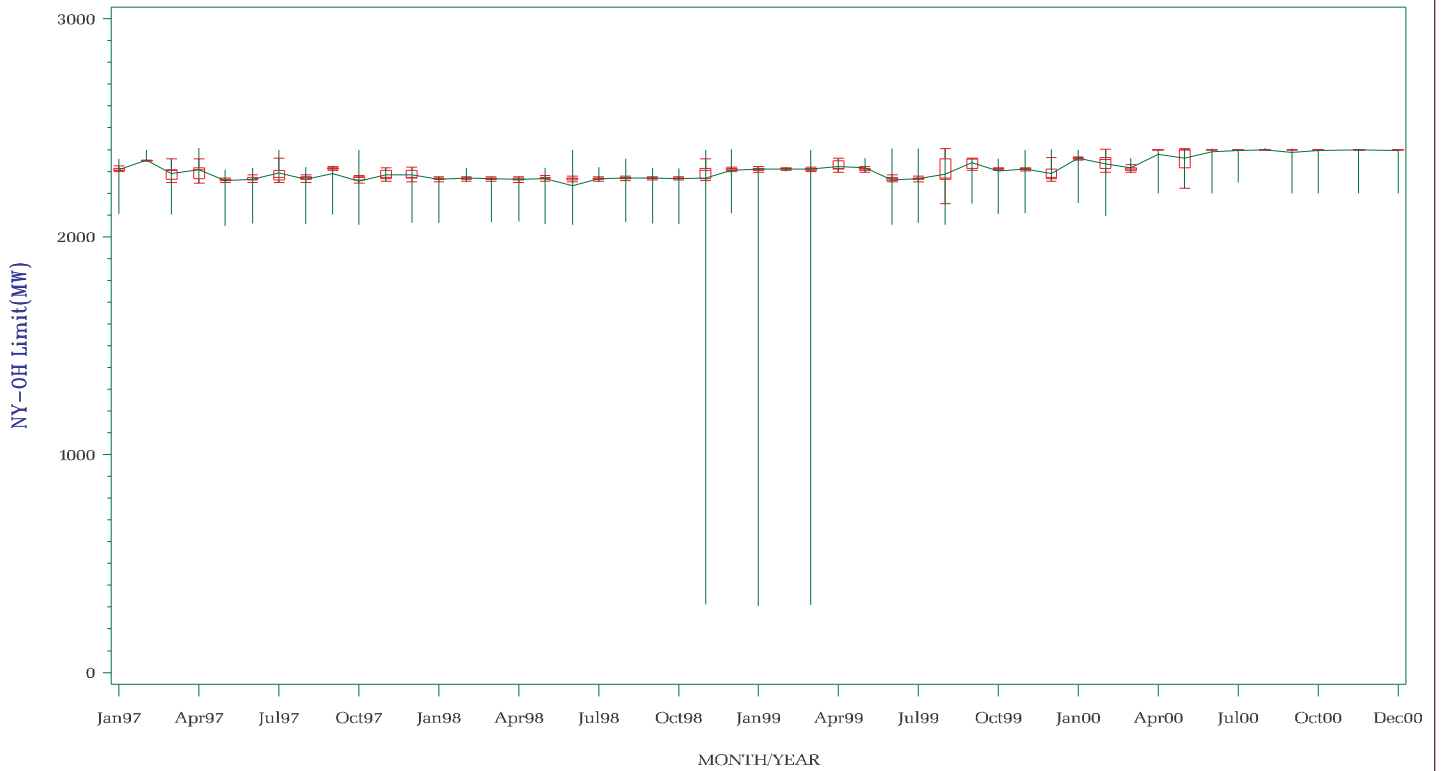
NY-OH Limit



1997 1998 1999 2000

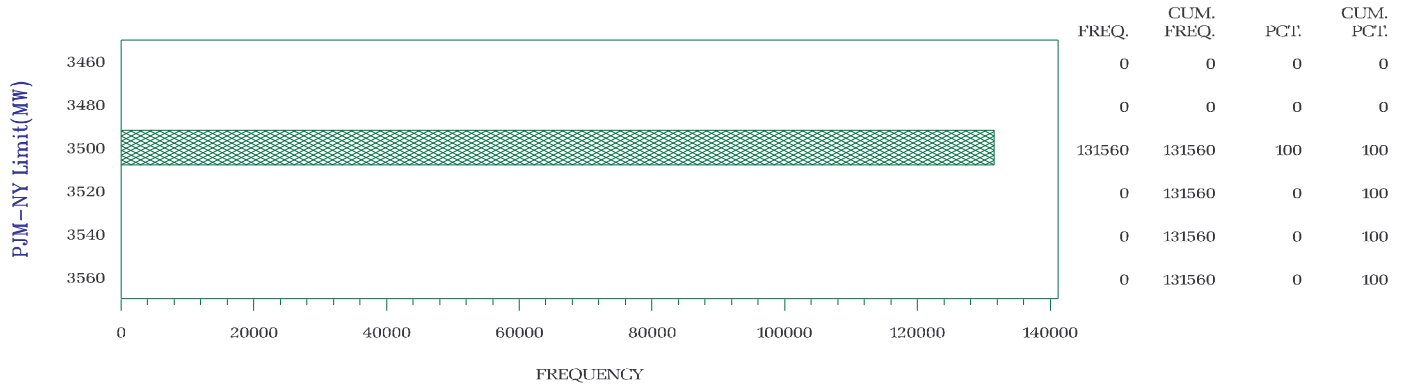
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

NY-OH Limit



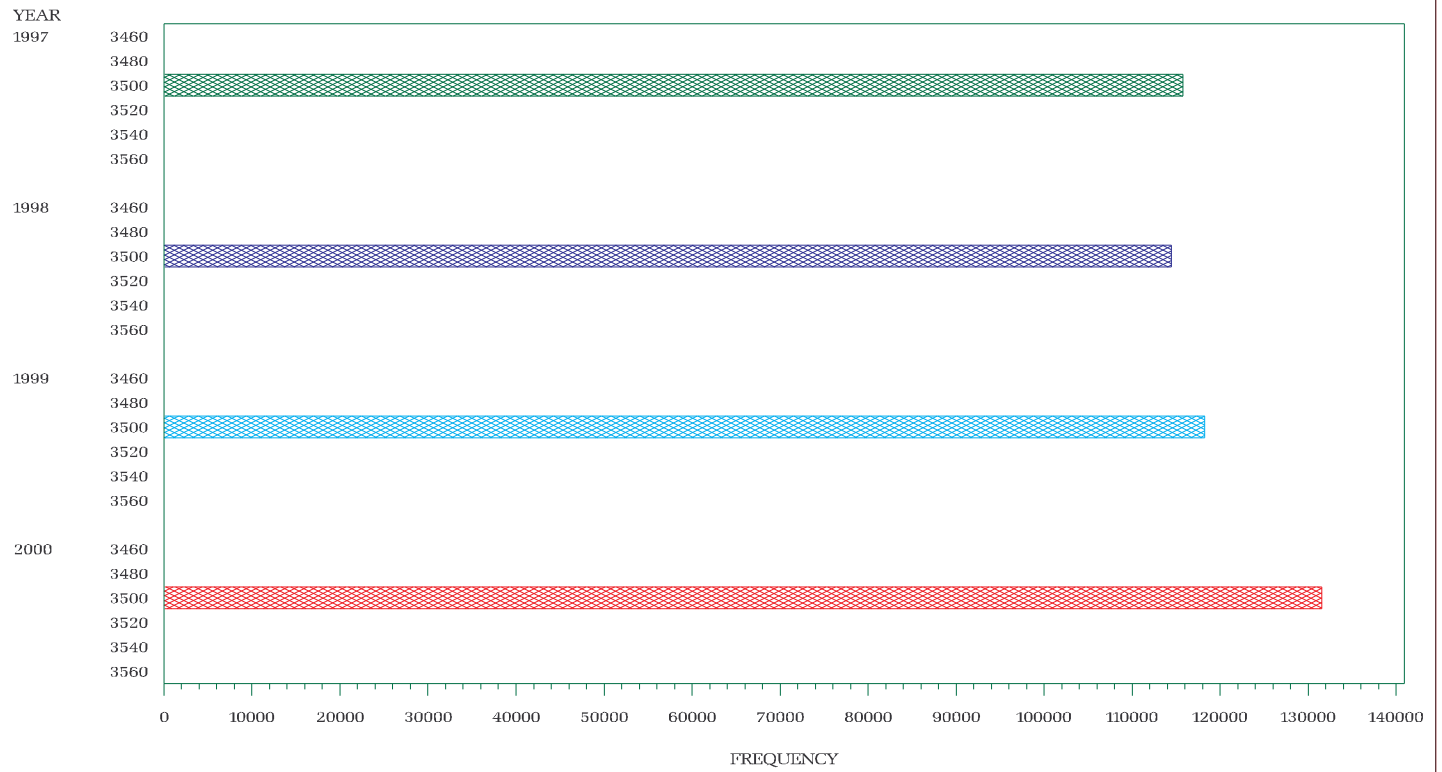
NYISO Transmission Use Statistics For January–December 2000

PJM–NY Limit



NYISO Transmission Use Statistics For January 1997–December 2000

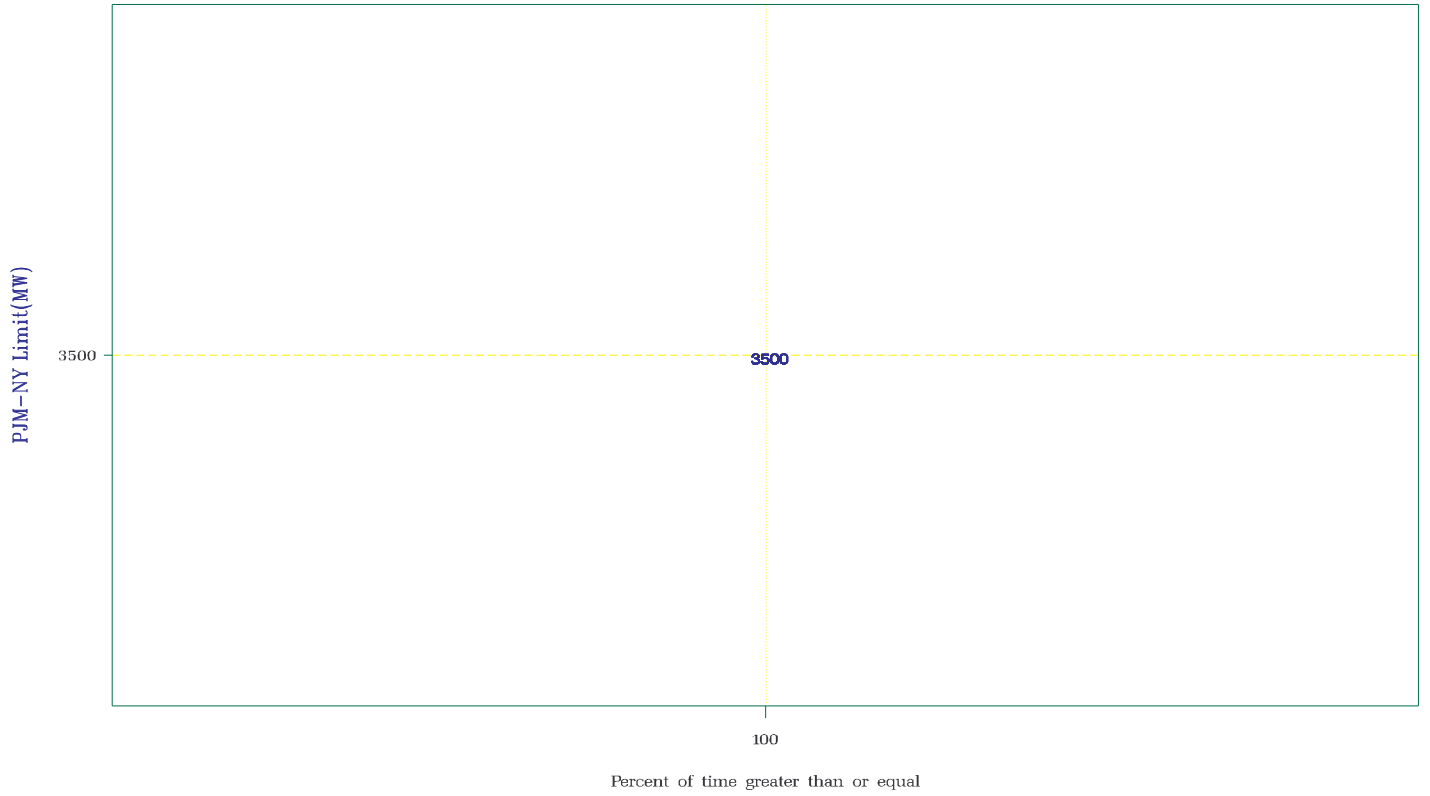
PJM–NY Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

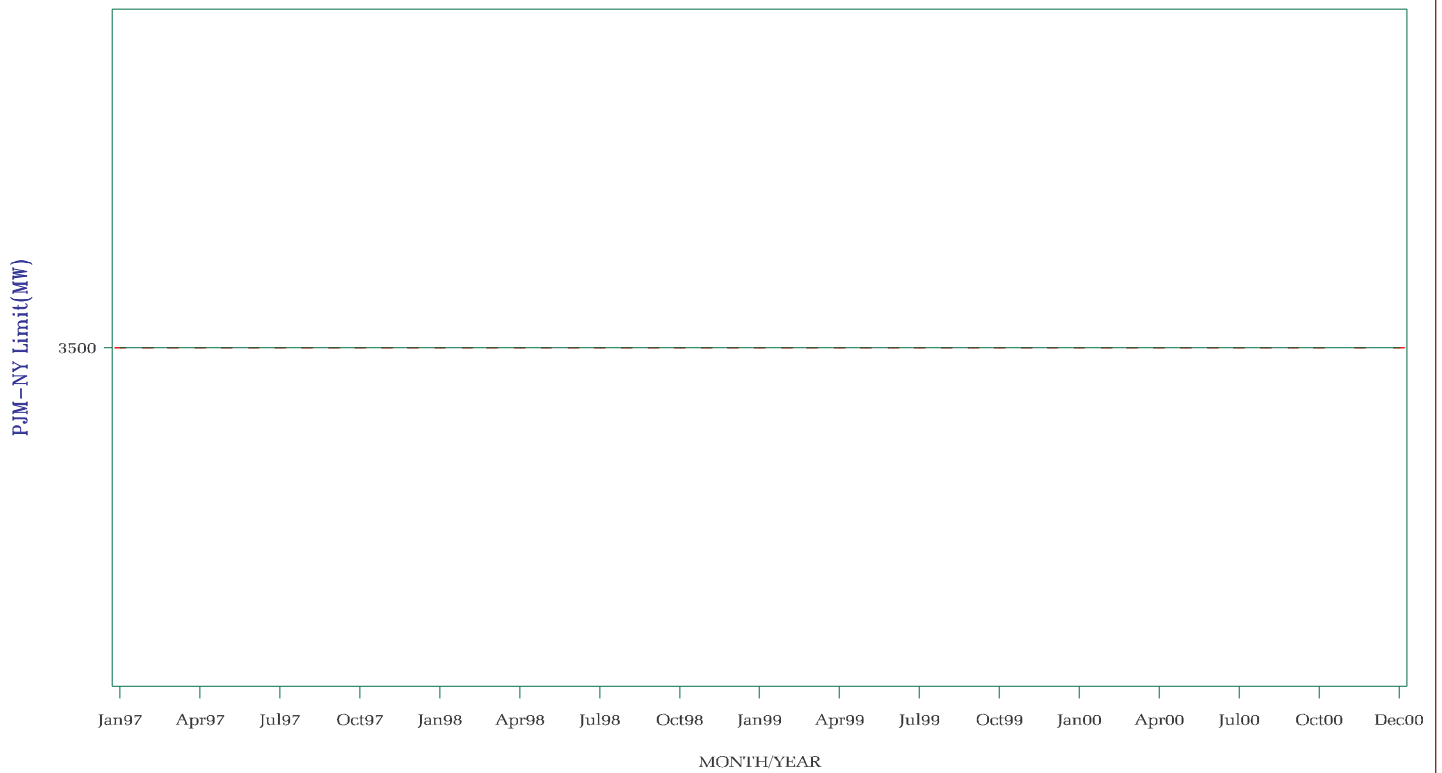
PJM – NY Limit



1997 1998 1999 2000

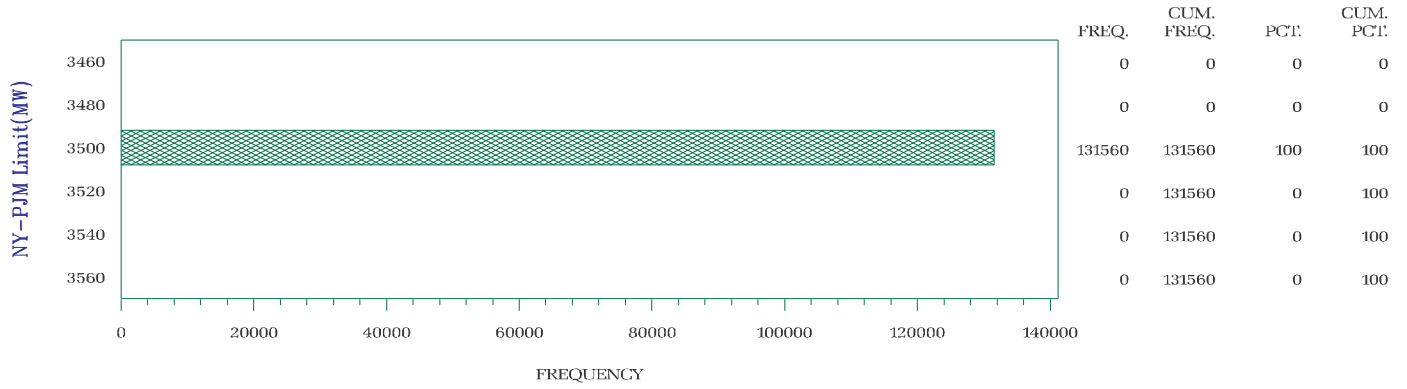
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

PJM – NY Limit



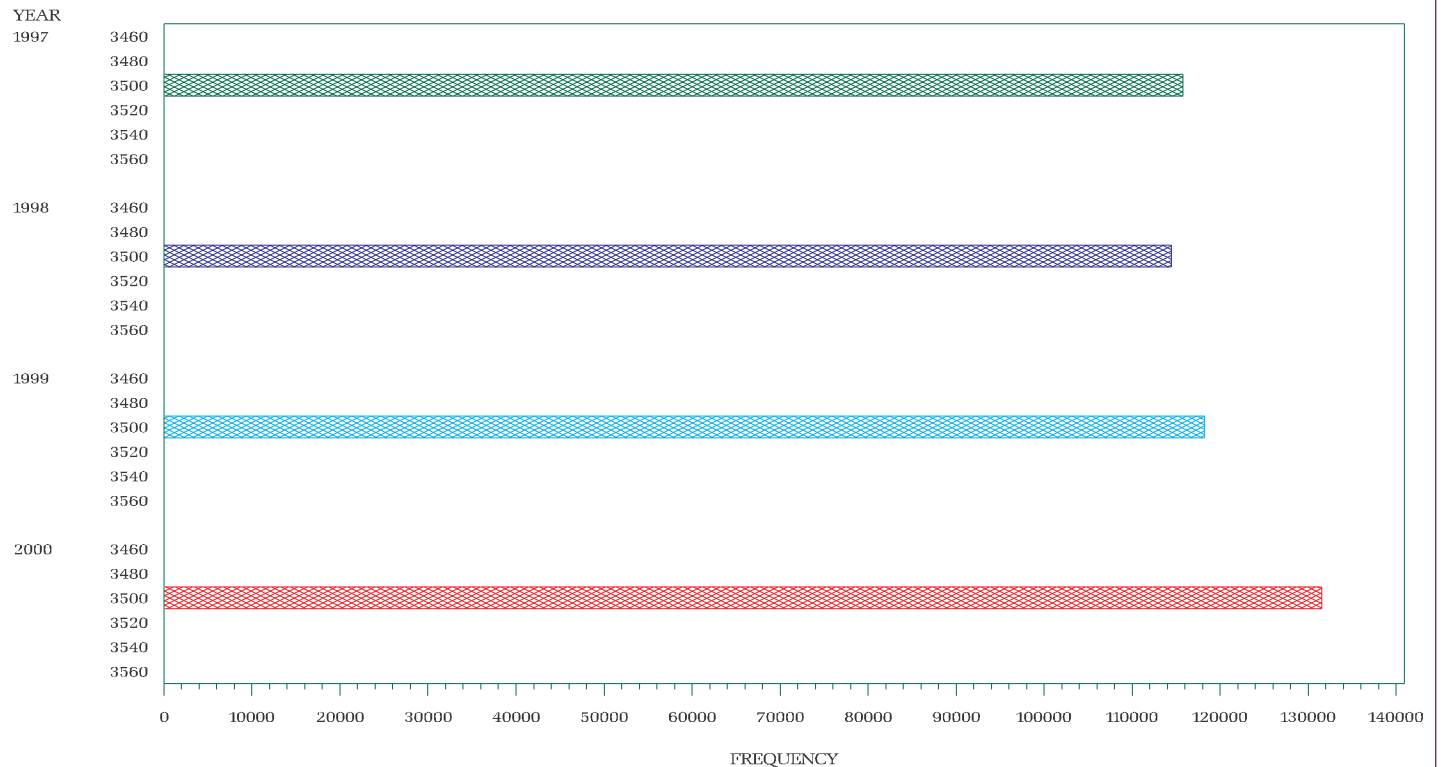
NYISO Transmission Use Statistics For January–December 2000

NY – PJM Limit



NYISO Transmission Use Statistics For January 1997–December 2000

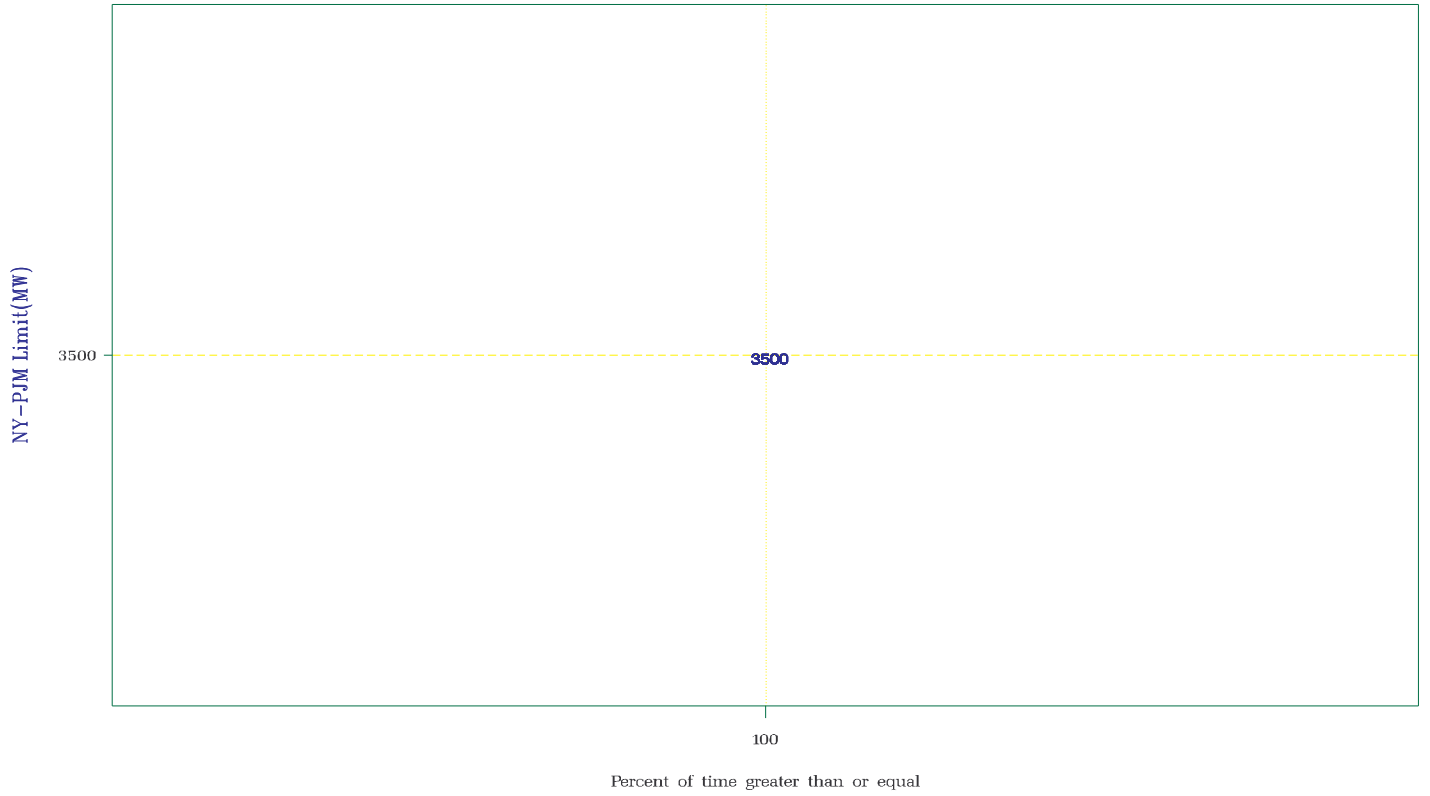
NY – PJM Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

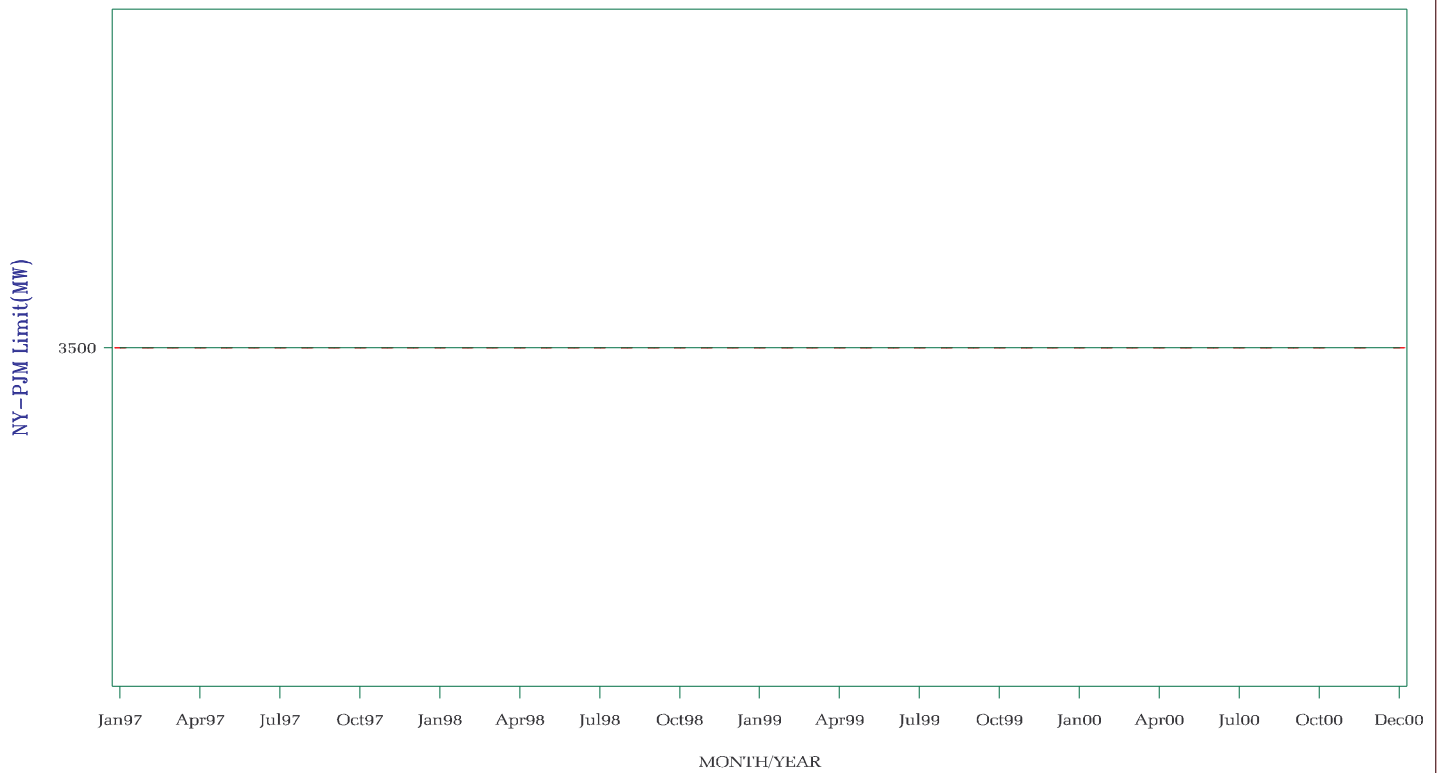
NY – PJM Limit



1997 1998 1999 2000

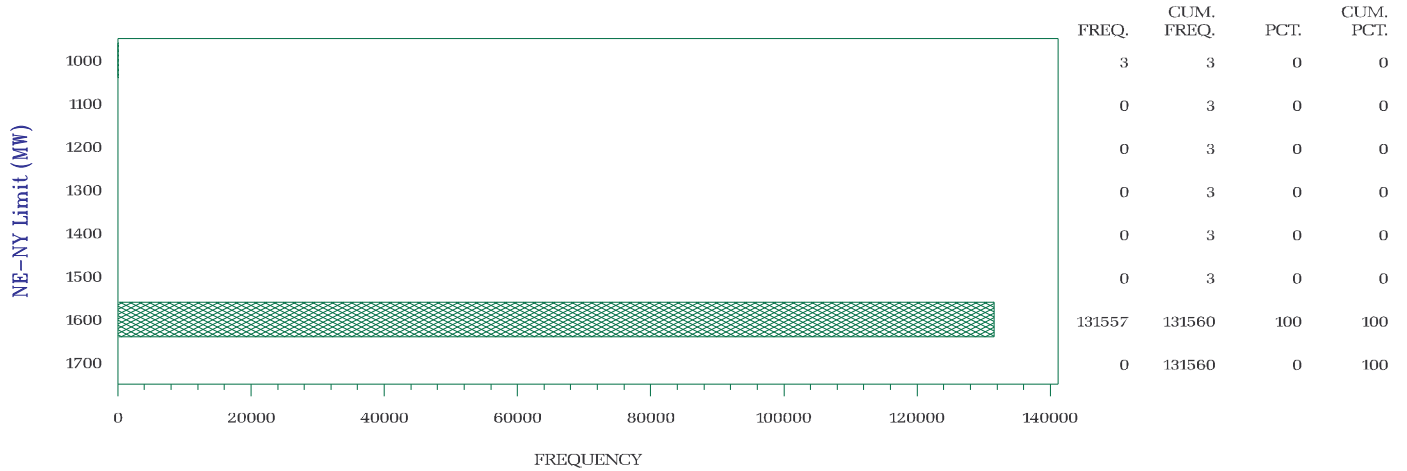
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

NY – PJM Limit



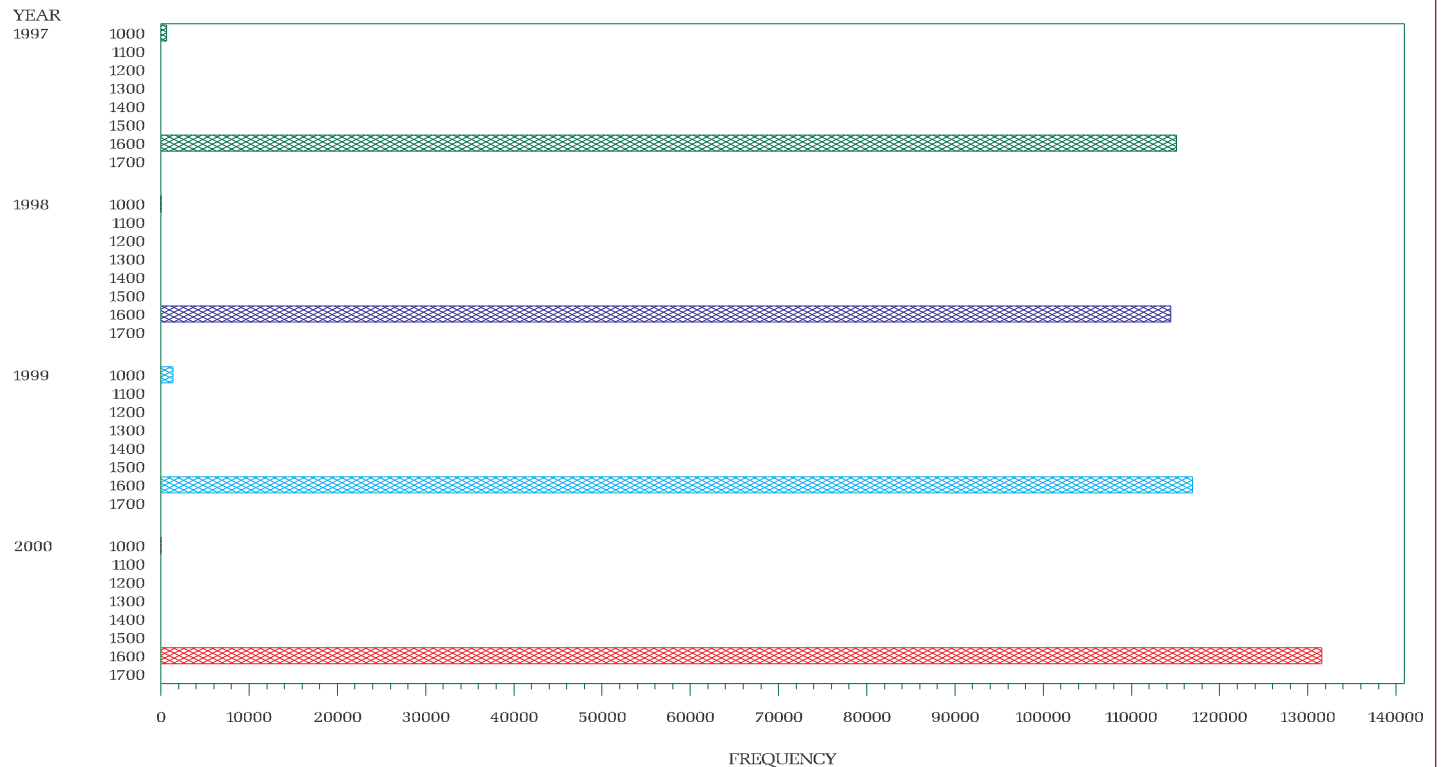
NYISO Transmission Use Statistics For January–December 2000

NE–NY Limit



NYISO Transmission Use Statistics For January 1997–December 2000

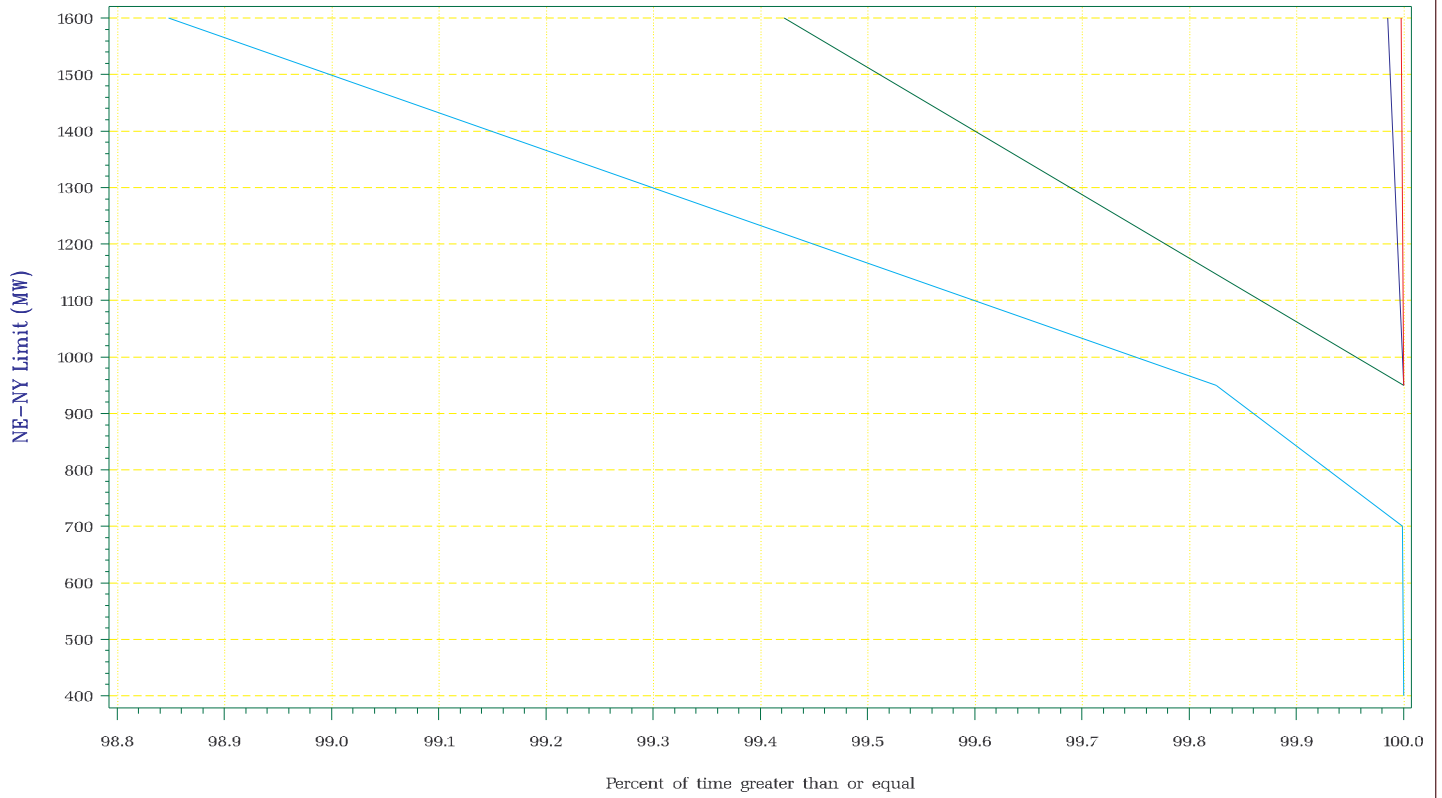
NE–NY Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

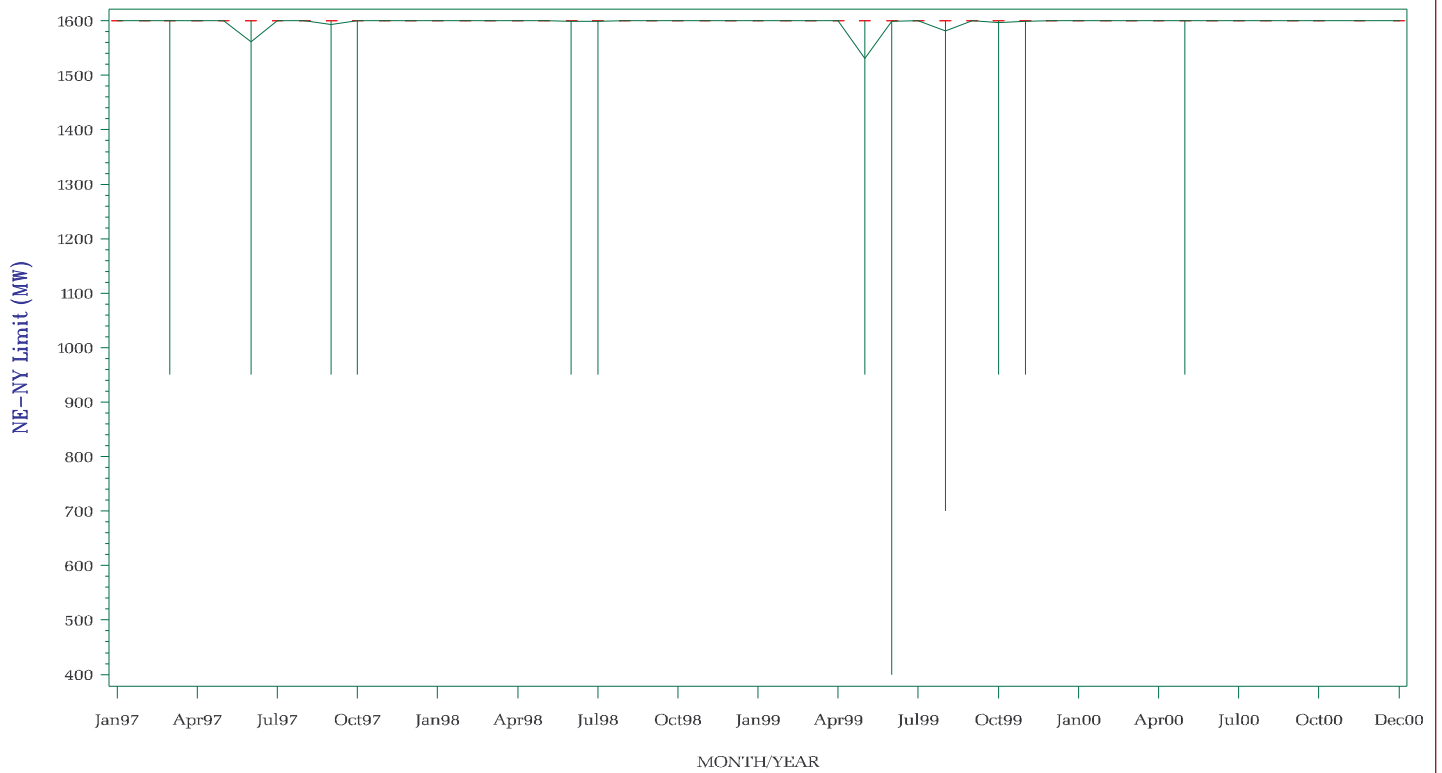
NE – NY Limit



1997 1998 1999 2000

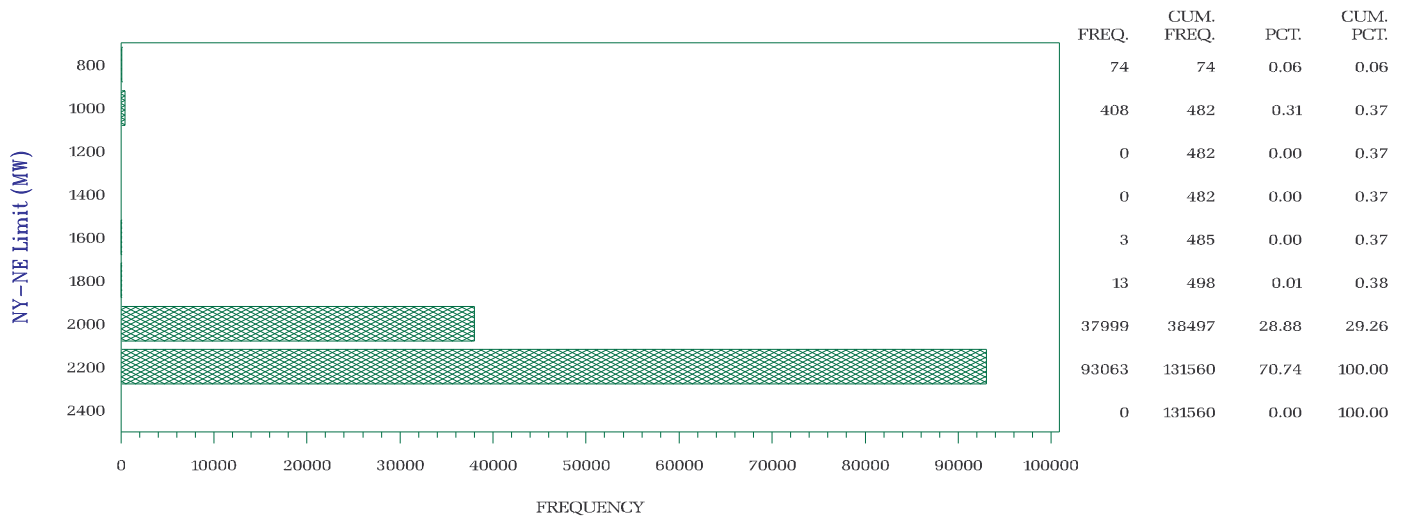
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

NE – NY Limit



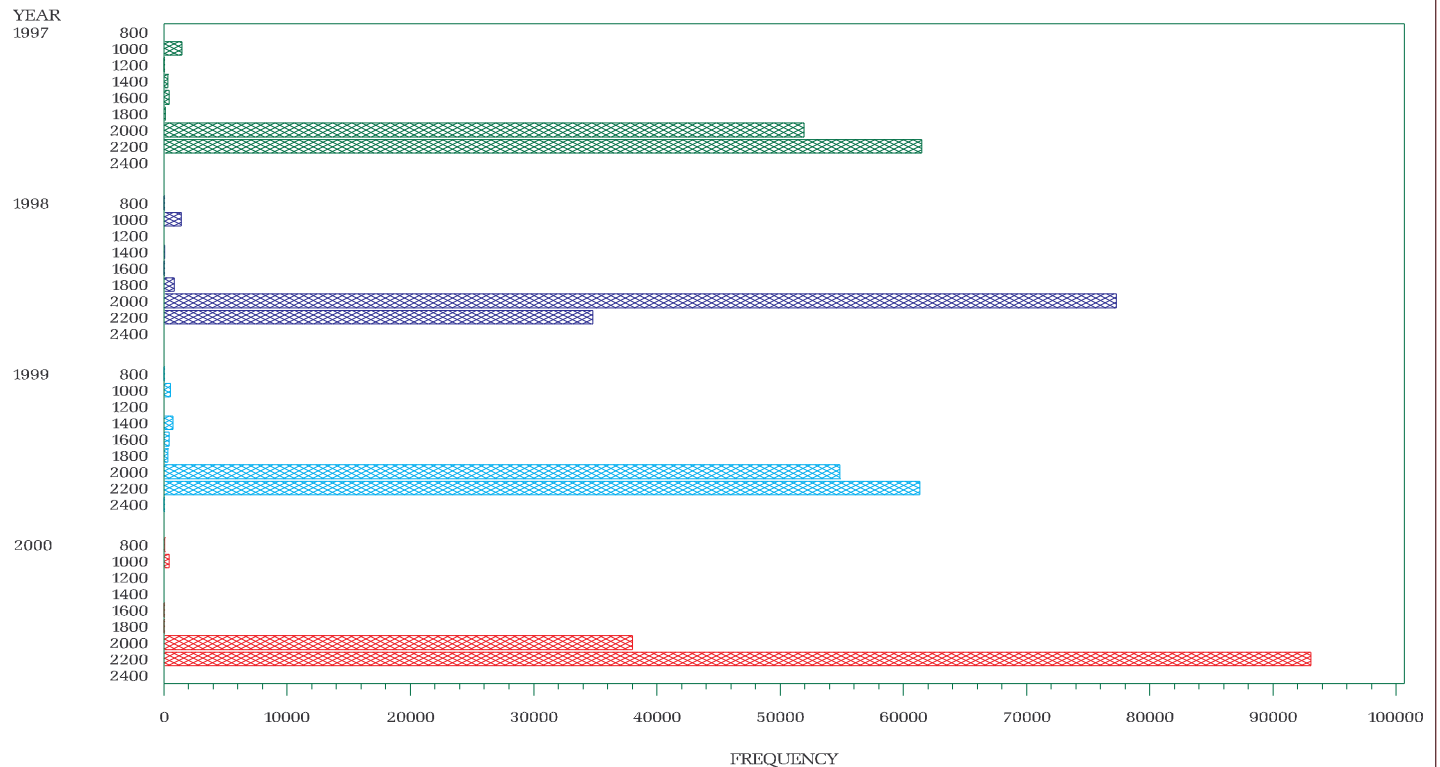
NYISO Transmission Use Statistics For January-December 2000

NY-NE Limit



NYISO Transmission Use Statistics For January 1997-December 2000

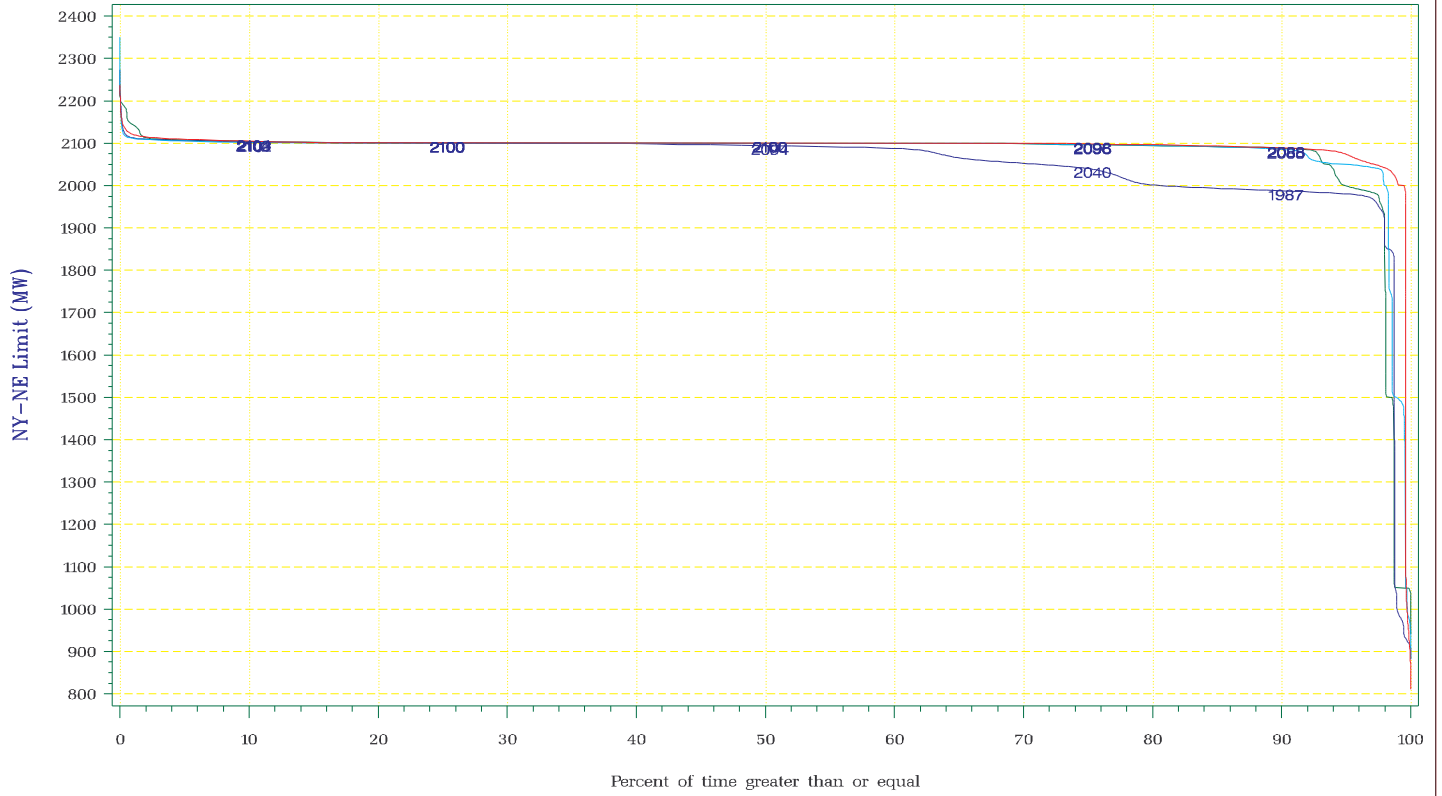
NY-NE Limit



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

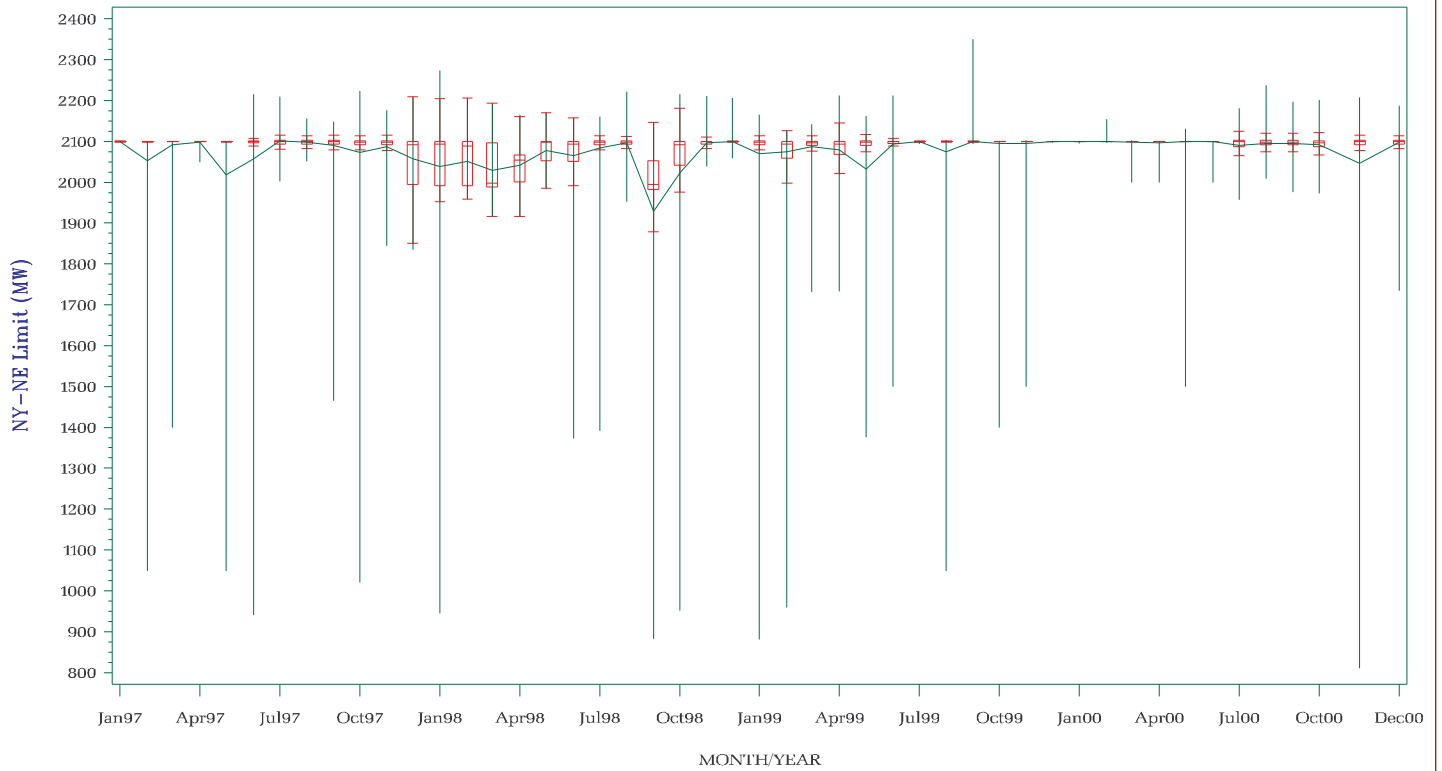
NY – NE Limit



1997 1998 1999 2000

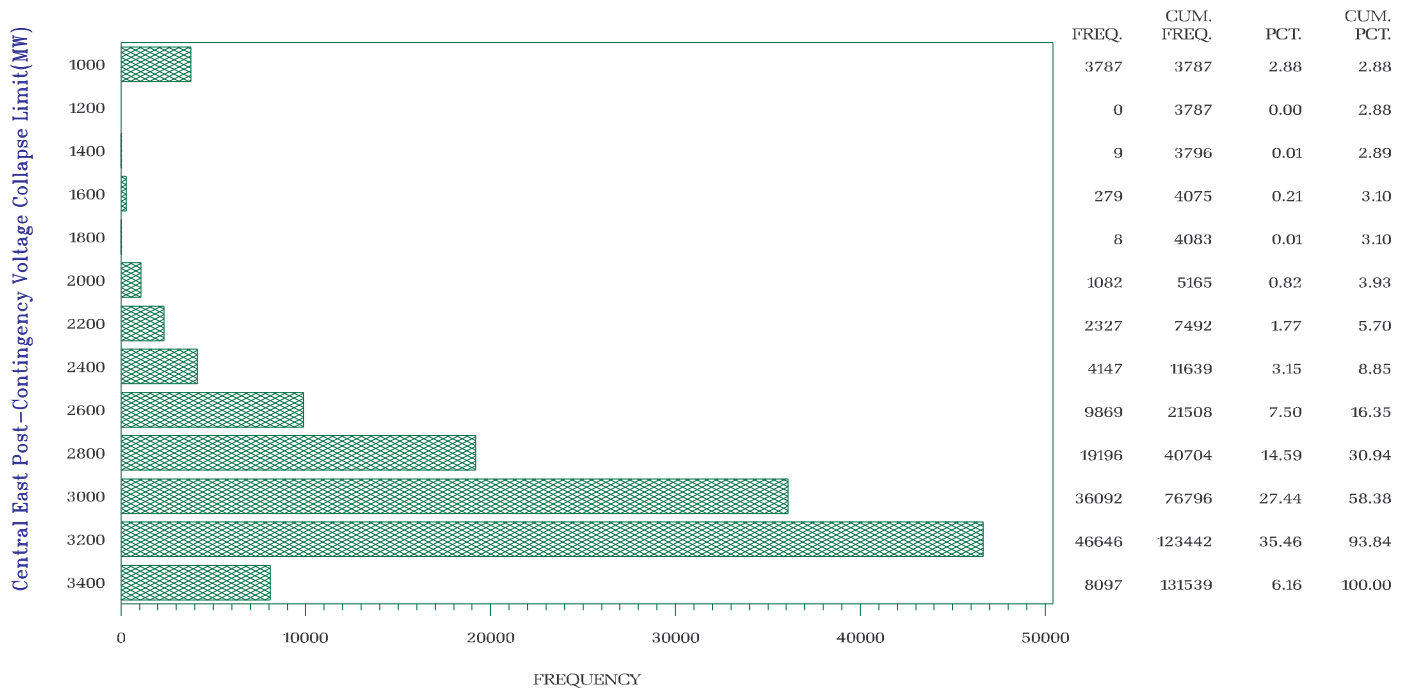
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

NY – NE Limit



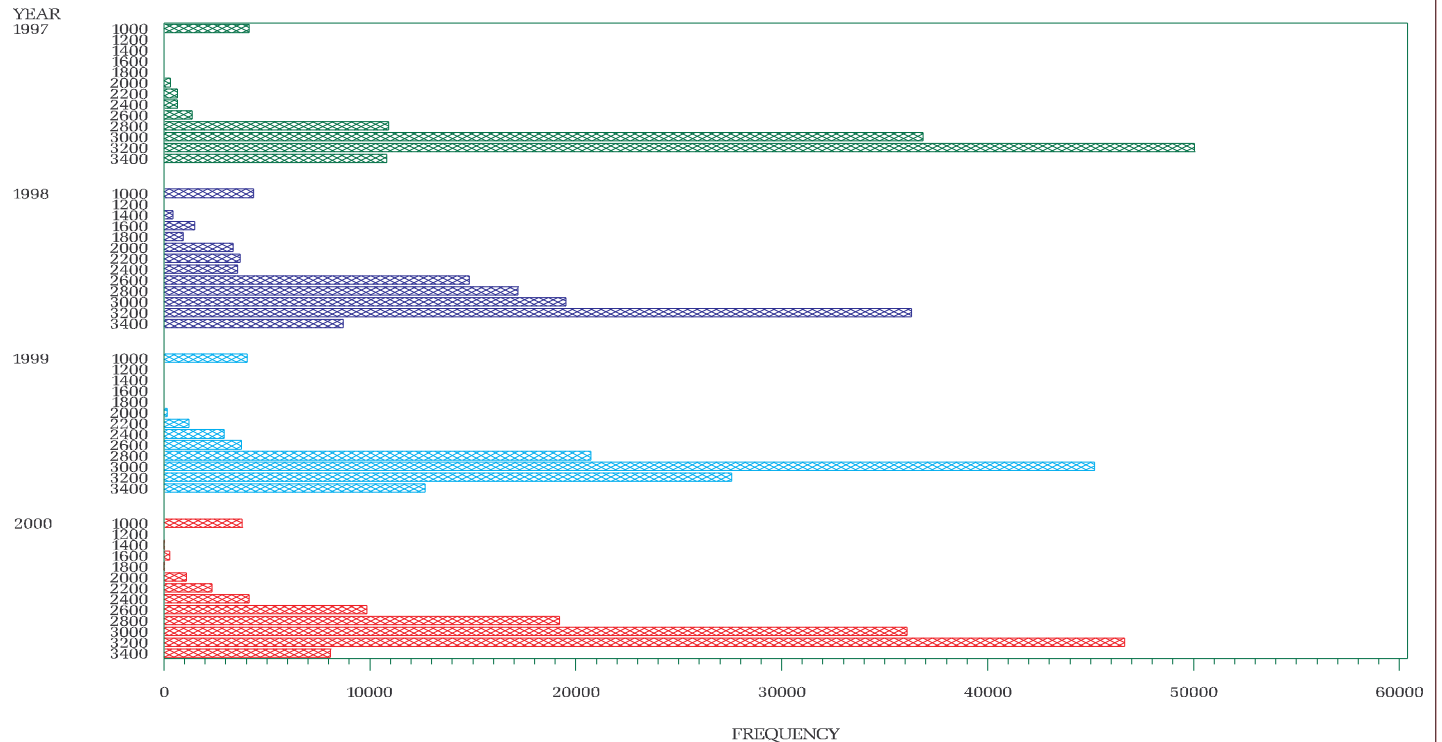
NYISO Transmission Use Statistics For January–December 2000

Central East Post–Contingency Voltage Collapse Limit
/o New England Generation



NYISO Transmission Use Statistics For January 1997–December 2000

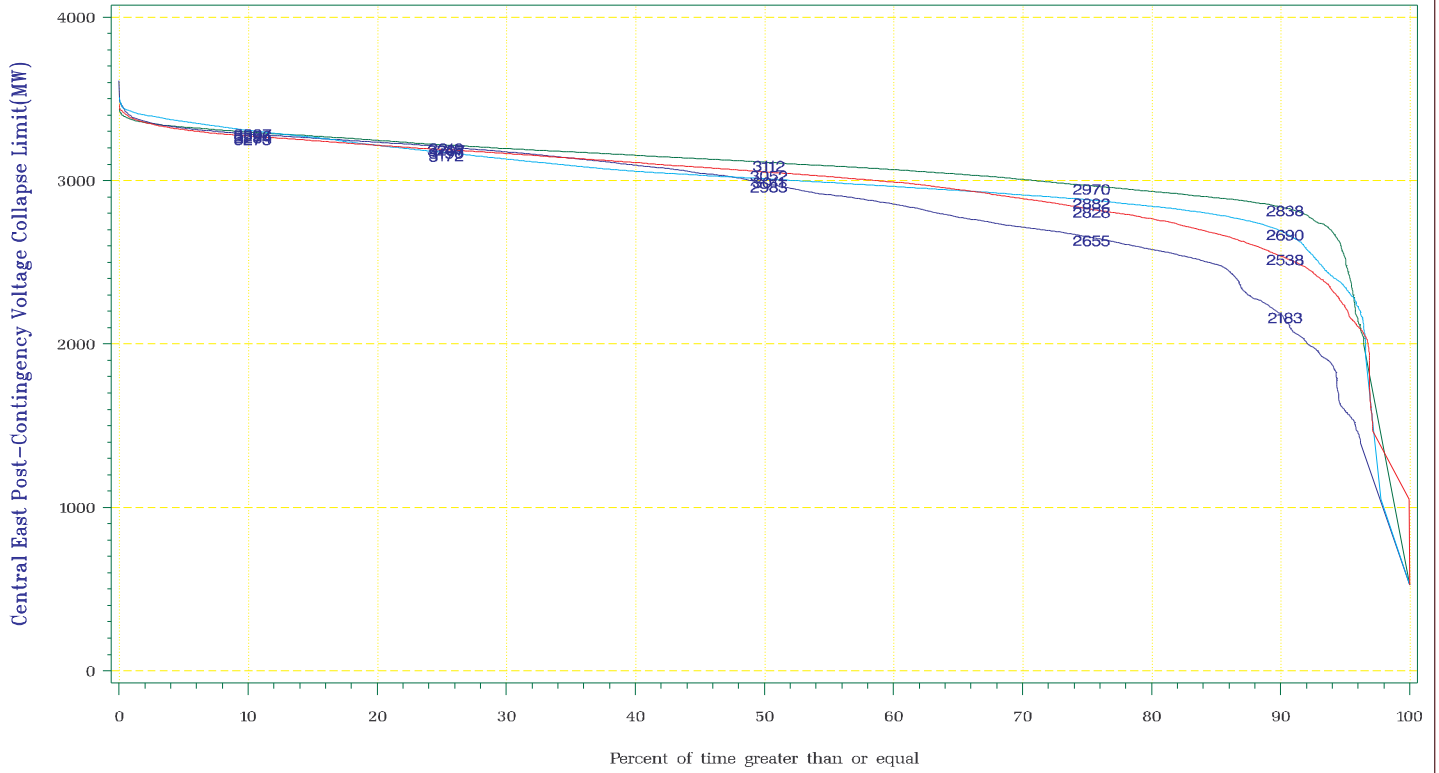
Central East Post–Contingency Voltage Collapse Limit
/o New England Generation



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

Central East Post–Contingency Voltage Collapse Limit
I/o New England Generation



1997 1998 1999 2000

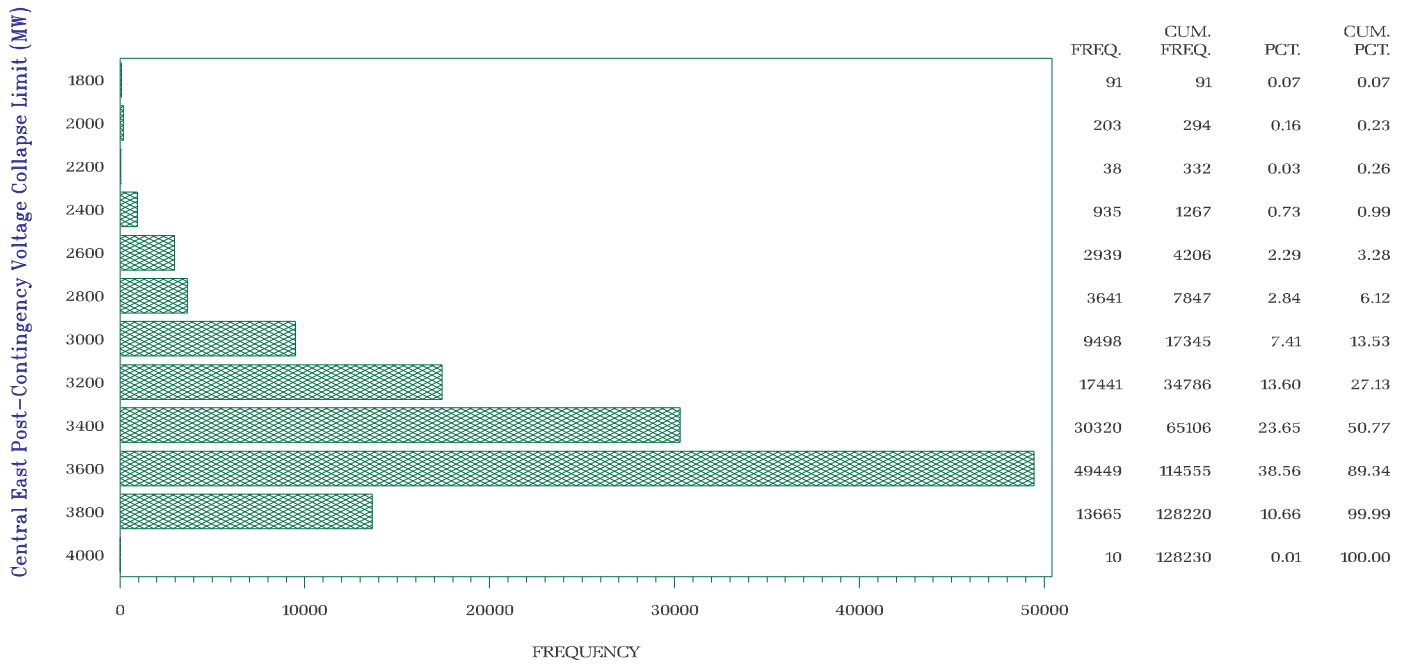
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

Central East Post–Contingency Voltage Collapse Limit
I/o New England Generation



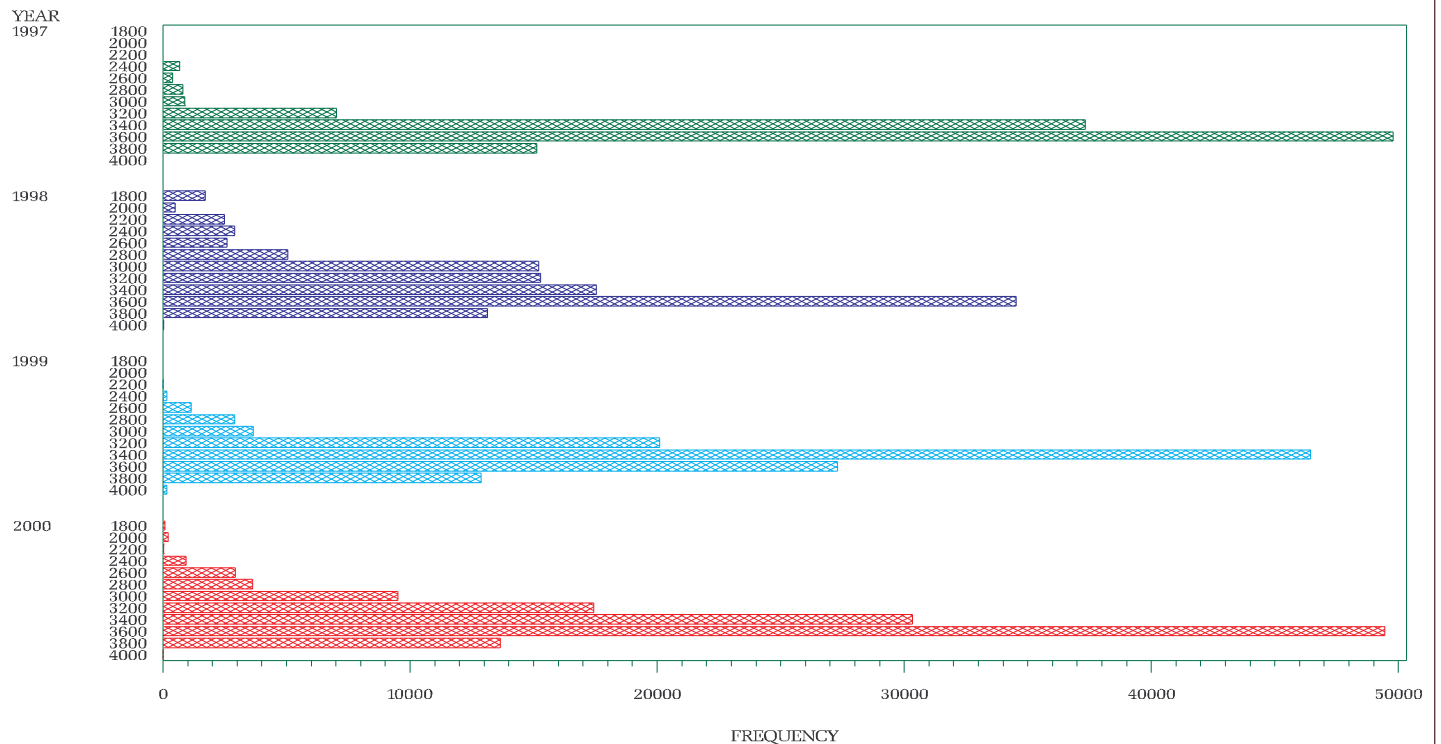
NYISO Transmission Use Statistics For January–December 2000

Central East Post—Contingency Voltage Collapse Limit
l/o Marcy South Tower



NYISO Transmission Use Statistics For January 1997–December 2000

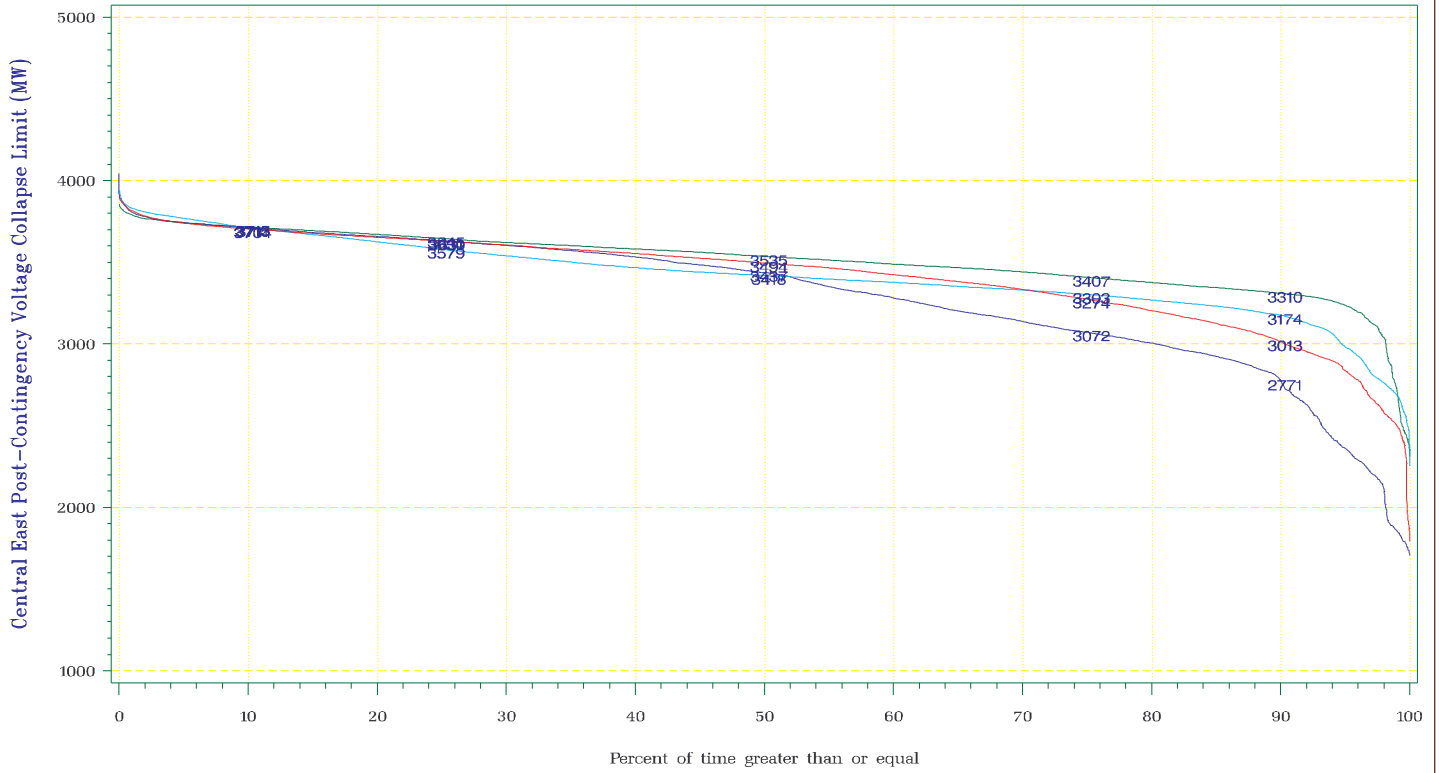
Central East Post—Contingency Voltage Collapse Limit
l/o Marcy South Tower



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

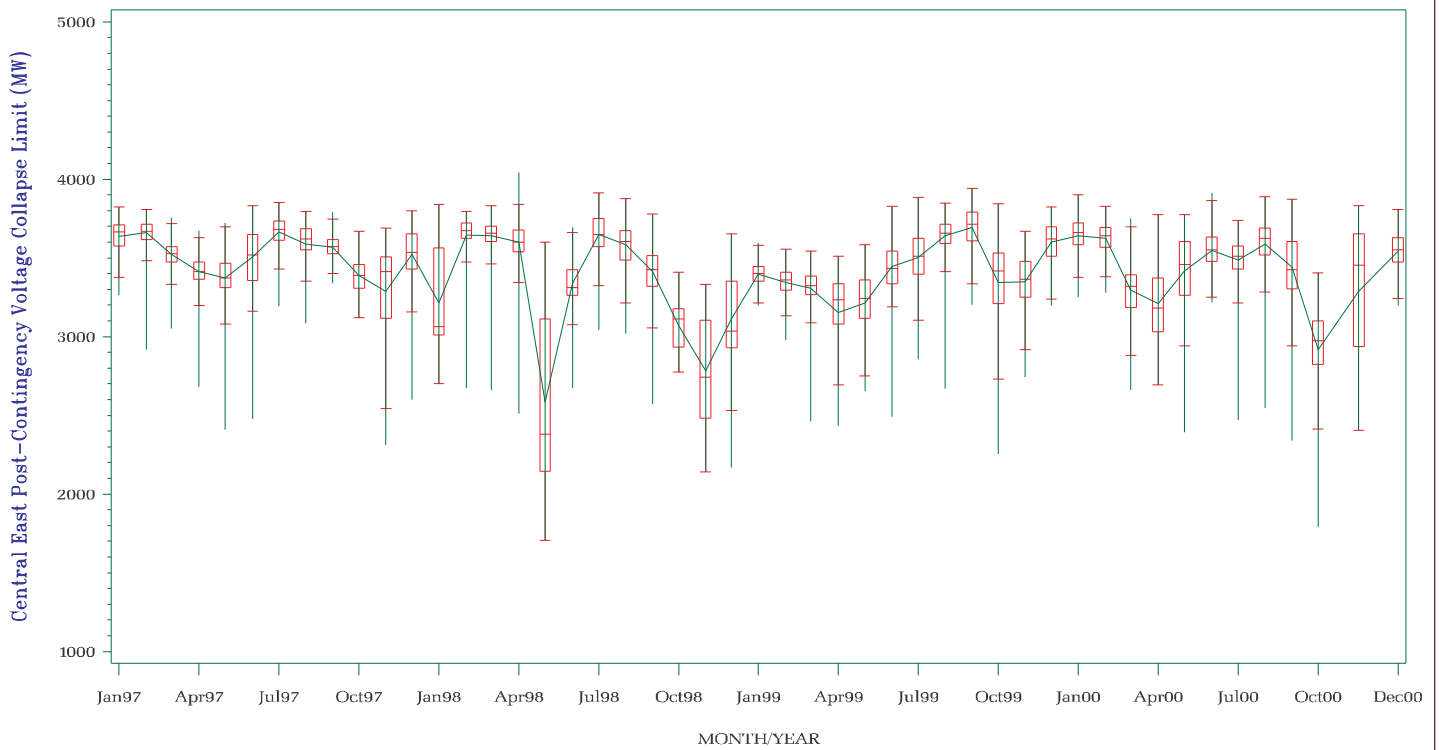
Central East Post – Contingency Voltage Collapse Limit l/o Marcy South Tower



1997 1998 1999 2000

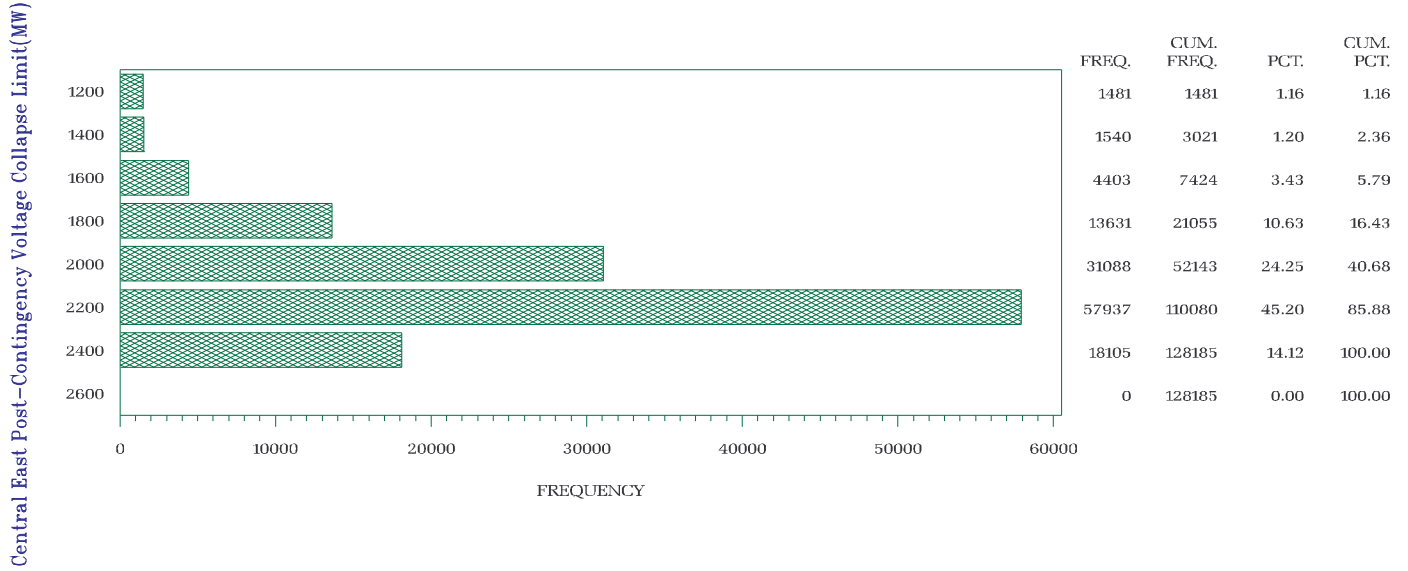
NYISO Average Monthly Interface Flow
January 1, 1997 – December 31, 2000

Central East Post – Contingency Voltage Collapse Limit l/o Marcy South Tower



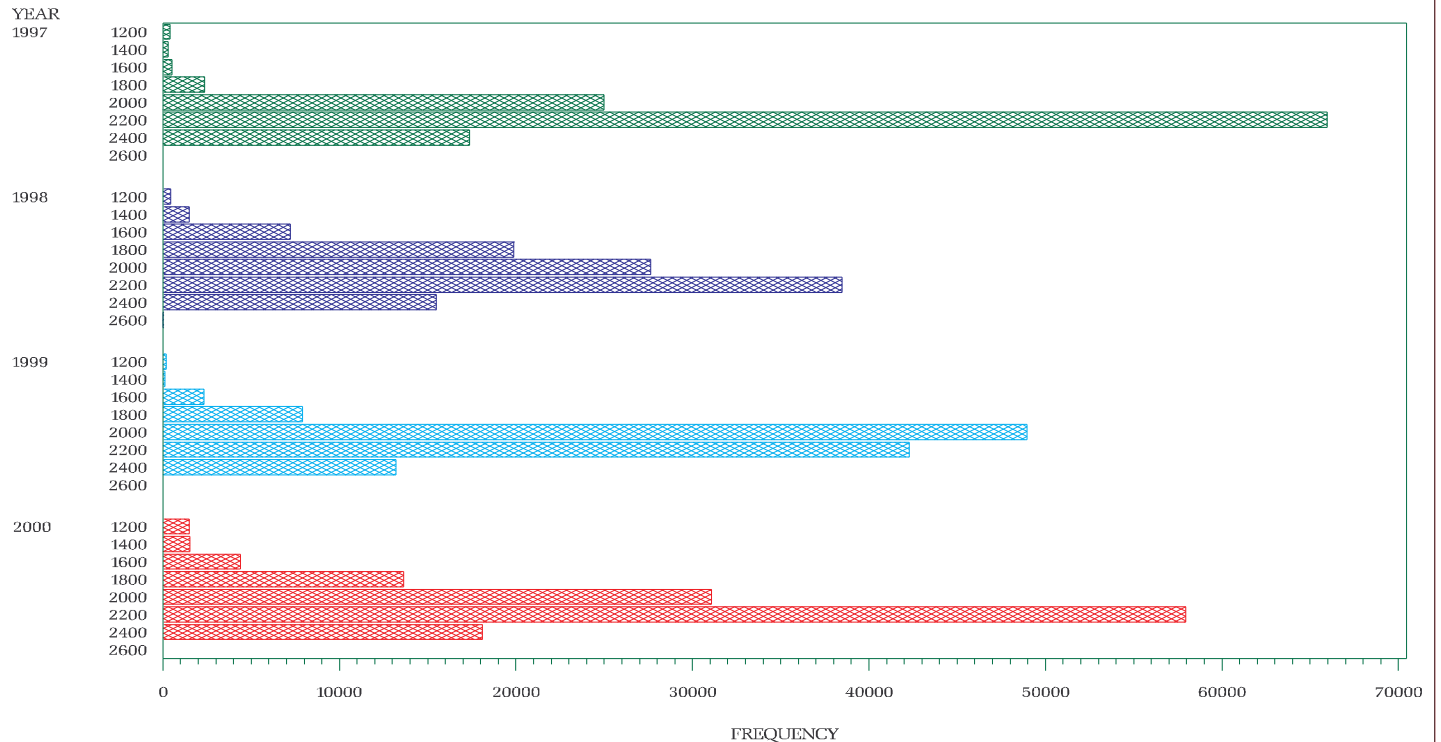
NYISO Transmission Use Statistics For January–December 2000

Central East Post–Contingency Voltage Collapse Limit
/o New Scotland 99 Bus



NYISO Transmission Use Statistics For January 1997–December 2000

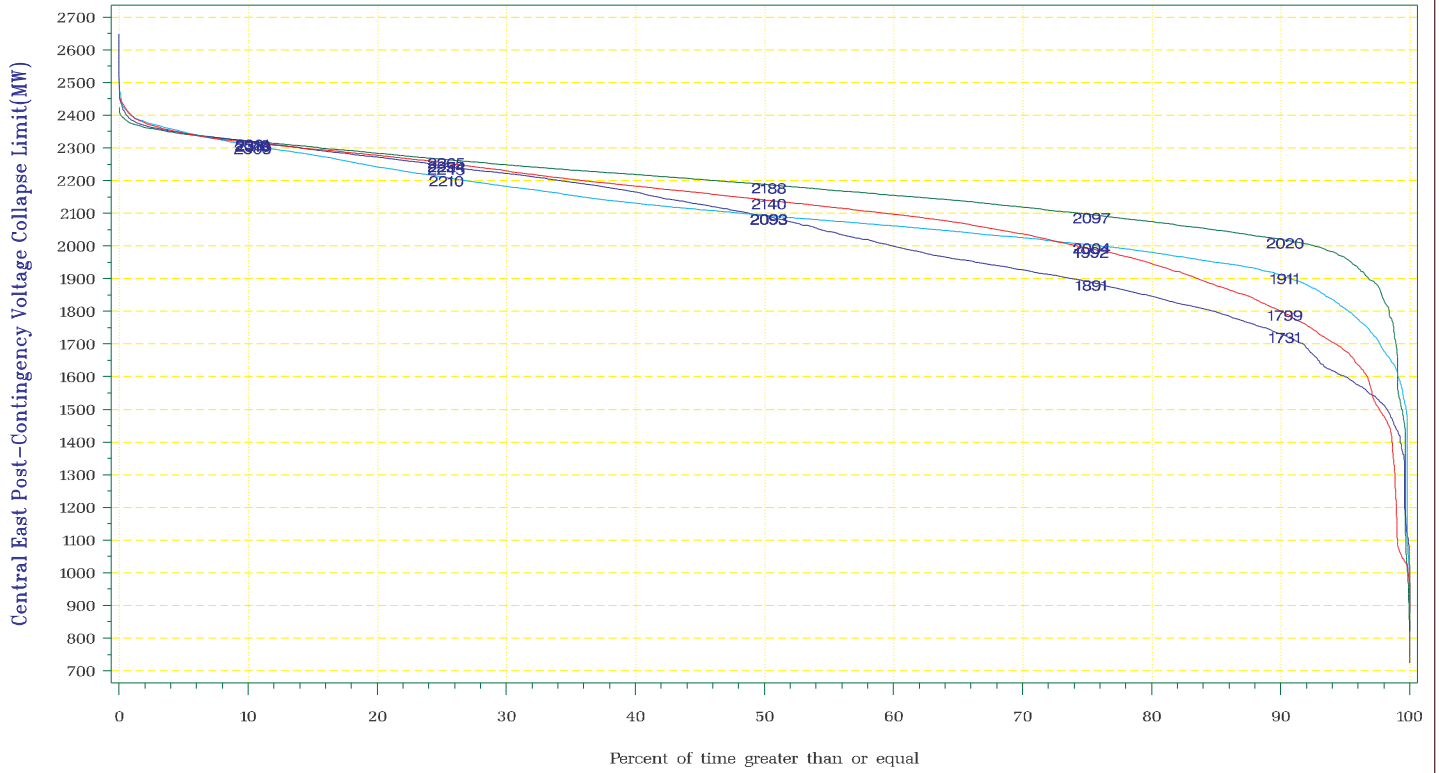
Central East Post–Contingency Voltage Collapse Limit
/o Marcy South Tower



1997 1998 1999 2000

NYISO Flow Duration Curve For January 1997 – December 2000

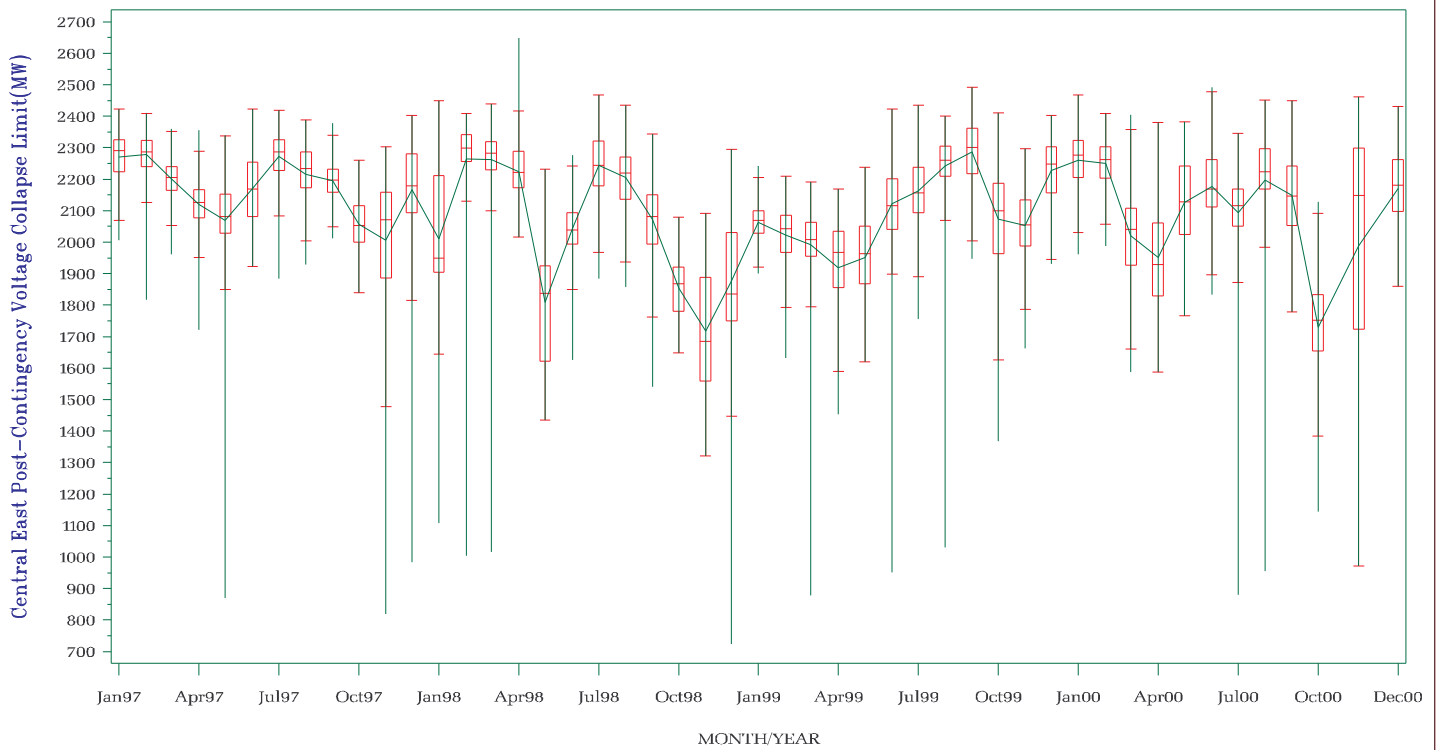
Central East Post – Contingency Voltage Collapse Limit
 l/o New Scotland 99 Bus



1997 1998 1999 2000

NYISO Average Monthly Interface Flow
 January 1, 1997 – December 31, 2000

Central East Post – Contingency Voltage Collapse Limit
 l/o Marcy South Tower



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[Appendix D – Interfaces Simultaneously Constraining](#)

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| Interfaces Simultaneously Constraining | 1997 | | 1998 | | 1999 | | 2000 | |
|--|------------|-----------|------------|-----------|------------|-----------|------------|-----------|
| | Nr.of Hour | % of Year | Nr.of Hour | % of Year | Nr.of Hour | % of Year | Nr.of Hour | % of Year |
| CENTRAL EAST, DYSINGER EAST | 27 | 0.30% | 4 | 0.00% | . | . | 8 | 0.10% |
| CENTRAL EAST, HQ-NY | . | . | . | . | . | . | 96 | 1% |
| CENTRAL EAST, SPRN/DUNWOODIE | 31 | 0.40% | 2 | 0.00% | 8 | 0.10% | 109 | 1% |
| CENTRAL EAST, SPRN/DUNWOODIE DYSINGER EAST | . | . | . | . | . | . | 4 | 0.00% |
| CENTRAL EAST, SPRN/DUNWOODIE HQ-NY | . | . | . | . | . | . | 18 | 0.20% |
| CENTRAL EAST, MOSES SOUTH | 1 | 0.00% | 9 | 0.10% | 2 | 0.00% | . | . |
| CENTRAL EAST, MOSES SOUTH SPRN/DUNWOODIE HQ-NY | . | . | . | . | . | . | 1 | 0.00% |
| CENTRAL EAST, UPNY CON ED | 2 | 0.00% | . | . | . | . | 10 | 0.10% |
| CENTRAL EAST, UPNY CON ED, DYSINGER EAST | . | . | . | . | . | . | 3 | 0.00% |
| CENTRAL EAST, UPNY CON ED, HQ-NY | . | . | . | . | . | . | 3 | 0.00% |
| CENTRAL EAST, UPNY CON ED, SPRN/DUNWOODIE | . | . | . | . | . | . | 7 | 0.10% |
| CENTRAL EAST, UPNY CON ED, SPRN/DUNWOODIE, DYSINGER EAST | . | . | . | . | . | . | 4 | 0.00% |
| CENTRAL EAST, TOTAL EAST | 133 | 2% | 35 | 0.40% | . | . | 3 | 0.00% |
| CENTRAL EAST, TOTAL EAST, DYSINGER EAST | 13 | 0.10% | . | . | . | . | . | . |
| CENTRAL EAST, TOTAL EAST, SPRN/DUNWOODIE | 1 | 0.00% | . | . | . | . | . | . |
| CENTRAL EAST, C. EAST NET P/C | 3286 | 38% | 960 | 11% | 94 | 1% | 1440 | 16% |
| CENTRAL EAST, C. EAST NET P/C, DYSINGER EAST | 61 | 0.70% | . | . | . | . | . | . |
| CENTRAL EAST, C. EAST NET P/C, HQ-NY | . | . | . | . | . | . | 235 | 3% |
| CENTRAL EAST, C. EAST NET P/C, SPRN/DUNWOODIE | 66 | 0.80% | 27 | 0.30% | 19 | 0.20% | 192 | 2% |
| CENTRAL EAST, C. EAST NET P/C, SPRN/DUNWOODIE DYSINGER EAST | 1 | 0.00% | . | . | . | . | 1 | 0.00% |
| CENTRAL EAST, C. EAST NET P/C, SPRN/DUNWOODIE HQ-NY | . | . | . | . | . | . | 47 | 0.50% |
| CENTRAL EAST, C. EAST NET P/C, MOSES SOUTH | 2 | 0.00% | 1 | 0.00% | 2 | 0.00% | 2 | 0.00% |
| CENTRAL EAST, C. EAST NET P/C, MOSES SOUTH HQ-NY | . | . | . | . | . | . | 2 | 0.00% |
| CENTRAL EAST, C. EAST NET P/C, MOSES SOUTH SPRN/DUNWOODIE | . | . | . | . | 1 | 0.00% | . | . |
| CENTRAL EAST, C. EAST NET P/C, MOSES SOUTH, SPRN/DUNW, HQ-NY | . | . | . | . | . | . | 1 | 0.00% |
| CENTRAL EAST, C. EAST NET P/C, UPNY CON ED | 14 | 0.20% | . | . | 1 | 0.00% | 18 | 0.20% |
| CENTRAL EAST, C.L EAST NET P/C, UPNY CON ED, HQ-NY | . | . | . | . | . | . | 6 | 0.10% |
| CENTRAL EAST, C. EAST NET P/C, TOTAL EAST | 380 | 4% | 113 | 1% | 2 | 0.00% | 22 | 0.30% |
| CENTRAL EAST, C. EAST NET P/C, TOTAL EAST, DYSINGER EAST | 17 | 0.20% | . | . | . | . | 1 | 0.00% |
| CENTRAL EAST, C. EAST NET P/C, TOTAL EAST, SPRN/DUNWOODIE | 7 | 0.10% | 4 | 0.00% | . | . | 4 | 0.00% |
| CENTRAL EAST NET P/C, DYSINGER EAST | 70 | 0.80% | 4 | 0.00% | 1 | 0.00% | 8 | 0.10% |
| CENTRAL EAST NET P/C, HQ-NY | . | . | . | . | . | . | 233 | 3% |
| CENTRAL EAST NET P/C, HQ-NY DYSINGER EAST | . | . | . | . | . | . | 2 | 0.00% |
| CENTRAL EAST NET P/C, SPRN/DUNWOODIE | 115 | 1% | 37 | 0.40% | 312 | 4% | 599 | 7% |
| CENTRAL EAST NET P/C, SPRN/DUNWOODIE, DYSINGER EAST | 1 | 0.00% | . | . | . | . | 2 | 0.00% |
| CENTRAL EAST NET P/C, SPRN/DUNWOODIE HQ-NY | . | . | . | . | . | . | 55 | 0.60% |
| CENTRAL EAST NET P/C, SPRN/DUNWOODIE, HQ-NY, DYSINGER EAST | . | . | . | . | . | . | 1 | 0.00% |
| CENTRAL EAST NET P/C, MOSES SOUTH | 9 | 0.10% | 1 | 0.00% | . | . | . | . |
| CENTRAL EAST NET P/C, MOSES SOUTH HQ-NY | . | . | . | . | . | . | 1 | 0.00% |
| CENTRAL EAST NET P/C, UPNY CON ED | 13 | 0.10% | 2 | 0.00% | 9 | 0.10% | 19 | 0.20% |
| CENTRAL EAST NET P/C, UPNY CON ED, HQ-NY | . | . | . | . | . | . | 5 | 0.10% |
| CENTRAL EAST NET P/C, UPNY CON ED, SPRN/DUNWOODIE | . | . | . | . | . | . | 3 | 0.00% |
| CENTRAL EAST NET P/C, UPNY CON ED, SPRN/DUNWOODIE HQ-NY | . | . | . | . | . | . | 1 | 0.00% |
| CENTRAL EAST NET P/C, TOTAL EAST | 222 | 3% | 79 | 0.90% | 20 | 0.20% | 22 | 0.30% |
| CENTRAL EAST NET P/C, TOTAL EAST, DYSINGER EAST | 6 | 0.10% | . | . | . | . | . | . |
| CENTRAL EAST NET P/C, TOTAL EAST, SPRN/DUNWOODIE | . | . | 2 | 0.00% | 1 | 0.00% | . | . |
| CENTRAL EAST NET P/C, TOTAL EAST, UPNY, CON ED | 1 | 0.00% | . | . | . | . | . | . |
| HQ-NY, DYSINGER EAST | . | . | . | . | . | . | 1 | 0.00% |
| MOSES SOUTH, HQ-NY | . | . | . | . | . | . | 1 | 0.00% |
| SPRN/DUNWOODIE, DYSINGER EAST | . | . | . | . | . | . | 14 | 0.20% |
| SPRN/DUNWOODIE, HQ-NY | . | . | . | . | . | . | 68 | 0.80% |
| TOTAL EAST, DYSINGER EAST | 3 | 0.00% | 2 | 0.00% | . | . | . | . |
| TOTAL EAST, SPRN/DUNWOODIE | . | . | 3 | 0.00% | . | . | . | . |
| UPNY CON ED, DYSINGER EAST | . | . | . | . | . | . | 3 | 0.00% |
| UPNY CON ED, HQ-NY | . | . | . | . | . | . | 11 | 0.10% |
| UPNY, CON ED, SPRN/DUNWOODIE | . | . | 3 | 0.00% | . | . | 16 | 0.20% |

| | | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|-------|
| UPNY CON ED, SPRN/DUNWOODIE, DYSINGER EAST | . | . | . | . | . | . | 1 | 0.00% |
| UPNY CON ED, SPRN/DUNWOODIE, HQ-NY | . | . | . | . | . | . | 2 | 0.00% |
| WEST CENTRAL, DYSINGER EAST | 25 | 0.30% | 4 | 0.00% | 3 | 0.00% | 15 | 0.20% |
| WEST CENTRAL, SPRN/DUNWOODIE | . | . | 1 | 0.00% | . | . | 1 | 0.00% |
| WEST CENTRAL, SPRN/DUNWOODIE, DYSINGER EAST | . | . | . | . | . | . | 2 | 0.00% |
| WEST CENTRAL, CENTRAL EAST NET P/C | 88 | 1% | . | . | 1 | 0.00% | 12 | 0.10% |
| WEST CENTRAL, CENTRAL EAST NET P/C, DYSINGER EAST | 20 | 0.20% | . | . | . | . | 14 | 0.20% |
| WEST CENTRAL, CENTRAL EAST NET P/C, SPRN/DUNWOODIE | . | . | . | . | . | . | 6 | 0.10% |
| WEST CENTRAL, C. EAST NET P/C, SPRN/DUNWOODIE, DYSINGER EAST | . | . | . | . | . | . | 5 | 0.10% |
| WEST CENTRAL, CENTRAL EAST NET P/C, TOTAL EAST | 3 | 0.00% | . | . | . | . | . | . |
| WEST CENTRAL, CENTRAL EAST | 8 | 0.10% | . | . | . | . | . | . |
| WEST CENTRAL, CENTRAL EAST, DYSINGER EAST | 2 | 0.00% | . | . | . | . | . | . |
| WEST CENTRAL, CENTRAL EAST, TOTAL EAST | 1 | 0.00% | . | . | . | . | . | . |
| WEST CENTRAL, CENTRAL EAST, CENTRAL EAST NET P/C | 24 | 0.30% | . | . | . | . | . | . |
| WEST CENTRAL, C. EAST, C. EAST NET P/C, DYSINGER EAST | 7 | 0.10% | . | . | . | . | . | . |
| WEST CENTRAL, C. EAST, C. EAST NET P/C, SPRN/DUNW, DYS. EAST | . | . | . | . | . | . | 1 | 0.00% |
| WEST CENTRAL, C. EAST, C. EAST NET P/C, TOTAL EAST | 4 | 0.00% | . | . | . | . | . | . |
| | ===== | ===== | ===== | ===== | ===== | ===== | ===== | ===== |
| | 4664 | 53% | 1293 | 15% | 476 | 5% | 3361 | 38% |



Appendix E – NYISO Operating

Interfaces & OASIS Transmission Paths

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NYISO OPERATING INTERFACES & OASIS TRANSMISSION PATHS

| CENTRAL EAST | | | |
|-----------------------------------|----------------|--------------------|--|
| Name | Line ID | Voltage(kV) | |
| Edic-New Scotland* | 14 | 345 | |
| Marcy-New Scotland* | UNS-18 | 345 | |
| Porter-Rotterdam* | 30 | 230 | |
| Porter-Rotterdam* | 31 | 230 | |
| Plattsburgh- Grand Isle | PV-20 | 115 | |
| Inghams-East Springfield | 942 | 115 | |
| Inghams CD-ED bus tie | PAR | 115 | |
| Inghams CD-ED bus tie | R81 (N.O.) | 115 | |
| TOTAL EAST | | | |
| Central-Capital/MidHudson | | | |
| Name | Line ID | Voltage(kV) | |
| Coopers Corners-Rock Tavern* | CCRT-34 | 345 | |
| Coopers Corners-Rock Tavern* | CCRT-42 | 345 | |
| Edic-New Scotland* | 14 | 345 | |
| *Fraser-Gilboa | 35 | 345 | |
| Marcy-New Scotland* | UNS-18 | 345 | |
| Porter-Rotterdam* | 30 | 230 | |
| Porter-Rotterdam* | 31 | 230 | |
| *Inghams-East Springfield | 941 | 115 | |
| Inghams CD-ED bus tie | PAR | 115 | |
| West Woodbourne*115/69 | T152 | BK | |
| PJM East-Capital/MidHudson | | | |
| Branchburg-Ramapo* | 5018 | 500 | |
| S. Mahwah-Waldwick* | J3410 | 345 | |
| S. Mahwah-Waldwick* | K3411 | 345 | |
| PJM East-New York City | | | |
| Hudson-Farragut* | C3403 | 345 | |
| Hudson-Farragut* | B3402 | 345 | |
| Linden-Goethals* | A2253 | 230 | |
| Adirondack-NE VT N | | | |
| *Plattsburg-Grand Isle | PV-20 | 115 | |

NYISO OPERATING INTERFACES & OASIS TRANSMISSION PATHS

| MOSES SOUTH | | |
|---------------------------|----------------|---------------------|
| Adirondack-Central | | |
| Name | Line ID | Voltage (kV) |
| *Massena-Marcy | MSU-1 | 765 |
| *Moses Adirondack | MA-1 | 230 |
| *Moses Adirondack | MA-2 | 230 |
| *Dennison-Colton | 4 | 115 |
| *Dennison-Colton | 5 | 115 |
| *Alcoa-N. Ogdensburg | 13 | 115 |
| *Colton-Malone | 3 | 115 |

| DYSINGER EAST | | |
|-----------------------------|----------------|---------------------|
| Frontier-Genessee | | |
| Name | Line ID | Voltage (kV) |
| *Kintigh-Rochester (Sta 80) | SR-1/39 | 345 |
| Niagara-Rochester* | NR-2 | 345 |
| *Stolle Road-Meyer | 67 | 230 |
| *Andover-Palmiter | 932 | 115 |
| *Lockport-Batavia | 107 | 115 |
| *Lockport-N. Akron | 108 | 115 |
| *Lockport-Oakfield | 112 | 115 |
| *Lockport-Sweden 1 | 111 | 115 |
| *Lockport-Sweden 3 | 113 | 115 |
| *Lockport-Telegraph | 114 | 115 |

| WEST CENTRAL | | |
|--|----------------|--------------------|
| Genessee-Central | | |
| Name | Line ID | Voltage(kV) |
| *Pannell Road-Clay | PC-1 | 345 |
| Pannell Road-Clay* | PC-2 | 345 |
| *Stolle-Meyer | 67 | 230 |
| *Andover-Palmiter | 932 | 115 |
| Macedon-Quaker* | 930 | 115 |
| *Mortimer-Elbridge | 1 | 115 |
| *Mortimer-Elbridge | 2 | 115 |
| *Pannell Road-Farmington | 4 | 115 |
| *Quaker Road-Sleigh Road | 980 | 115 |
| Station 82-South Perry | 906 | 115 |
| *Clyde 199(RG&E) – Sleigh Rd. (NYS) | | 115 |
| Clyde199 – Clinton Corn | | 115 |
| *Farmington (RG&E) NMPC | | 115 |
| Farmington #1 | | 34.5/115 |
| Farmington-#4 | | 34.5/115 |

NYISO OPERATING INTERFACES & OASIS TRANSMISSION PATHS

| UPNY-CONED | | | |
|--------------------------------------|---------|--------------|--|
| Capital/MidHudson-Westchester | | | |
| Name | Line ID | Voltage(kV) | |
| Ladentown-Buchanan South* | Y88 | 345 | |
| *Pleasant Valley-Wood St. | F30 | 345 | |
| *Pleasant Valley-E. Fishkill | F36 | 345 | |
| *Pleasant Valley-E. Fishkill | F37 | 345 | |
| *Pleasant Valley-Wood St. | W81 | 345 | |
| *Ramapo-Buchanan North | Y94 | 345 | |
| Roseton-E. Fishkill* | 305 | 345 | |
| *Fishkill Plains-Sylvan Lake | A/990 | 115 | |
| East Fishkill *115/345 | | 345/115 | |
| SPRAINBROOK-DUNWOODIE SOUTH | | | |
| Name | Line ID | Voltage(kV) | |
| *Dunwoodie-Rainey | 71 | 345 | |
| *Dunwoodie-Rainey | 72 | 345 | |
| Sprain Brook-Tremont* | 28 | 345 | |
| *Sprain Brook-West 49th Street | M51 | 345 | |
| *Sprain Brook-West 49th Street | M52 | 345 | |
| Lake Success - Jamaica | 903 | 138 | |
| Valley Stream - Jamaica | 901 | 138 | |
| *Dunwoodie-Sherman Creek | 99031 | 138 | |
| Dunwoodie-Sherman Creek* | 99032 | 138 | |
| *Dunwoodie-East 179th Street | 99153 | 138 | |
| NEW ENGLAND - NEW YORK | | | |
| Adirondack-NE VT N | | | |
| Name | Line ID | Voltage (kV) | |
| *Plattsburg-Grand Isle | PV-20 | 115 | |
| Capital/MidHudson-NE NU S | | | |
| *Pleasant Valley-Long Mtn. | 398 | 345 | |
| Capital/MidHudson-NE VT/NE/NU | | | |
| *Alps-Berkshire | 393 | 345 | |
| Rotterdam-Bear Swamp* | E205W | 230 | |
| North Troy-*Hoosick-Bennington | 6 | 115 | |
| *Whitehall-No. Rutland | 7/K37 | 115 | |
| Long Island-NE NU | | | |
| *Northport-Norwalk Harbor | 1385 | 138 | |

NYISO OPERATING INTERFACES & OASIS TRANSMISSION PATHS

| PJM-NY | | | |
|-----------------------------------|----------------|---------------------|--|
| PJM East-New York City | | | |
| Name | Line ID | Voltage (kV) | |
| Hudson-Farragut* | C3403 | 345 | |
| Hudson-Farragut* | B3402 | 345 | |
| Linden-Goethals* | A2253 | 230 | |
| PJM West-Central | | | |
| *Homer City-Watercure | 30 | 345 | |
| E. Towanda-Hillside* | 70 | 230 | |
| Tiffany-Goudey | 952 | 115 | |
| *E. Sayre-N. Waverly | 956 | 115 | |
| PJM West-Frontier | | | |
| *Homer City-Stolle Road | 37 | 345 | |
| Erie South-South Ripley* | 69 | 230 | |
| Falconer-Warren* | 171 | 115 | |
| PJM East-Capital/MidHudson | | | |
| Branchburg-Ramapo* | 5018 | 500 | |
| S. Mahwah-Waldwick* | J3410 | 345 | |
| S. Mahwah-Waldwick* | K3411 | 345 | |

HQ-NY *note: HQ-NYISO is MSC7040 line flow alone*

| HQ-Adirondack | | | |
|----------------------|----------------|--------------------|--|
| Name | Line ID | Voltage(kV) | |
| *Chateauguay-Massena | MSC7040 | 765 | |
| Rosemont-Dennison* | 1 | 115 | |
| Rosemont-Dennison* | 2 | 115 | |

Ontario (IMO)-NY

| Ontario East-Adirondack | | | |
|--------------------------------|----------------|---------------------|--|
| Name | Line ID | Voltage (kV) | |
| Saunders – St.Lawrence/FDR* | L33P | 240 | |
| Saunders – St.Lawrence/FDR* | L34P | 230 | |
| Ontario South-Frontier | | | |
| Beck-Niagara* | PA301 | 345 | |
| Beck-Niagara* | PA302 | 345 | |
| Beck-Niagara* | PA27 | 230 | |
| *Beck-Packard | BP76 | 230 | |

| Westchester - Long Island | | | |
|------------------------------------|----------------|---------------------|--|
| Name | Line ID | Voltage (kV) | |
| *Dunwoodie-Shore Road | Y50 | 345 | |
| *Sprain Brook-East Garden City | Y49 | 345 | |
| New York City - Long Island | | | |
| Name | Line ID | Voltage (kV) | |
| Jamaica-Valley Stream* | 901L&M | 138 | |
| Jamaica-Lake Success* | 903 | 138 | |

NYISO NON-OPERATING INTERFACES & MISC. FLOWS

| NY-Ontario Circulation |
|------------------------------------|
| NAME |
| Ontario (IMO)-NY Schedule |
| Ontario (IMO)-NY Actual (Negative) |
| *Beck-TSC 105 (Negative) |
| *Beck-TSC 106 (Negative) |

| UPNY-SENY - (not an operating interface) | | |
|---|----------------|---------------------|
| NAME | LINE ID | VOLTAGE (kV) |
| *Leeds-Pleasant Valley | 91 | 345 |
| *Leeds-Pleasant Valley | 92 | 345 |
| *Leeds-Hurley | 301 | 345 |
| Long Mtn-Pleasant Valley* | 398 | 345 |
| Unionville-N. Catskill* | 2 | 115 |
| Hudson-Pleasant Valley * | 12 | 115 |
| Blue Stores-Pl Valley* | 8 | 115 |
| Blue Stores-Pl Valley* | 13 | 115 |
| W. Woodbourne | 115/69* | 115/69 |
| Branchburg-Ramapo* | 5018 | 500 |
| *Coopers Corners-Rock Tavern | CCRT-34 | 345 |
| *Coopers Corners-Rock Tavern | CCRT-42 | 345 |

| SENY - IMPORT/UPNY - SENY CLOSED - (not an operating interface) | | |
|--|----------------|---------------------|
| NAME | LINE ID | VOLTAGE (kV) |
| UPNY-SENY Plus the following: | | |
| *Waldwick-South Mahwah | K3411 | 345 |
| *Waldwick-South Mahwah | J3410 | 345 |
| Hudson-Farragut* | B3402 | 345 |
| Hudson-Farragut* | C3403 | 345 |
| Linden-Goethals* | A2253 | 230 |
| *Norwalk-Northport | 1385 | 138 |

NYISO NON-OPERATING INTERFACES & MISC. FLOWS

| WEST-CENTRAL CLOSED - (not an operating interface) | | |
|---|----------------|---------------------|
| NAME | LINE ID | VOLTAGE (kV) |
| All West-Central Ties plus the following: | | |
| Saunders – St.Lawrence/FDR* | L33P* | 230 |
| Saunders – St.Lawrence/FDR* | L34P* | 230 |
| All PJM - NYISO Ties except: | | |
| *Homer City - Stolle Road | 37 | 345 |
| Erie South-South Ripley* | 69 | 230 |
| *Warren-Falconer | 171 | 115 |

| SPRAIN BROOK -DUNWOODIE SOUTH CLOSED -(not an operating interface) | | |
|---|----------------|---------------------|
| NAME | LINE ID | VOLTAGE (kV) |
| All Sprain Brook-Dunwoodie South Ties plus the following: | | |
| Hudson - Farragut | B3402 | 345 |
| Hudson - Farragut | C3403 | 345 |
| Linden - Goethals | A2253 | 230 |

| VOLNEY EAST OPEN | | |
|--------------------------------|----------------|---------------------|
| NAME | LINE ID | VOLTAGE (kV) |
| Oakdale - Fraser | 32 | 345 |
| Oakdale -Delhi | 919 | 115 |
| Willets - E. Norwich | 945 | 115 |
| Katelville - Jennison | 943 | 115 |
| Clay - Edic | 1-16 | 345 |
| Clay - Edic | 2-15 | 345 |
| JA Fitzpatrick - Edic | FE-1 | 345 |
| Lighthouse Hill - Black River | 6 | 115 |
| Lighthouse Hill - E. Watertown | 5 | 115 |
| Teall Ave - Oneida | 2 | 115 |
| Teall Ave - Bridgeport | 5 | 115 |
| Whitman - Oneida | 5 | 115 |
| Volney - Marcy | VU-19 | 345 |

NYISO NON-OPERATING INTERFACES & MISC. FLOWS

| VOLNEY EAST CLOSED | | |
|---|----------------|---------------------|
| NAME | LINE ID | VOLTAGE (kV) |
| All Volney East Open Ties plus the following: | | |
| Branchburg - Ramapo | 5018 | 500 |
| Hudson - Farragut | B-3402 | 345 |
| Hudson – Farragut | C-3403 | 345 |
| Linden - Goethals | A-2253 | 230 |
| Waldwick – So. Mahwah | K-3411 | 345 |
| Waldwick – So. Mahwah | J-3410 | 345 |
| Saunders – St.Lawrence/FDR* | L34P | 230 |
| Saunders – St.Lawrence/FDR* | L33P | 230 |

Sprainbrook/Dunwoodie South - Con Ed Cable Interface Definitions

| Line Name | Id | Voltage | I | II | III |
|-------------------------------|-------|---------|---|----|-----|
| Dunwoodie - Rainey | 71 | 345 | X | X | X |
| Dunwoodie - Rainey | 72 | 345 | X | X | X |
| Sprainbrook - W. 49 St. | M51 | 345 | X | X | X |
| Sprainbrook - W. 49 St. | M52 | 345 | X | X | X |
| Sprainbrook - Tremont | X28 | 345 | X | X | X |
| Dunwoodie So. - E. 179 St. | 99153 | 138 | X | X | X |
| Dunwoodie No. - Sherman Creek | 99031 | 138 | X | X | X |
| Dunwoodie No. - Sherman Creek | 99032 | 138 | X | X | X |
| Lake Success - Jamaica | 903 | 138 | X | X | |
| Valley Stream - Jamaica | 901 | 138 | X | X | |
| Hudson - Farragut | B2402 | 345 | | X | X |
| Hudson - Farragut | C3403 | 345 | | X | X |
| Linden - Goethals | A2253 | 230 | | X | X |
| Sprainbrook - E.G.C. | Y49 | 345 | | | X |
| Dunwoodie - Shore Rd. | Y50 | 345 | | | X |
| Norwalk - Northport | 1385 | 138 | | | X |

| | Interface Definitions | Dept. |
|-----|--|------------|
| I | Sprainbrook/Dunwoodie So. and Con Edison Cable Interface | Oper |
| II | Con Edison NYC Cable Interface - Closed | ConEd Oper |
| III | Sprainbrook/Dunwoodie So. - Closed | Plan |