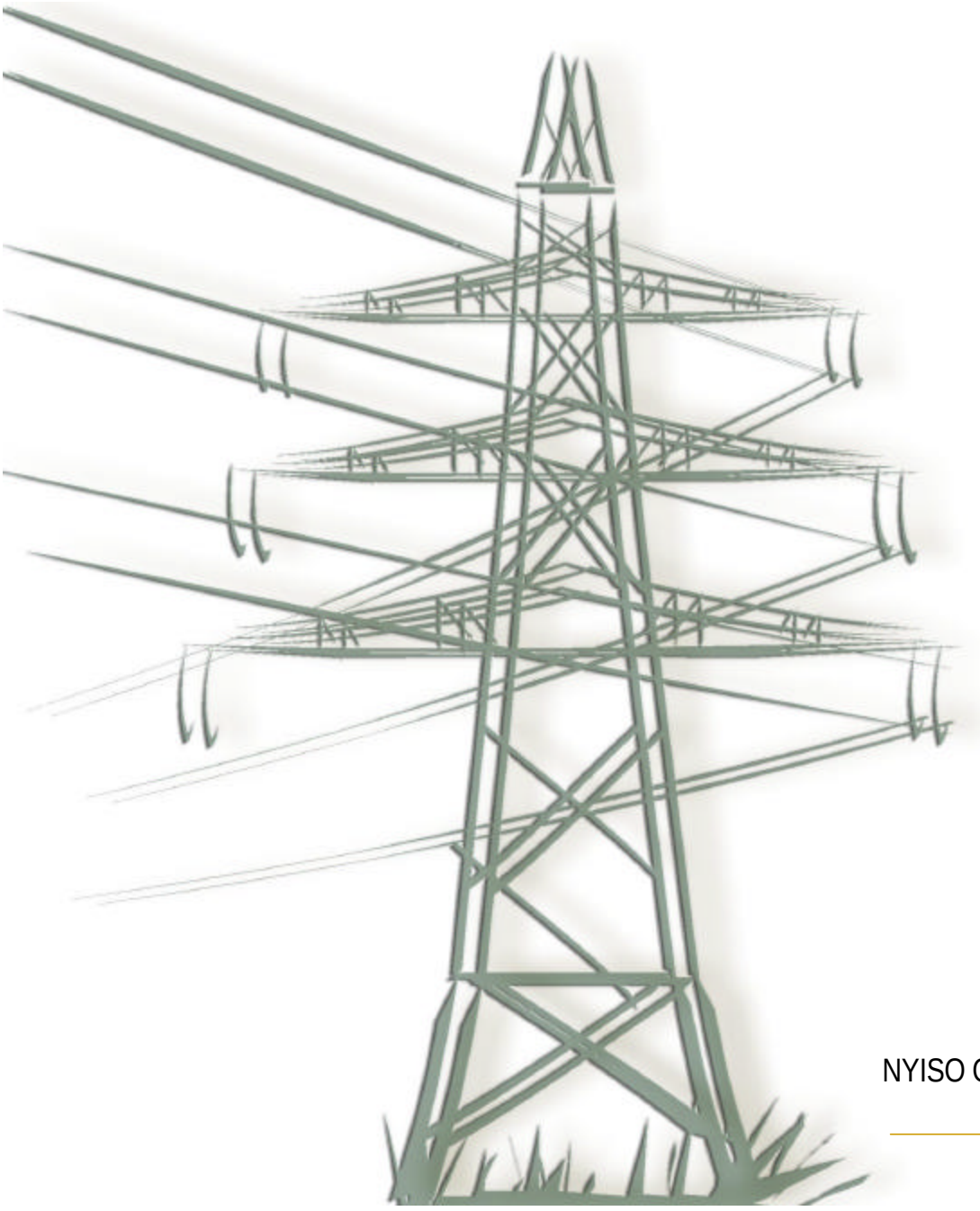
2002 TRANSMISSION PERFORMANCE REPORT



June 2003

prepared by

NYISO Operations Engineering

This page is intentionally left blank.

NYISO Transmission Performance Report – 2002

Introduction

This report summarizes NYISO transmission utilization during 2002 and compares this with transmission use in 1999, 2000, and 2001. 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).

New in this year's Transmission Performance Report is the analysis of On-Peak vs. Off-Peak transmission flow in 2002. The data is presented in two graphical formats, histograms (frequency bar charts) and flow duration curves.

Conclusions

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 scheduled imports from PJM about 87% of the time in 2002, 88% in 2001, 86% in 2000, and 66% in 1999. NY actually imported from PJM 92% of the time in 2002, 95% in 2001, 94% in 2000, and 86% in 1999. In 2002 NY scheduled imports from PJM about 77% of the time during On-Peak hours and 98% of the time during Off-Peak hours. NY actually imported from PJM in 2002 88% of the time during On-Peak hours and 99% of the time during Off-Peak hours. The highest exports to PJM occurred between June and August during the last 4 years.

In the summer months of 2002 the average NY exports to PJM were higher than in 2001 and 2000, but were lower than in 1999.

NY scheduled imports from IMO less in 2002 than in 2001 and 2000, and was about the same as in 1999. Exports to IMO increased both in magnitude and duration. NY scheduled exports to IMO 14% of time flow in 2001 and 25% in 2002. In 2002, NY scheduled exports to IMO 35% of the time during the On-Peak hours and 15% during the Off-Peak hours. In the winter months of 2002 the average scheduled NY exports to Ontario were larger than in the previous three years and the largest schedule exports to IMO occurred between September and December.

NY scheduled exports and imports from NE the same percentage of time in 2002, compared to 87% of the time scheduled export and 13% of the time scheduled import in 2001. During the On-Peak hours NY imported from NE about 52% of time and about 42% of the time during the Off-Peak hours.

In the past three years NY has scheduled imports from TE the same percentage of time. In 2002 NY scheduled imports from TE about 80% during the On-Peak hours and 35% during the Off-Peak hours. Scheduled imports from TE were below 1000 MW about 37% of the time and below 700 MW about 30% of the time in 2002.

Average transmission utilization on most internal NYISO operating interfaces in 2002 was similar to levels observed in 2001. The Total East interface was consistently operated near its limit, however the margin to limit is higher in 2002 than in 2001. Total East interface was above its limit of 5450 MW about 2% of the time in 2002 compared to 3% in 2001, 10% in 2000, and 3 % in 1999. The Central East interface was also consistently near its limit, but its flow was lower in 2002 than previous years.

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 2002 the Central East flow was greater than 1650 MW is 40%. Total East flow was greater than 3750 MW is 62% of the time and operated to within 200 MW of its active operating limits less than 1% of the time.

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
2002	1540MW	29%	3486MW	<1%
2001	1827MW	42%	3795MW	<1%
2000	2021 MW	68%	4231 MW	< 1%
1999	1697MW	26%	3375 MW	1%

Moses South (Adirondack-Central Transmission Path) flows in 2002 were similar to levels observed in 2001. Flows were north less than 3% 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 (2002). 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 ±150 and 600 MW ±150. The length of the bars represents 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, 2002, and the previous three years (1999, 2000, and 2001). 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 (2002) and the previous three years (1999-2001). 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 green horizontal 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 green 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 place 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 calculating by taking the active directional transfer limit and subtracting the real time flow at each (5 minute) scan.

Transfer Margin = Transfer Limit $_{\text{directional}}$ - ABS (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 2002 has midpoints at 600 and 1000 MW. The bar at 1000 means that Total East was operating within 400 MW of its active limit 4.01% of the time during 2002. The bar at 2200 means that Total East was operating at levels potentially up to 2400 MW above its active limit 20.31% of the time during 2002. 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 flow 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 1999, 2000, 2001 and 2002. 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 69 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 4% to 22% of the time in a given year between 1999 and 2002. Only the Central East/Central East net PC appeared 8% of the time or more. Most of the rest of the simultaneous constraints occurred 7% 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. In 2002, the Central East/Total East combination was not constraining. 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
1999	382	4.0%	360	3.8%
2000	1921	22.0%	1874	21.4%
2001	1252	14.0%	1243	14.0%
2002	819	9.0%	819	9.0%

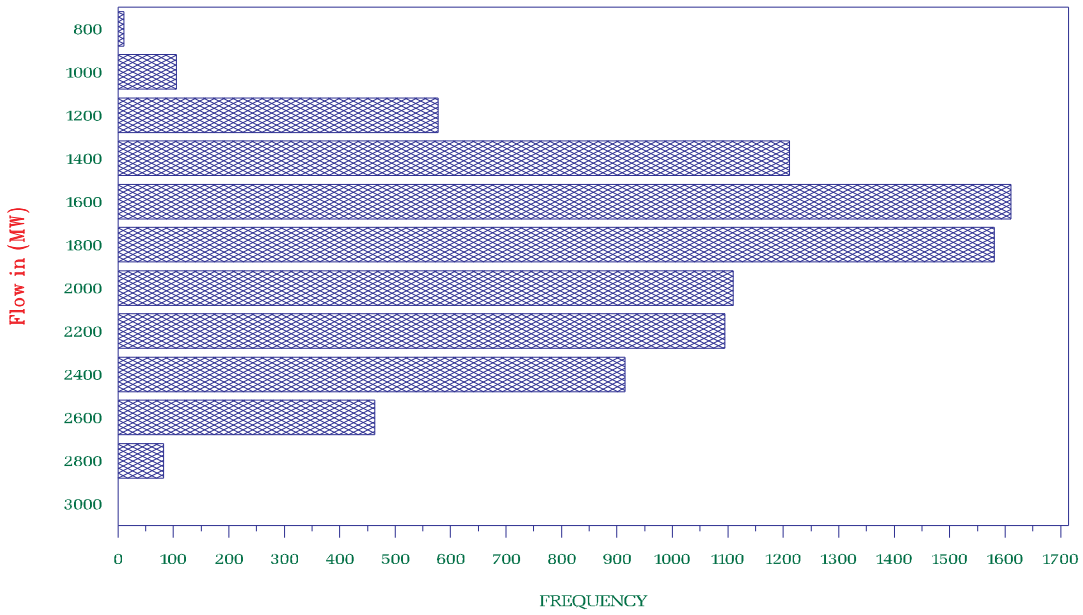
Further restrictions are also likely by virtue of individual line constraints. The analysis presented here only used interface flow related data. Interfaces, or Transmission Paths (to use the new terminology) are often implicitly limited by a single element for some contingency (e.g., the loss of one Leeds-Pleasant Valley 345 kV circuit on the parallel Leeds-Pleasant Valley 345 kV circuit). This contingency implicitly limits both Central East and UPNY-Con Ed. This is not reflected as an explicit interface limit and outside the context of this analysis. The overall trend from 1999 to 2002 is decreased simultaneous interface limits; this may be the result of Central East, by itself, being more constraining.

Appendix A – Power Flows

TABLE OF CONTENTS

NYISO Frequency Interface Flow For January – December 2002

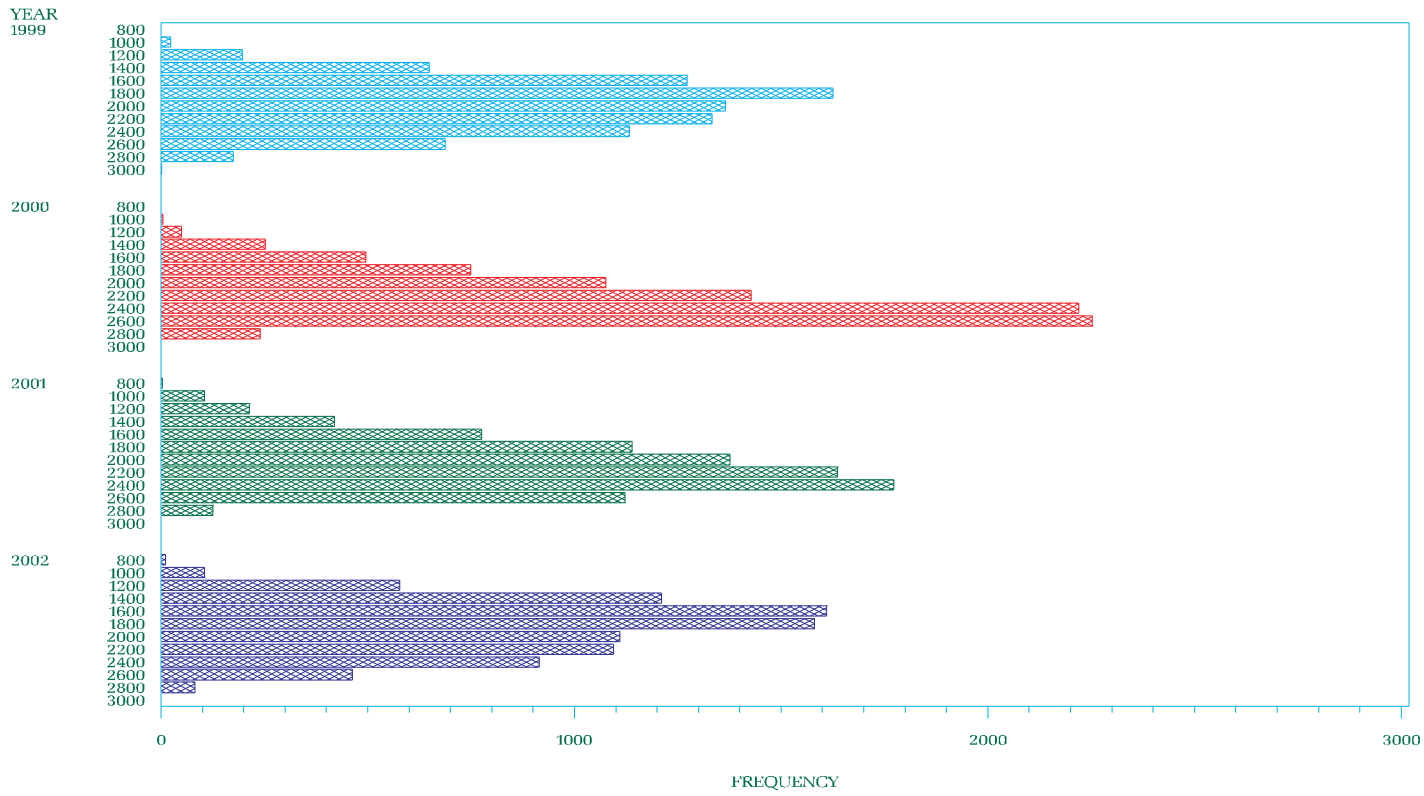
CENTRAL EAST



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
800	11	11	0.13	0.13
1000	106	117	1.21	1.34
1200	577	694	6.59	7.92
1400	1211	1905	13.82	21.75
1600	1610	3515	18.38	40.13
1800	1580	5095	18.04	58.16
2000	1110	6205	12.67	70.83
2200	1095	7300	12.50	83.33
2400	915	8215	10.45	93.78
2600	463	8678	5.29	99.06
2800	82	8760	0.94	100.00
3000	0	8760	0.00	100.00

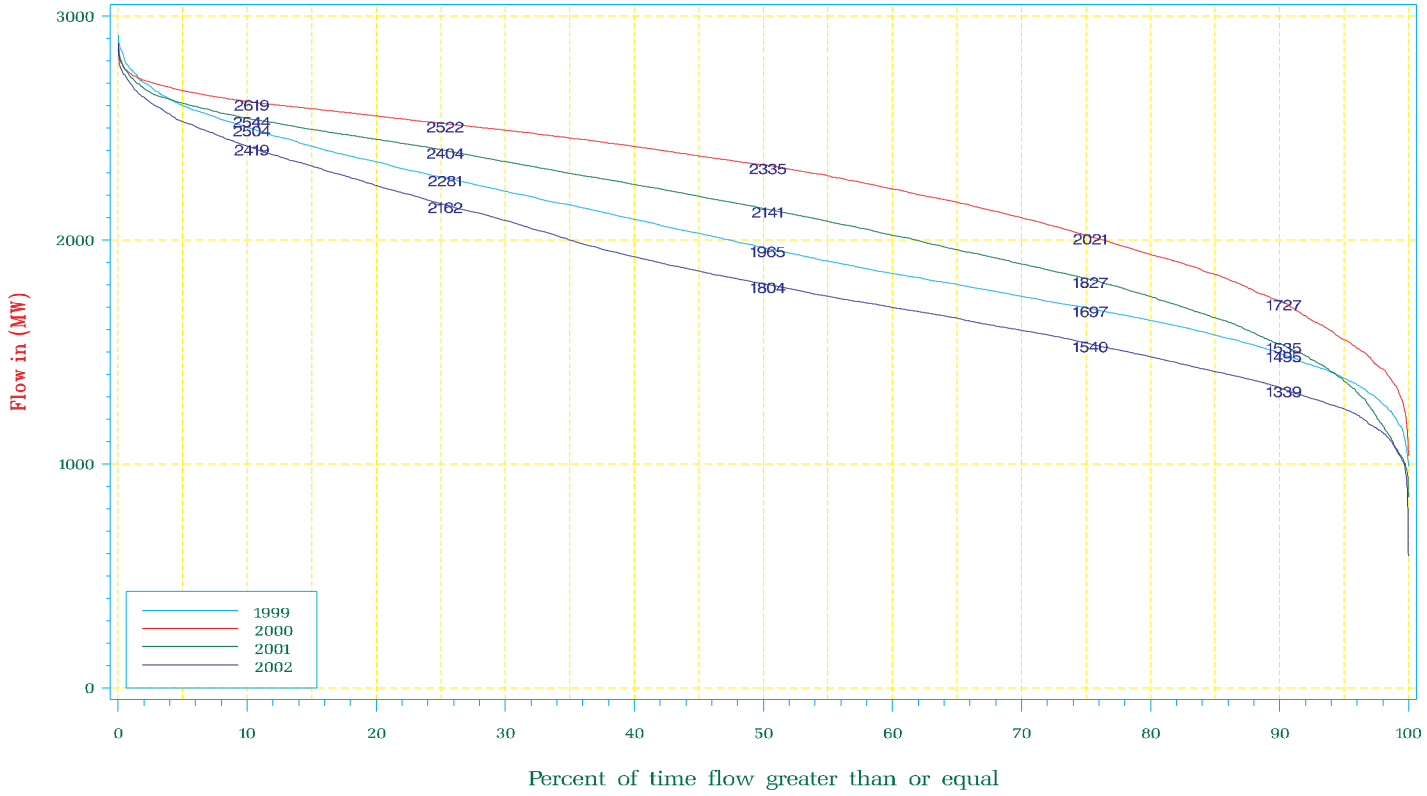
NYISO Frequency Interface Flow For January 1999 – December 2002

CENTRAL EAST



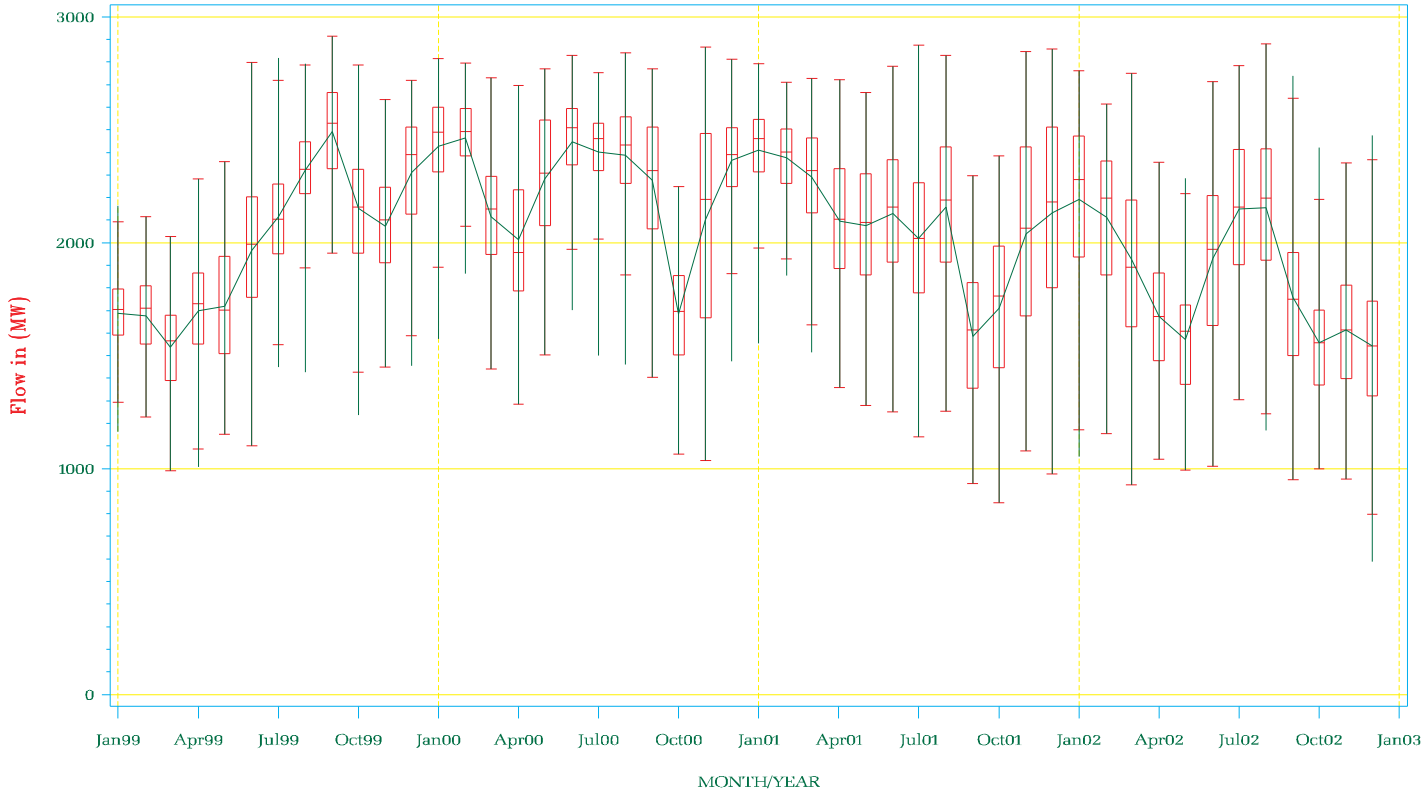
NYISO Percent of time Interface Flow For January 1999 – December 2002

CENTRAL EAST



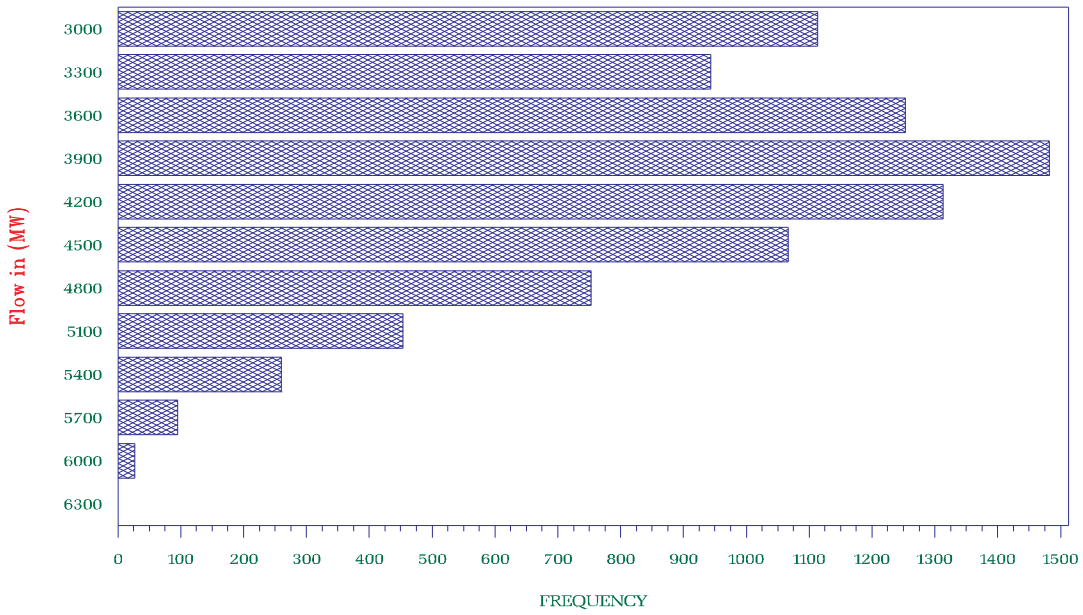
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

CENTRAL EAST



NYISO Frequency Interface Flow For January – December 2002

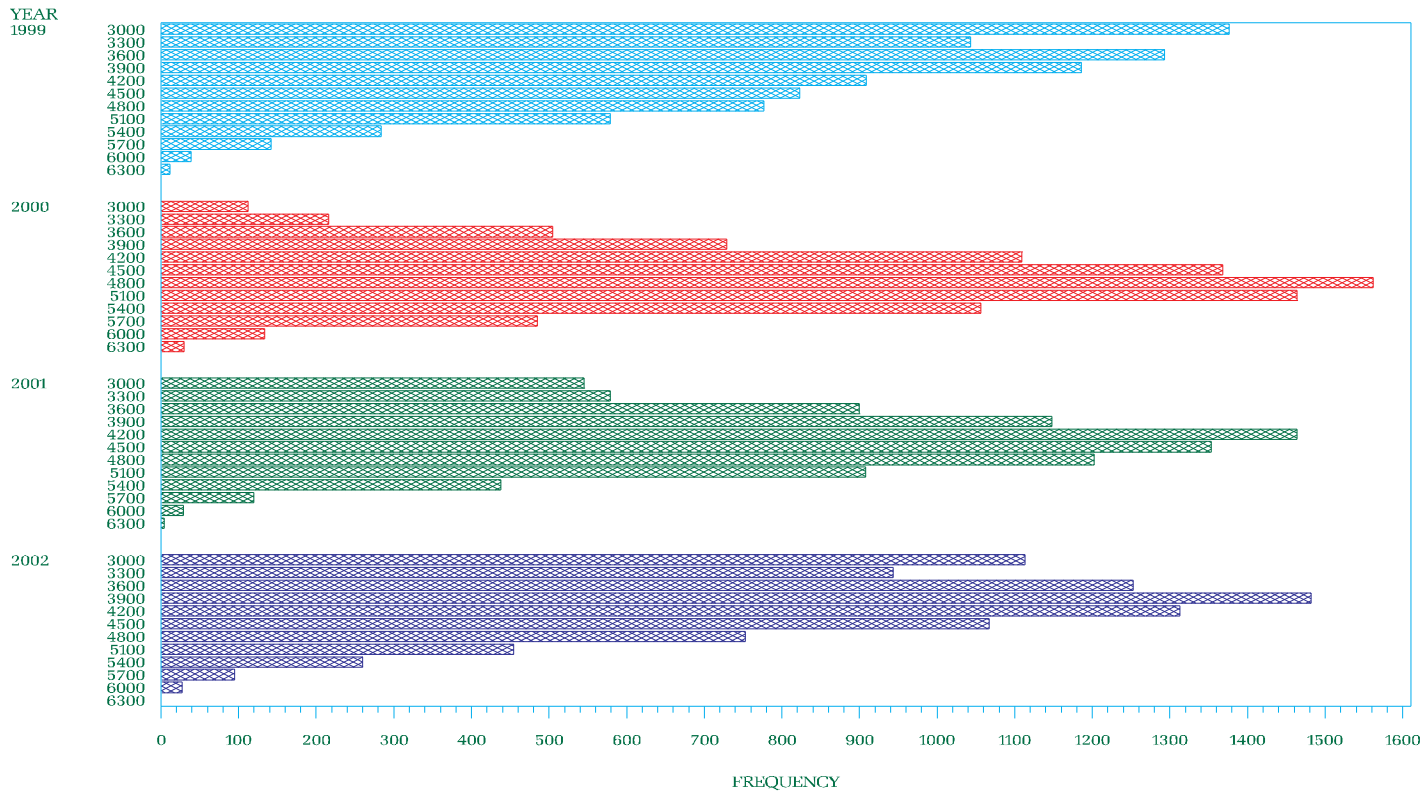
TOTAL EAST



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
3000	1113	1113	12.71	12.71
3300	943	2056	10.76	23.47
3600	1253	3309	14.30	37.77
3900	1482	4791	16.92	54.69
4200	1313	6104	14.99	69.68
4500	1067	7171	12.18	81.86
4800	753	7924	8.60	90.46
5100	454	8378	5.18	95.64
5400	260	8638	2.97	98.61
5700	95	8733	1.08	99.69
6000	27	8760	0.31	100.00
6300	0	8760	0.00	100.00

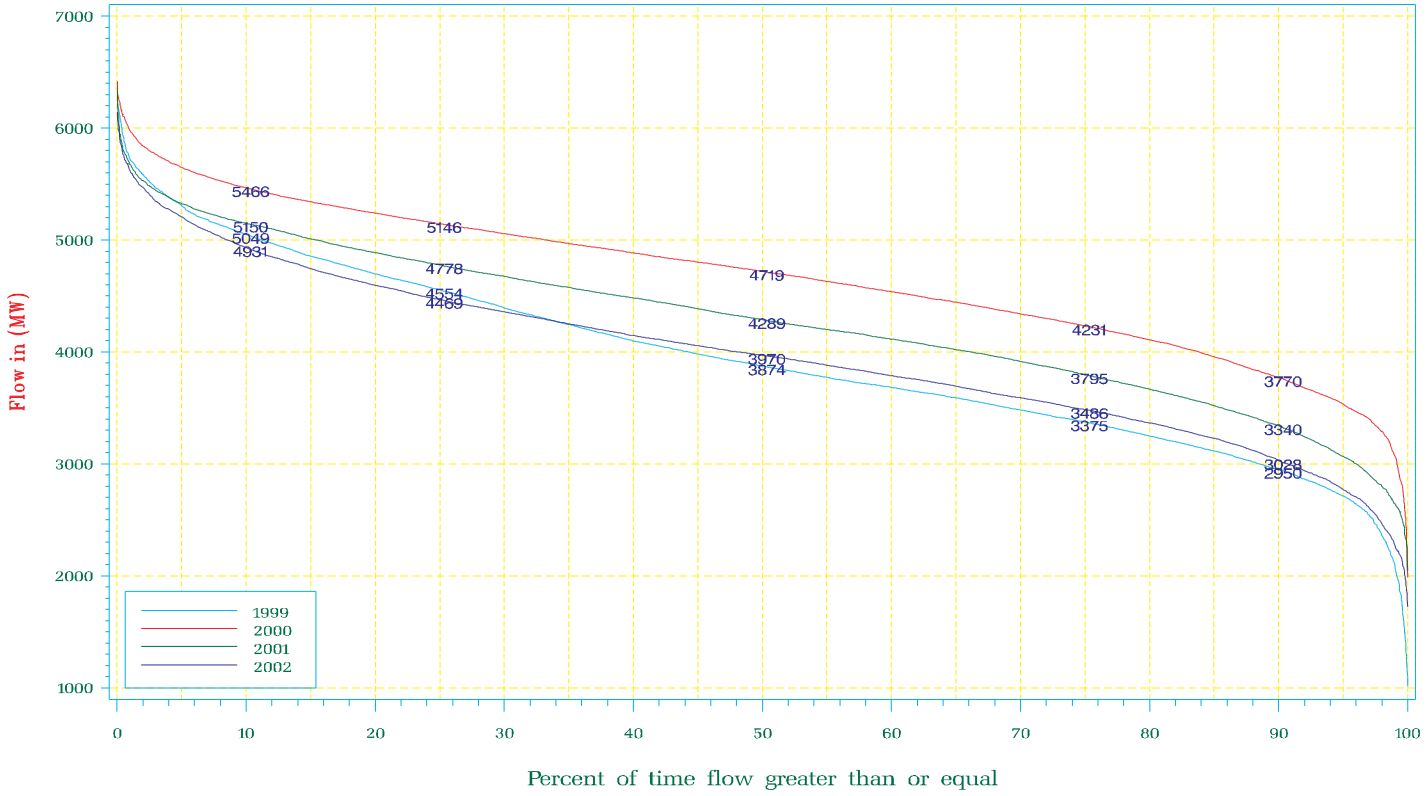
NYISO Frequency Interface Flow For January 1999 – December 2002

TOTAL EAST



NYISO Percent of time Interface Flow For January 1999 – December 2002

TOTAL EAST

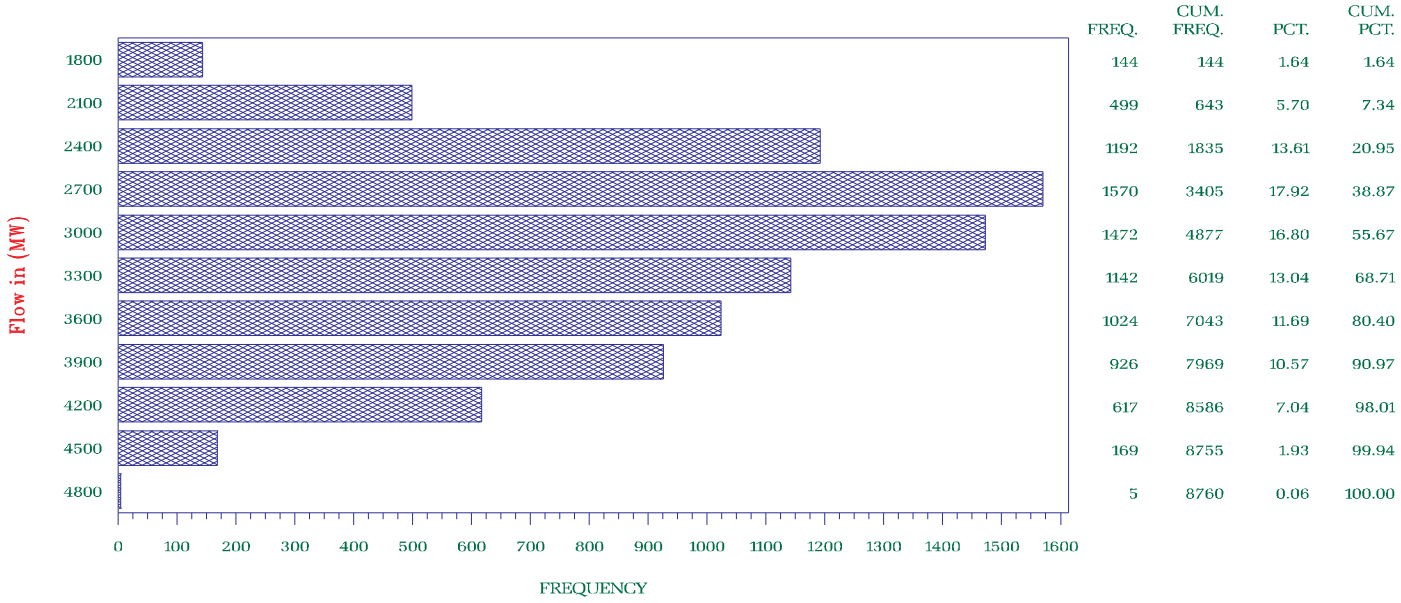


NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

TOTAL EAST

NYISO Frequency Interface Flow For January – December 2002

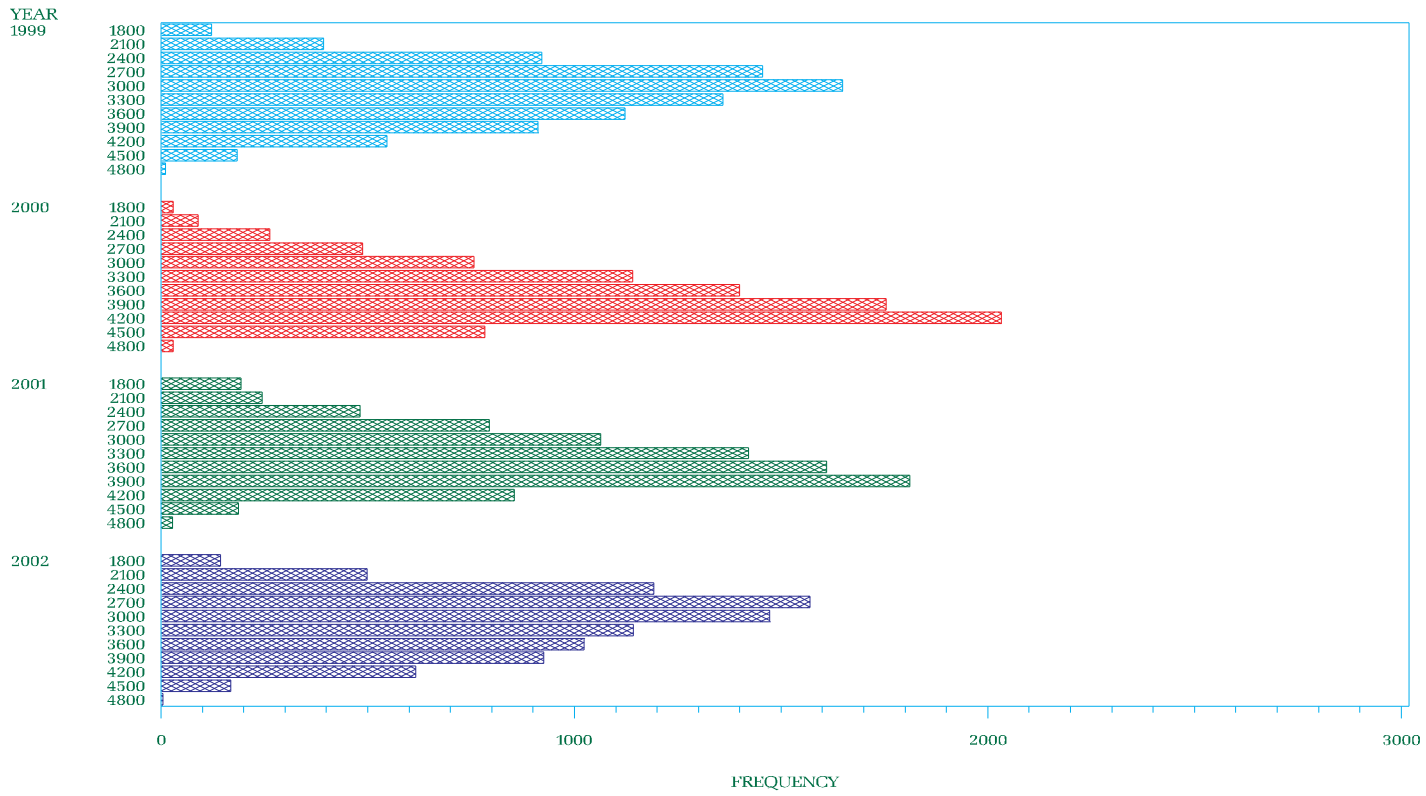
Central – Capital/Mid Hudson



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1800	144	144	1.64	1.64
2100	499	643	5.70	7.34
2400	1192	1835	13.61	20.95
2700	1570	3405	17.92	38.87
3000	1472	4877	16.80	55.67
3300	1142	6019	13.04	68.71
3600	1024	7043	11.69	80.40
3900	926	7969	10.57	90.97
4200	617	8586	7.04	98.01
4500	169	8755	1.93	99.94
4800	5	8760	0.06	100.00

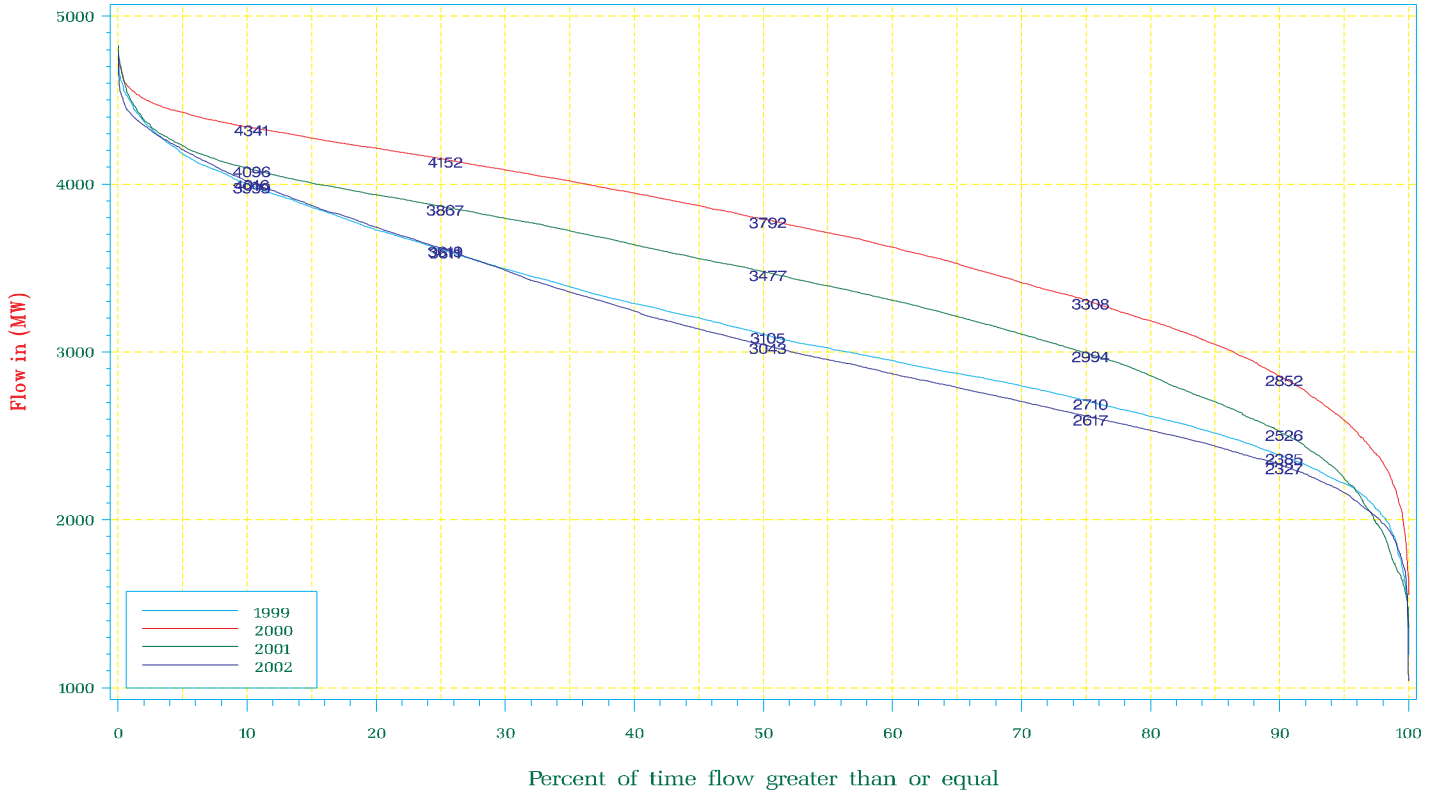
NYISO Frequency Interface Flow For January 1999 – December 2002

Central – Capital/Mid Hudson



NYISO Percent of time Interface Flow For January 1999 – December 2002

Central – Capital/Mid Hudson

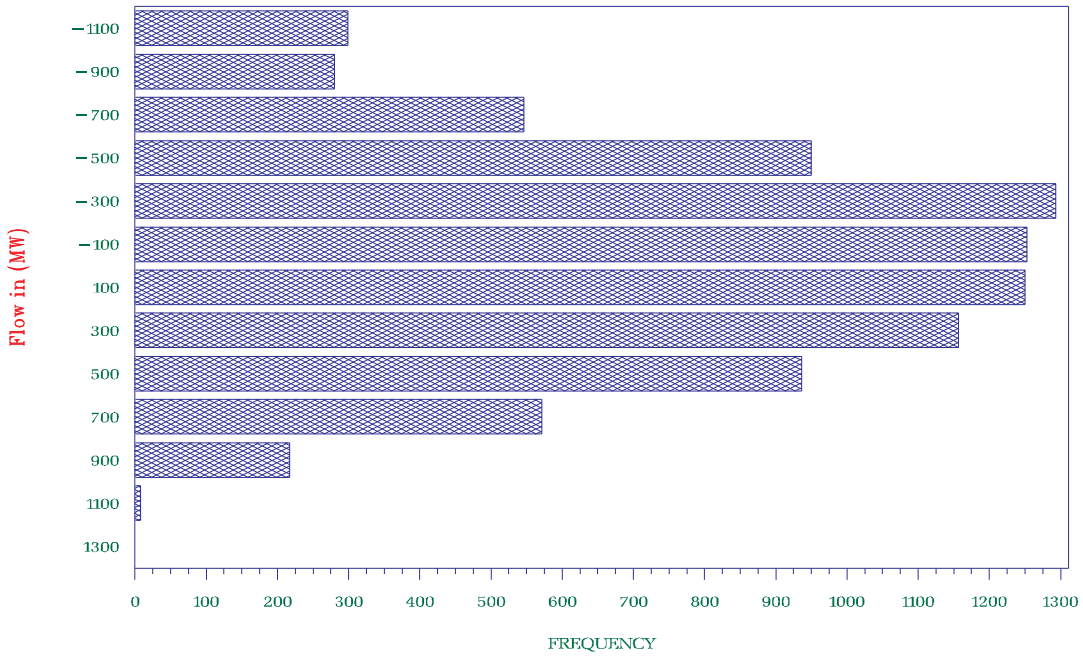


NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Central – Capital/Mid Hudson

NYISO Frequency Interface Flow For January – December 2002

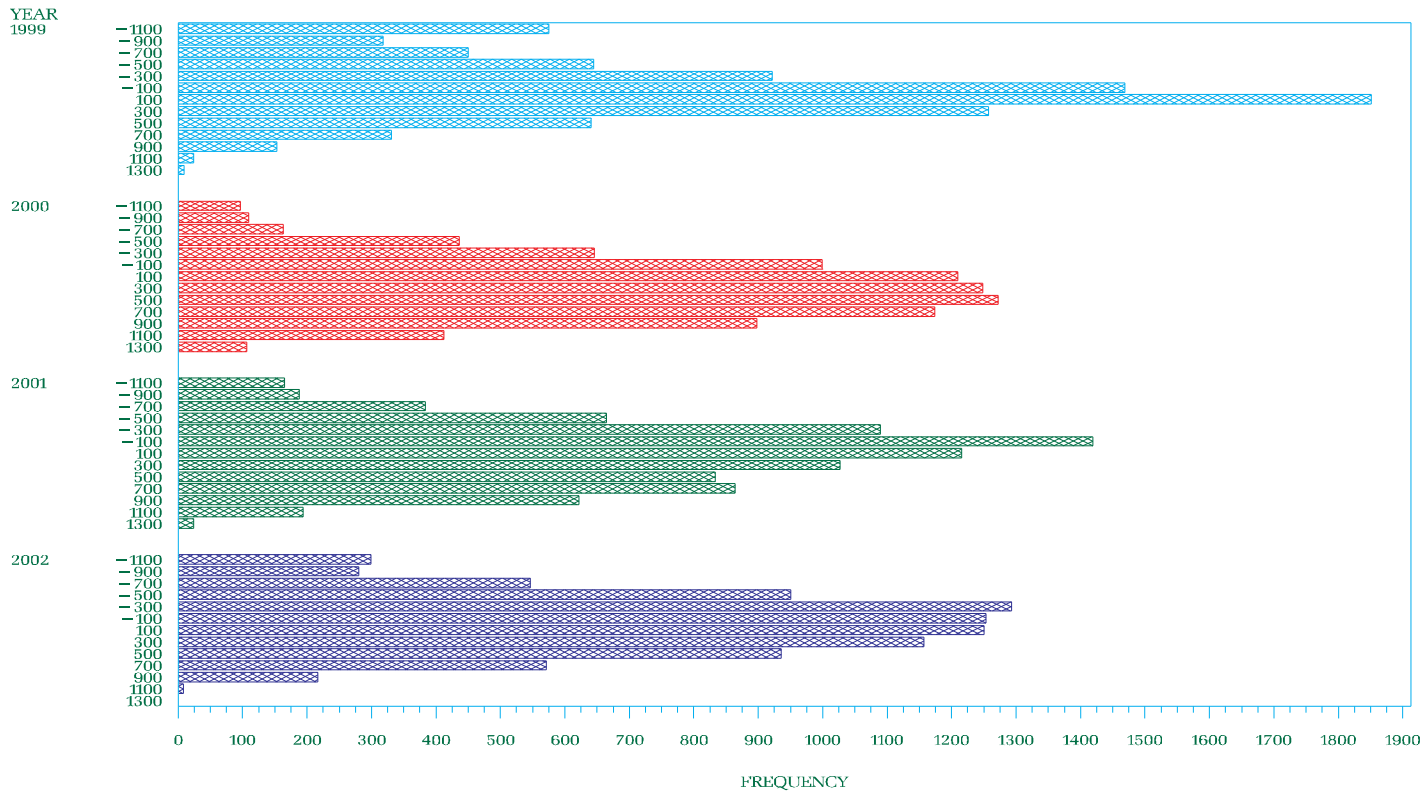
PJM East – Capital/Mid Hudson



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-1100	299	299	3.41	3.41
-900	280	579	3.20	6.61
-700	546	1125	6.23	12.84
-500	950	2075	10.84	23.69
-300	1293	3368	14.76	38.45
-100	1253	4621	14.30	52.75
100	1250	5871	14.27	67.02
300	1157	7028	13.21	80.23
500	936	7964	10.68	90.91
700	571	8535	6.52	97.43
900	217	8752	2.48	99.91
1100	8	8760	0.09	100.00
1300	0	8760	0.00	100.00

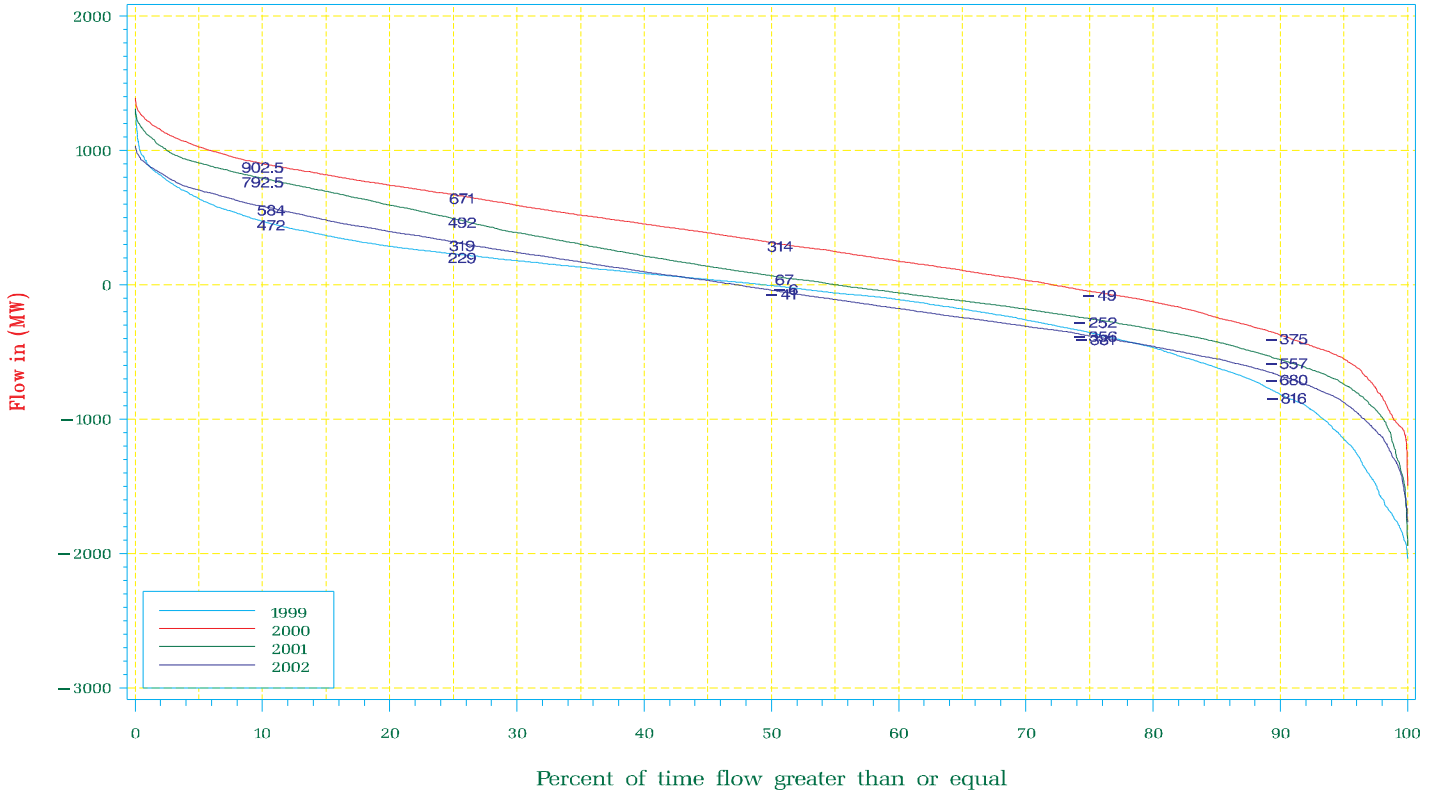
NYISO Frequency Interface Flow For January 1999 – December 2002

PJM East – Capital/Mid Hudson



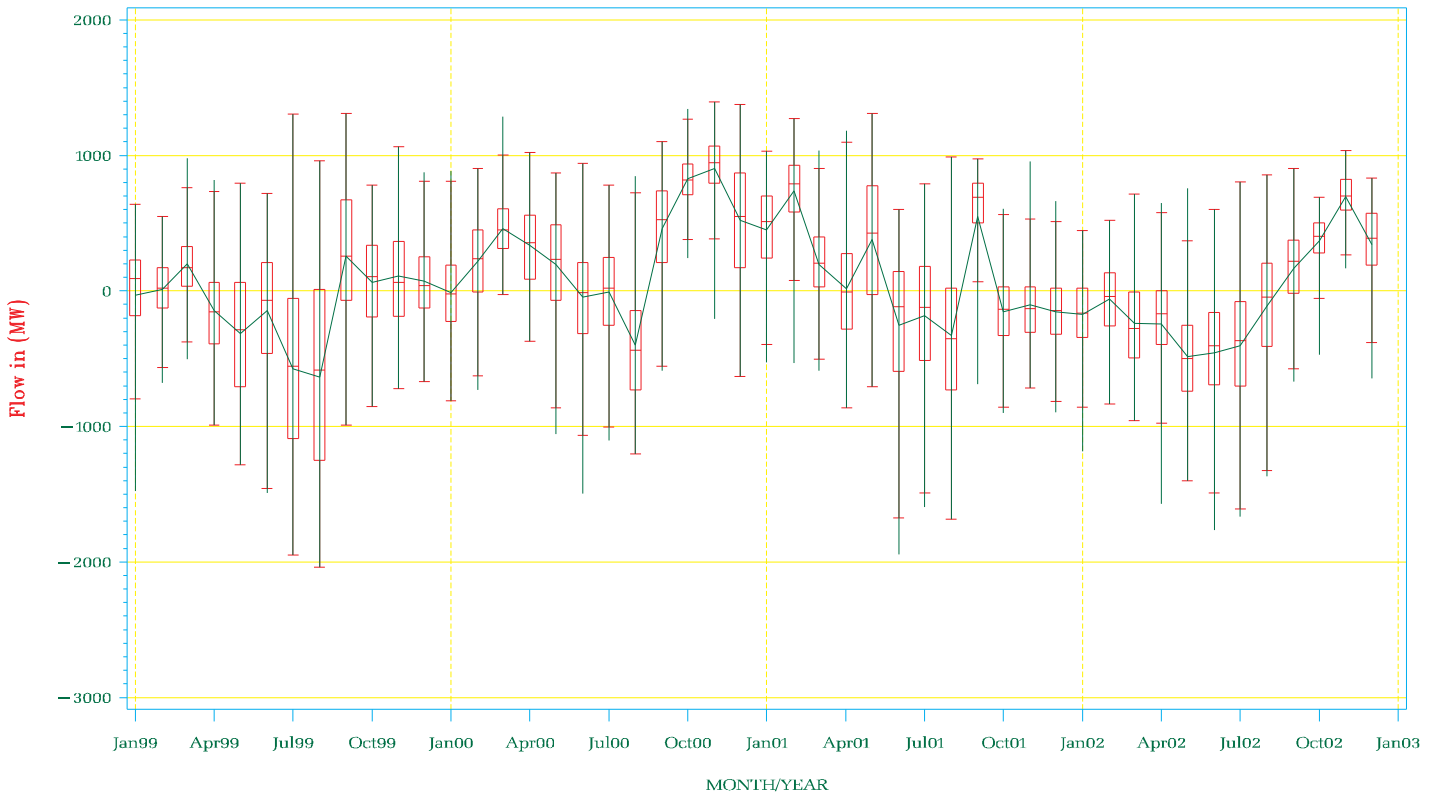
NYISO Percent of time Interface Flow For January 1999 – December 2002

PJM East – Capital/Mid Hudson



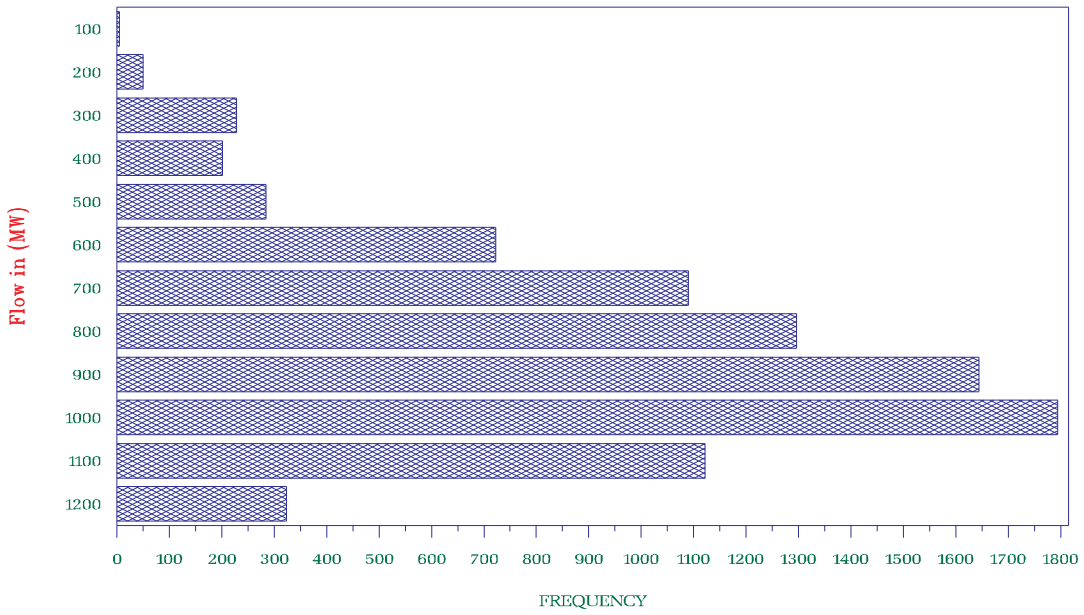
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

PJM East – Capital/Mid Hudson



NYISO Frequency Interface Flow For January – December 2002

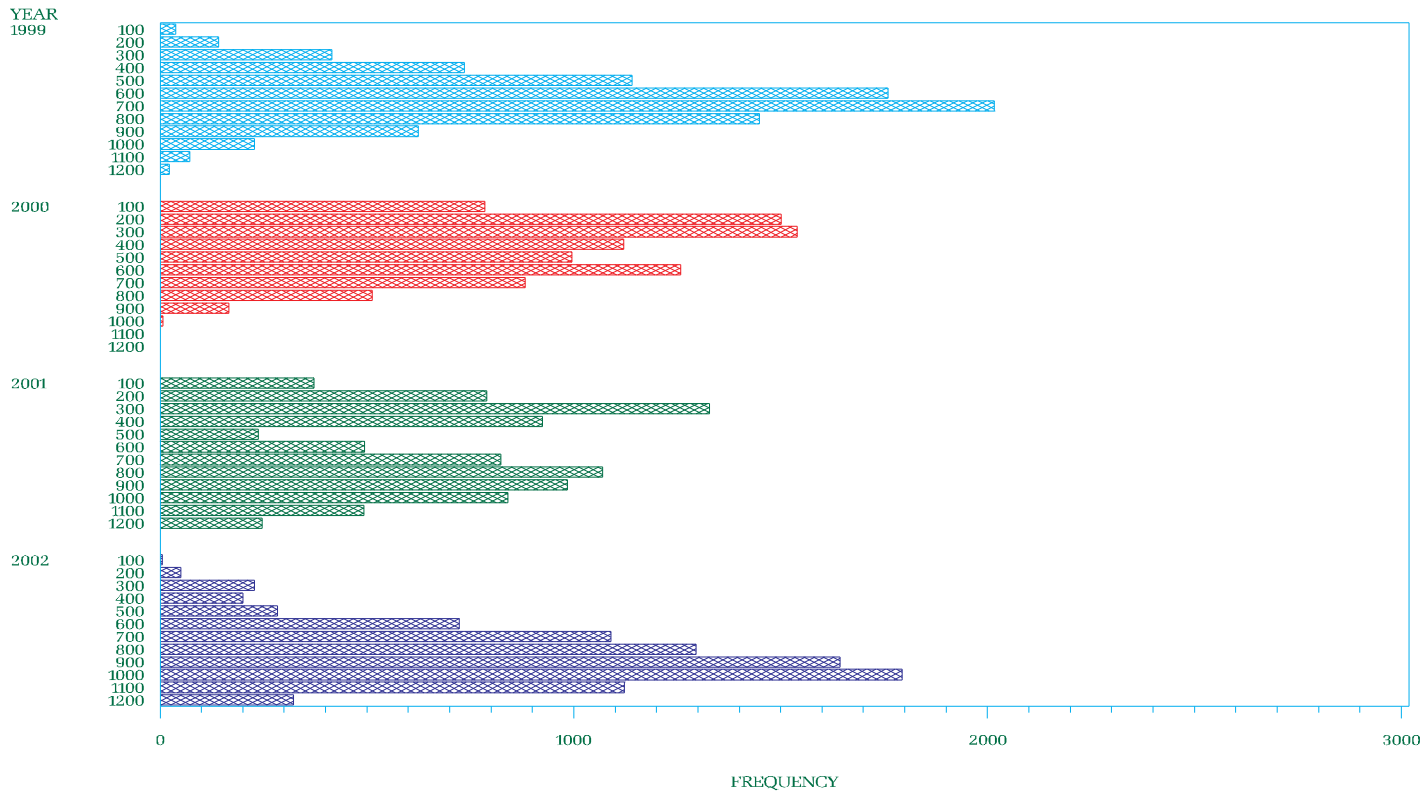
PJM East – New York City



Flow in (MW)	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
100	5	5	0.06	0.06
200	50	55	0.57	0.63
300	228	283	2.60	3.23
400	201	484	2.29	5.53
500	284	768	3.24	8.77
600	723	1491	8.25	17.02
700	1090	2581	12.44	29.46
800	1296	3877	14.79	44.26
900	1644	5521	18.77	63.03
1000	1794	7315	20.48	83.50
1100	1122	8437	12.81	96.31
1200	323	8760	3.69	100.00

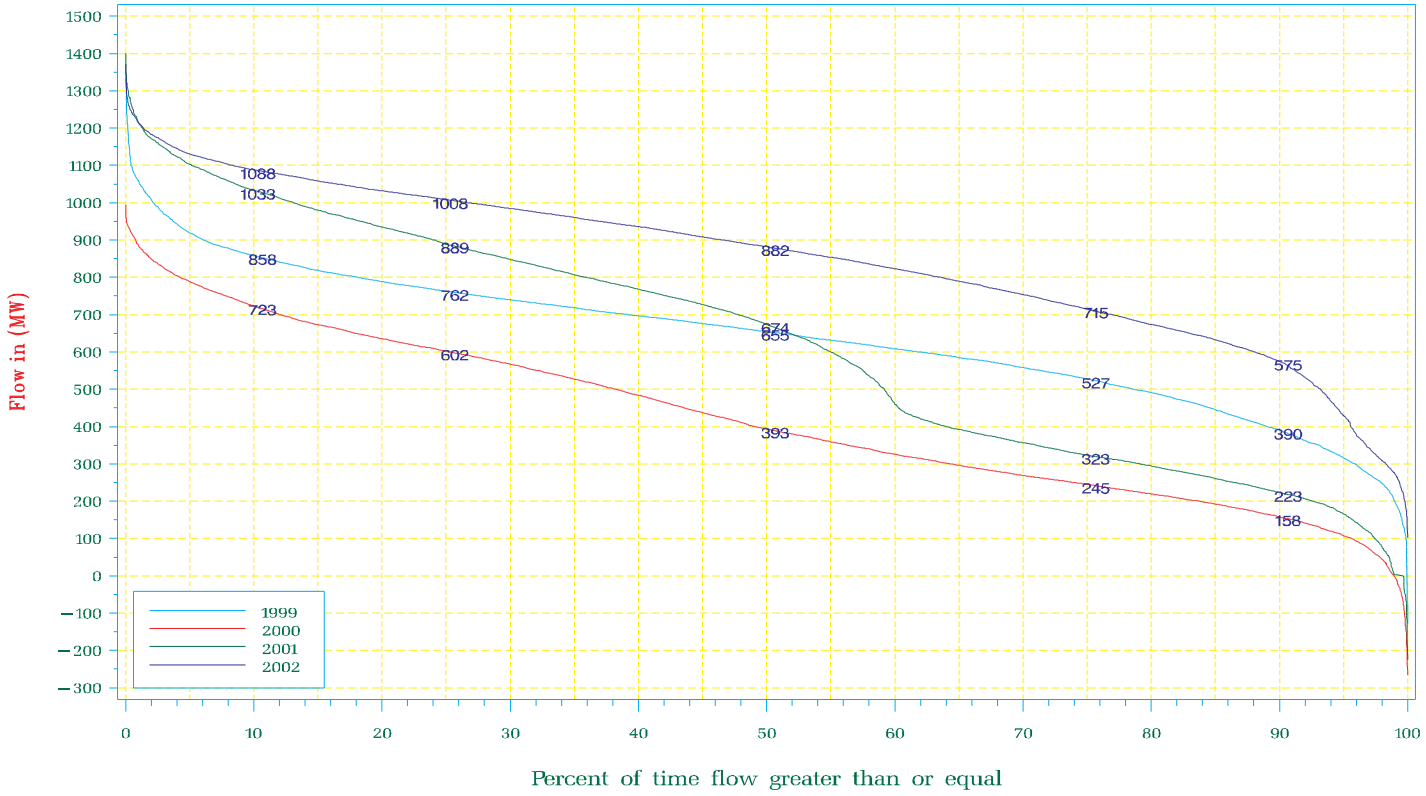
NYISO Frequency Interface Flow For January 1999 – December 2002

PJM East – New York City



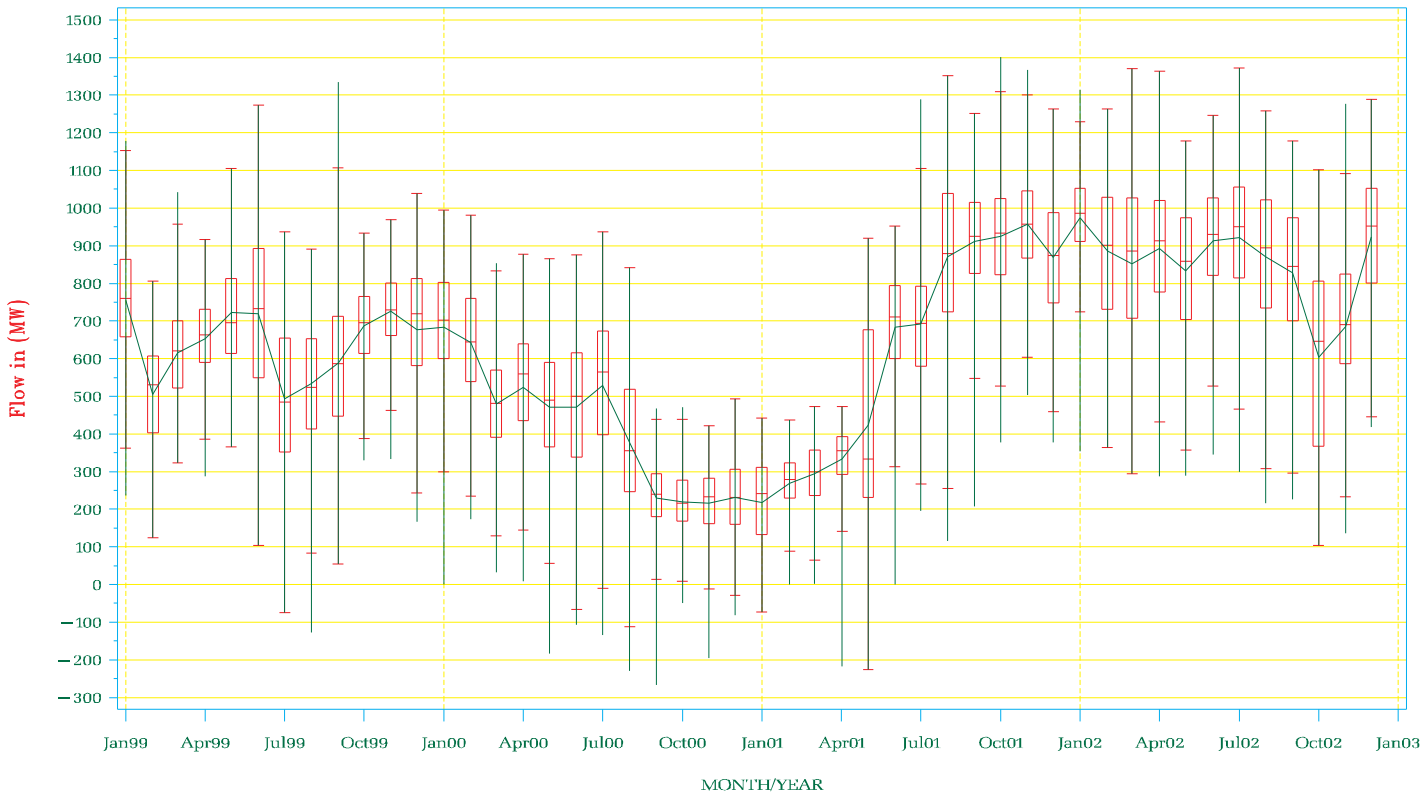
NYISO Percent of time Interface Flow For January 1999 – December 2002

PJM East – New York City



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

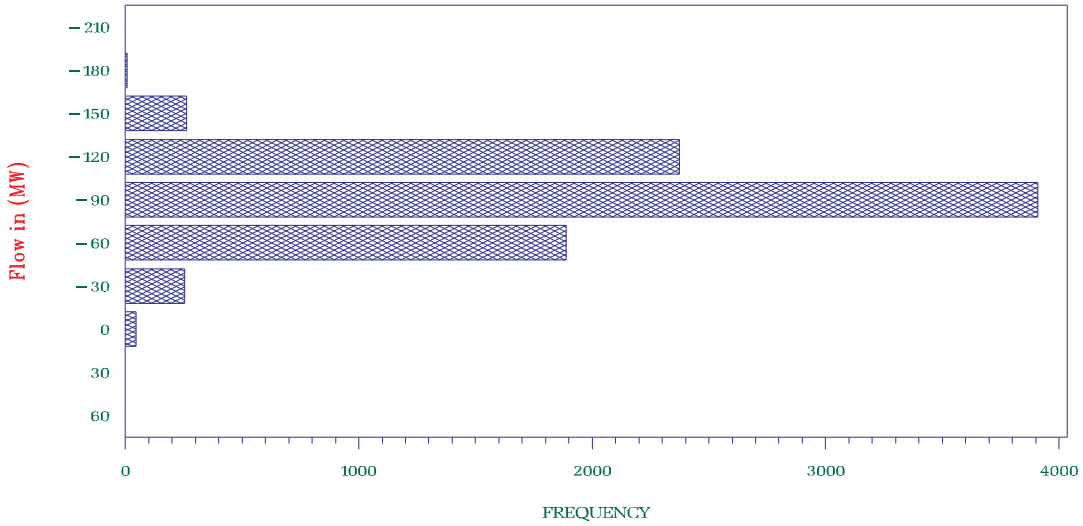
PJM East – New York City



NYISO Frequency Interface Flow For January – December 2002

NE/Vt. North – Adirondack

PV – 20 Grand Isle – Plattsburgh

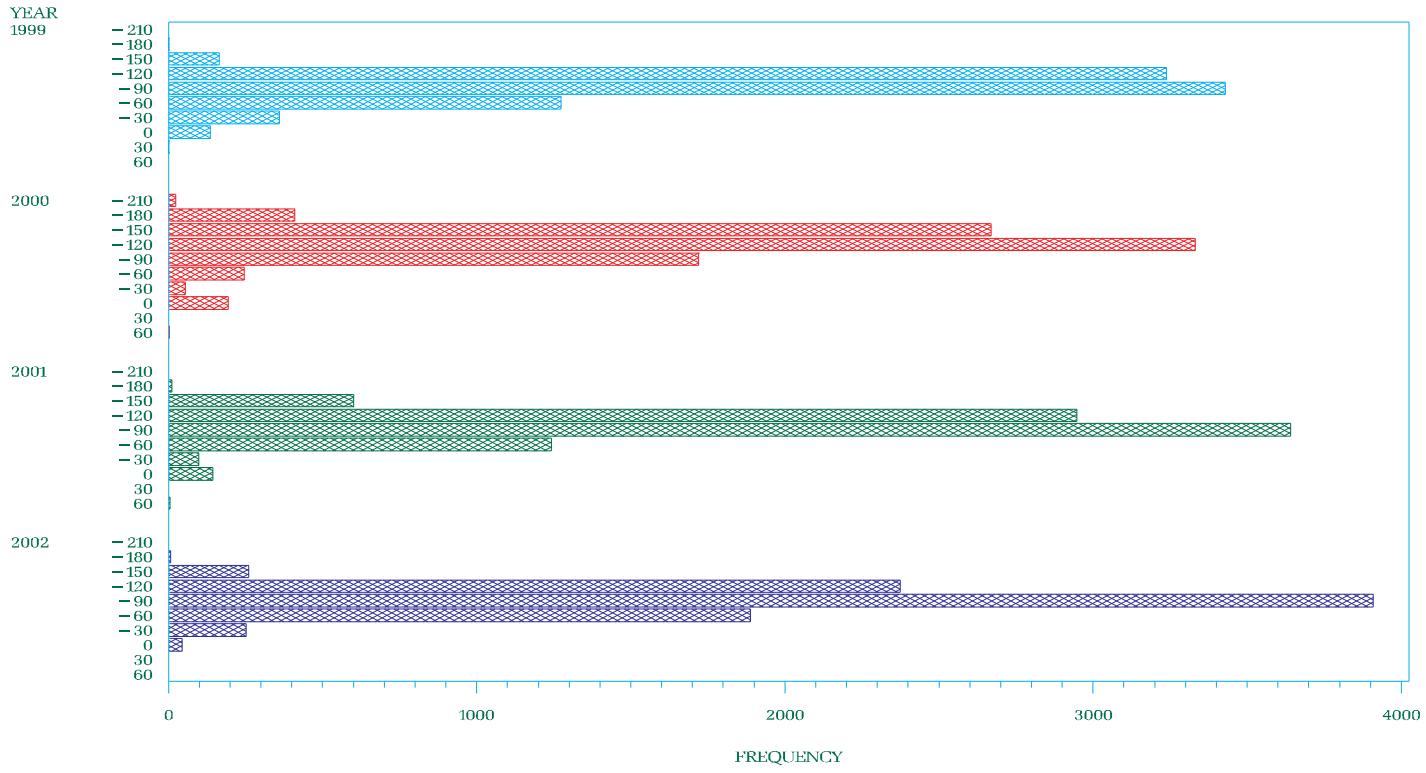


	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
– 210	0	0	0.00	0.00
– 180	7	7	0.08	0.08
– 150	261	268	2.99	3.07
– 120	2375	2643	27.18	30.24
– 90	3909	6552	44.73	74.97
– 60	1889	8441	21.62	96.59
– 30	253	8694	2.90	99.49
0	45	8739	0.51	100.00
30	0	8739	0.00	100.00
60	0	8739	0.00	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

NE/Vt. North – Adirondack

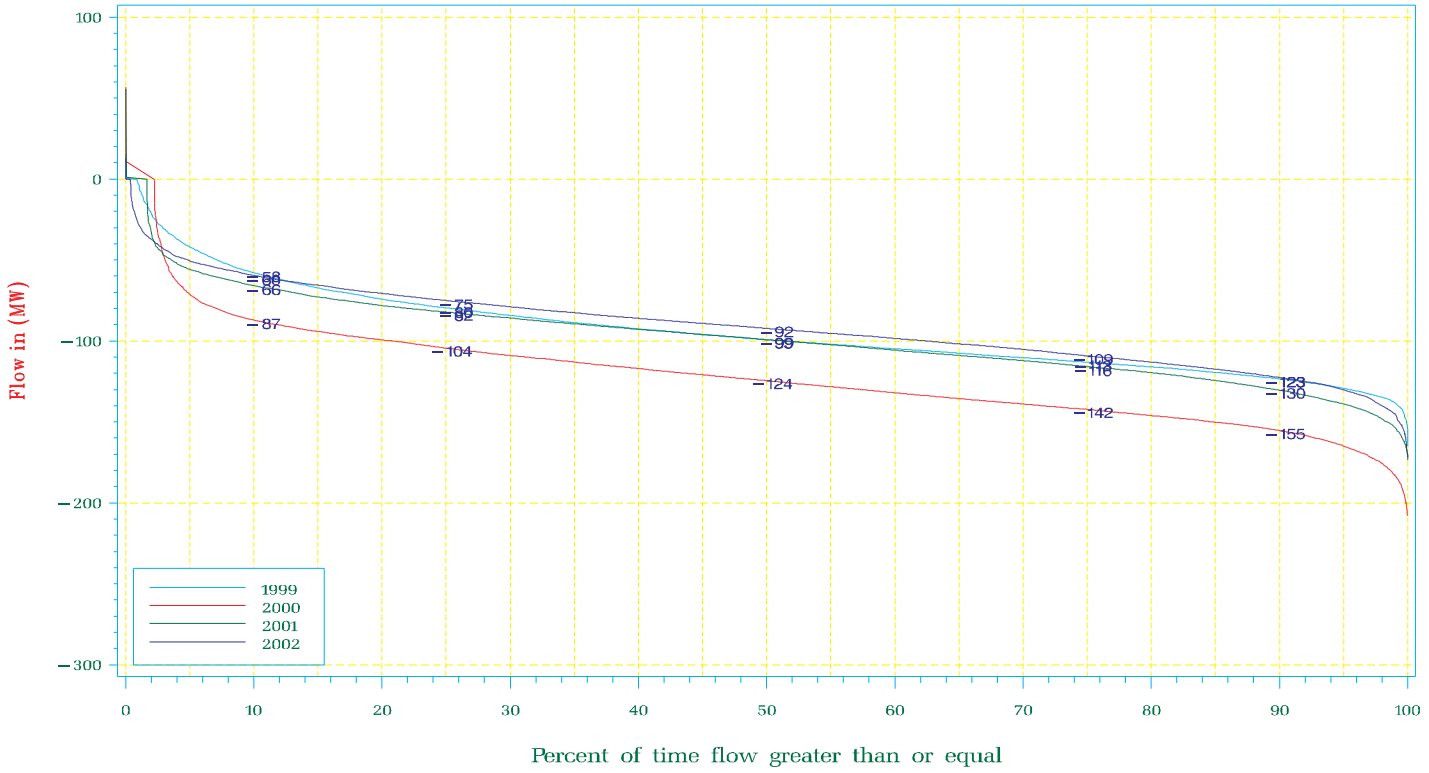
PV – 20 Grand Isle – Plattsburgh



NYISO Percent of time Interface Flow For January 1999 – December 2002

NE/Vt. North – Adirondack

PV – 20 Grand Isle – Plattsburgh



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

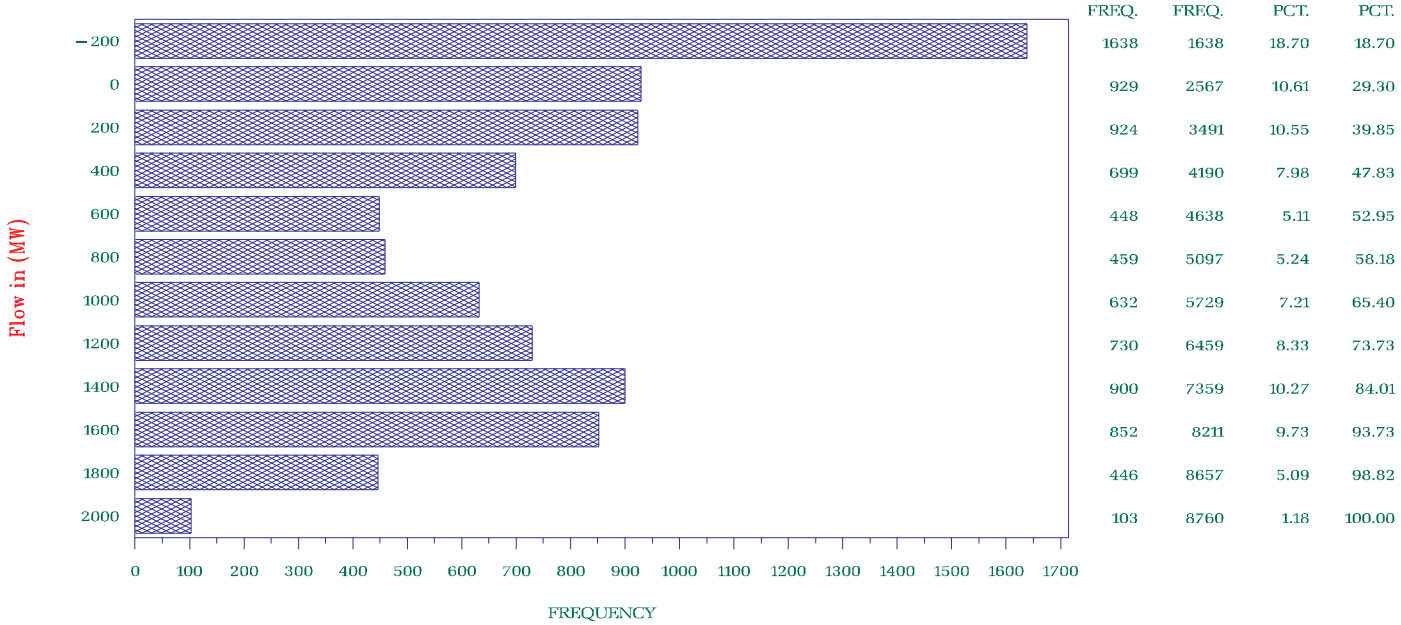
NE/Vt. North – Adirondack

PV – 20 Grand Isle – Plattsburgh

NYISO Frequency Interface Flow For January – December 2002

MOSES SOUTH

Adirondack – Central

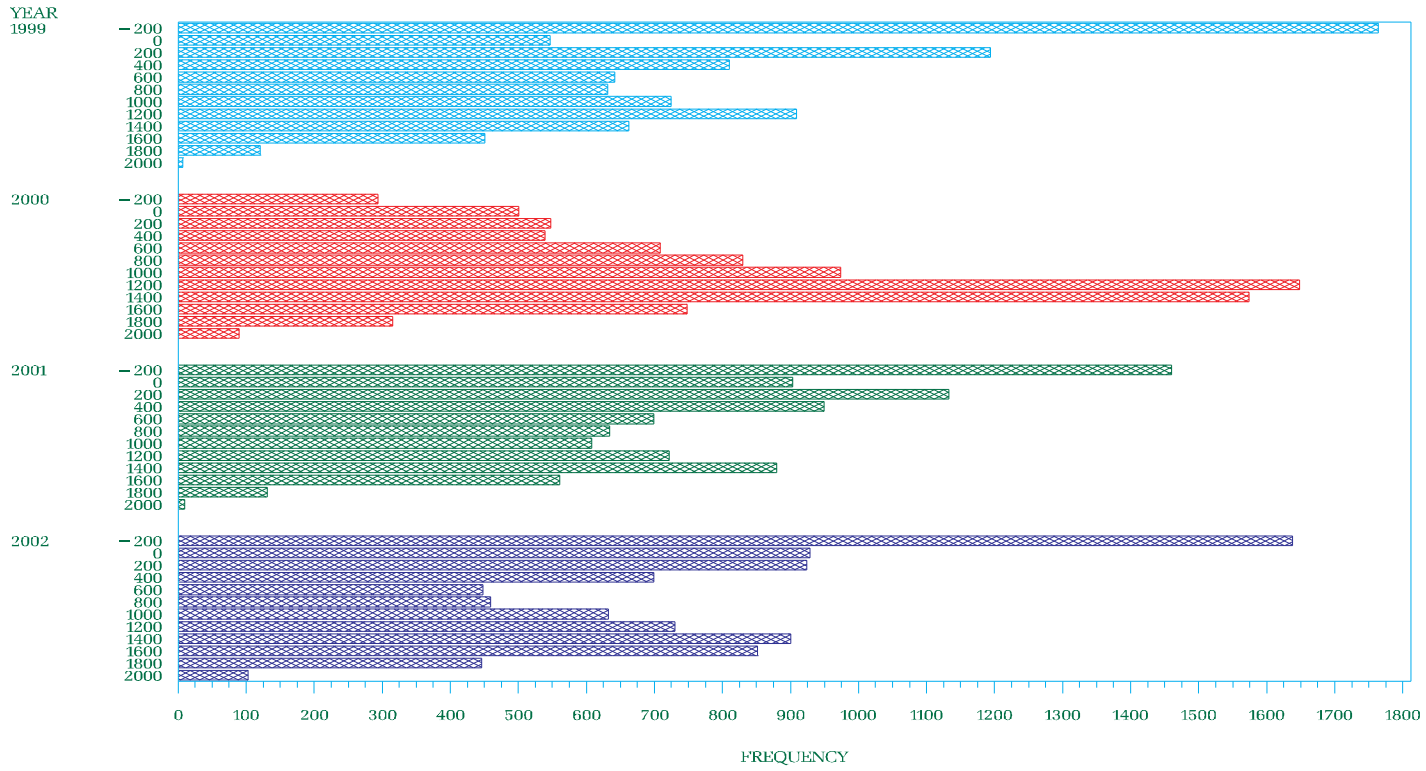


	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-200	1638	1638	18.70	18.70
0	929	2567	10.61	29.30
200	924	3491	10.55	39.85
400	699	4190	7.98	47.83
600	448	4638	5.11	52.95
800	459	5097	5.24	58.18
1000	632	5729	7.21	65.40
1200	730	6459	8.33	73.73
1400	900	7359	10.27	84.01
1600	852	8211	9.73	93.73
1800	446	8657	5.09	98.82
2000	103	8760	1.18	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

MOSES SOUTH

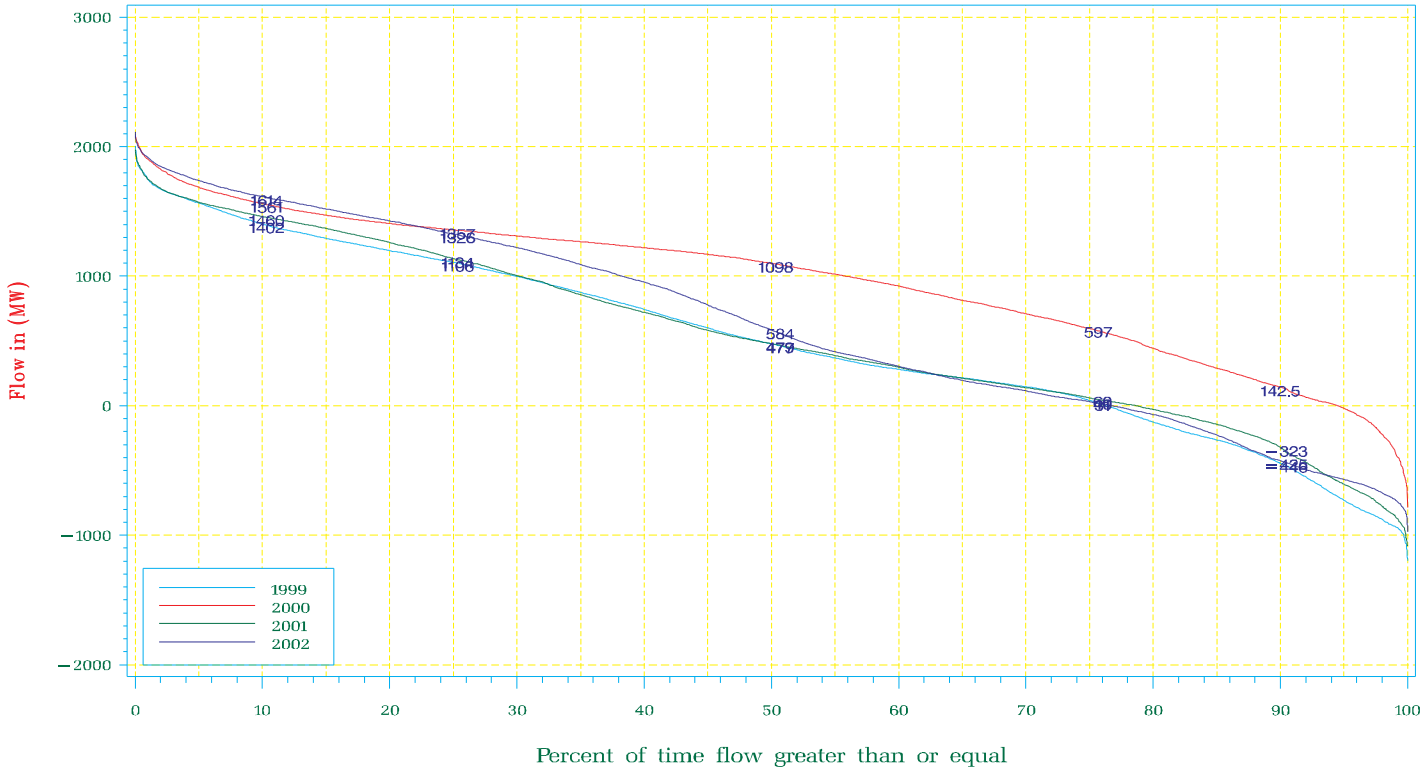
Adirondack – Central



NYISO Percent of time Interface Flow For January 1999 – December 2002

MOSES SOUTH

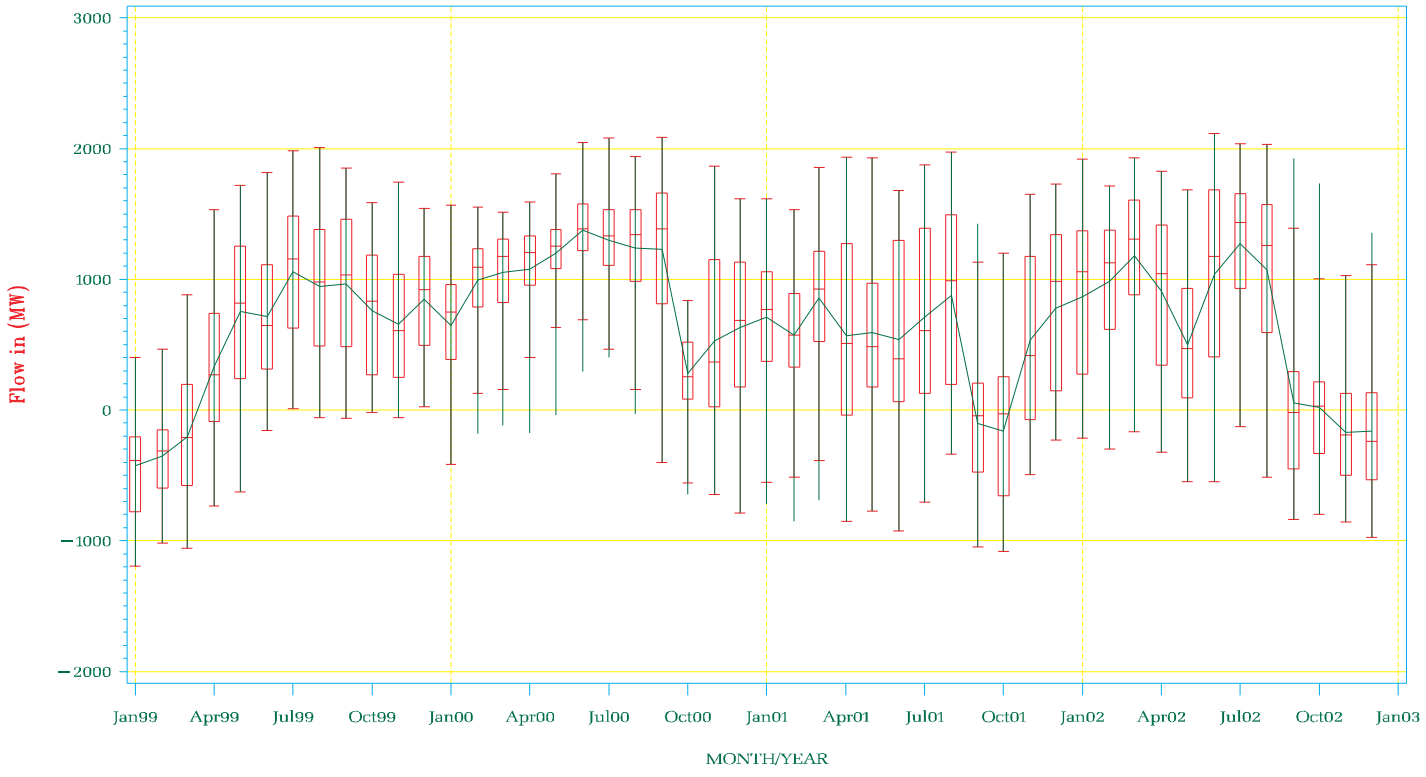
Adirondack – Central



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

MOSES SOUTH

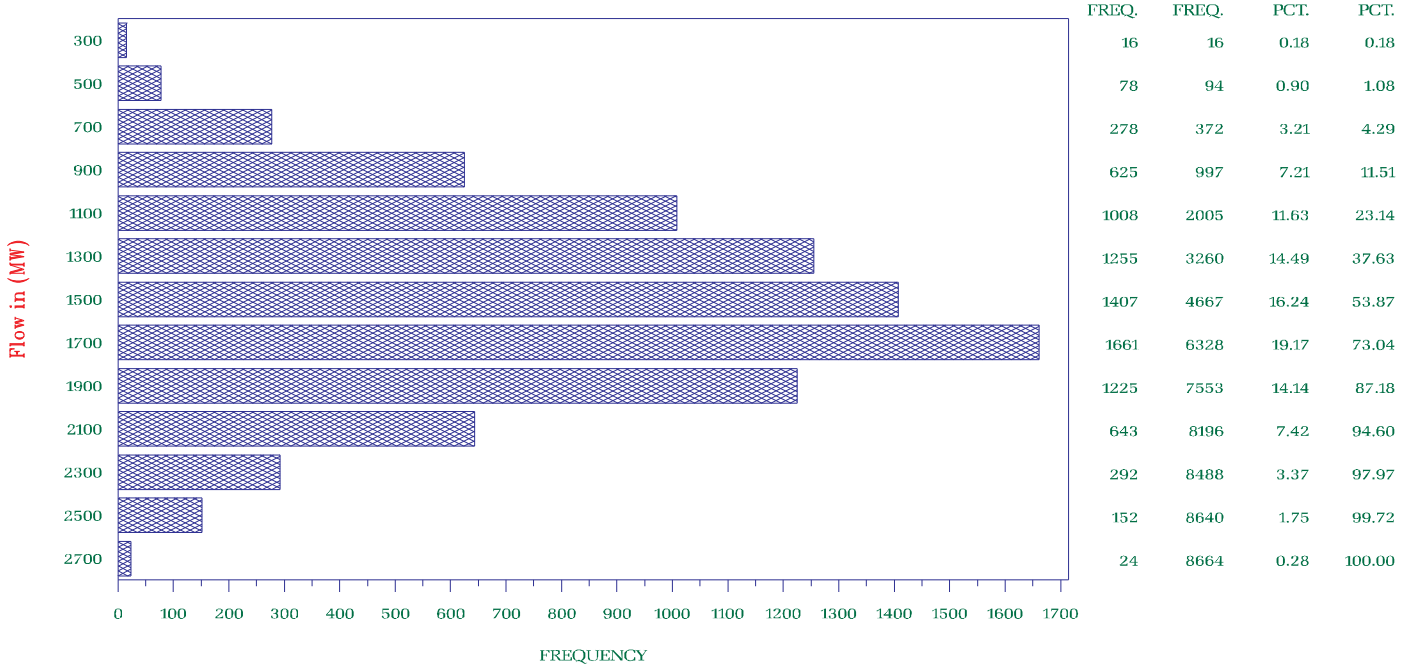
Adirondack – Central



NYISO Frequency Interface Flow For January – December 2002

DYSINGER EAST

Frontier – Genesee

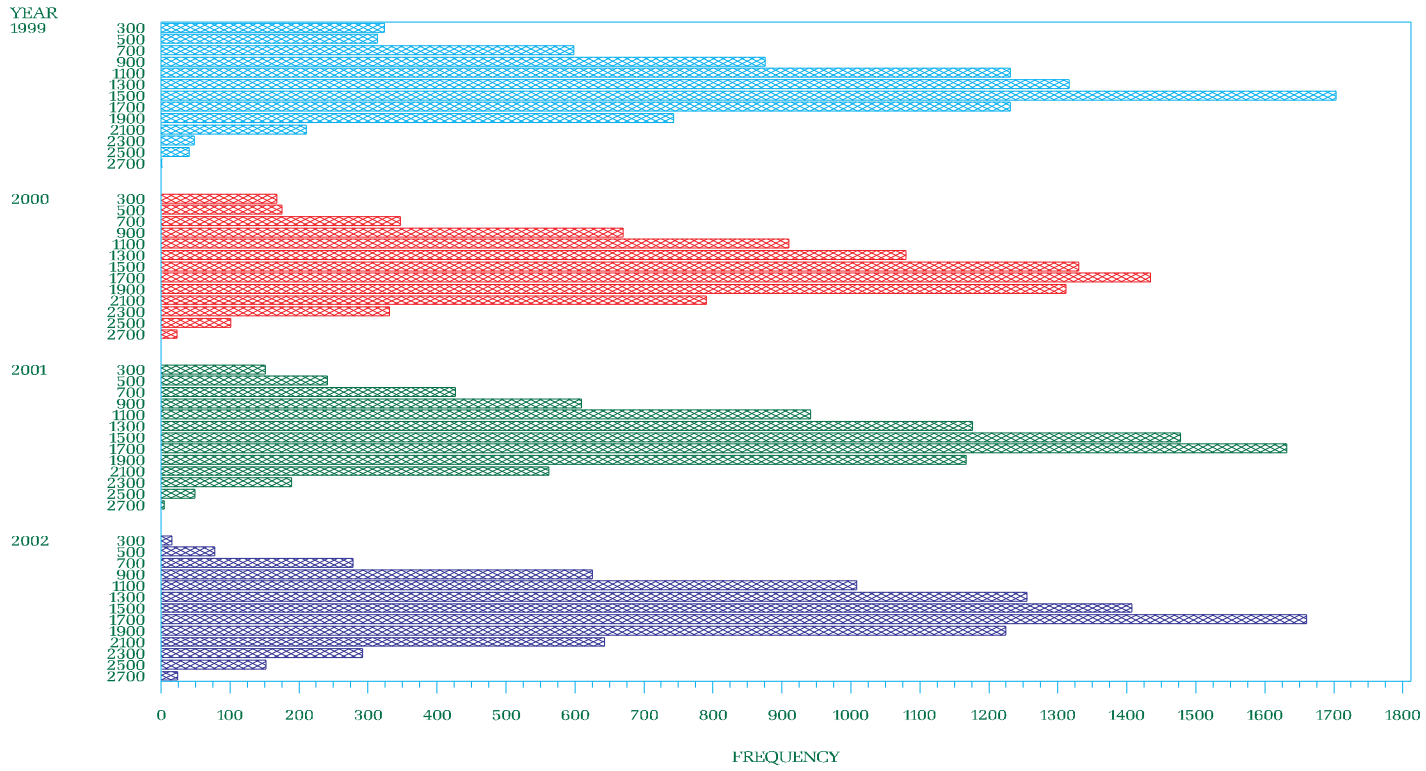


	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
300	16	16	0.18	0.18
500	78	94	0.90	1.08
700	278	372	3.21	4.29
900	625	997	7.21	11.51
1100	1008	2005	11.63	23.14
1300	1255	3260	14.49	37.63
1500	1407	4667	16.24	53.87
1700	1661	6328	19.17	73.04
1900	1225	7553	14.14	87.18
2100	643	8196	7.42	94.60
2300	292	8488	3.37	97.97
2500	152	8640	1.75	99.72
2700	24	8664	0.28	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

DYSINGER EAST

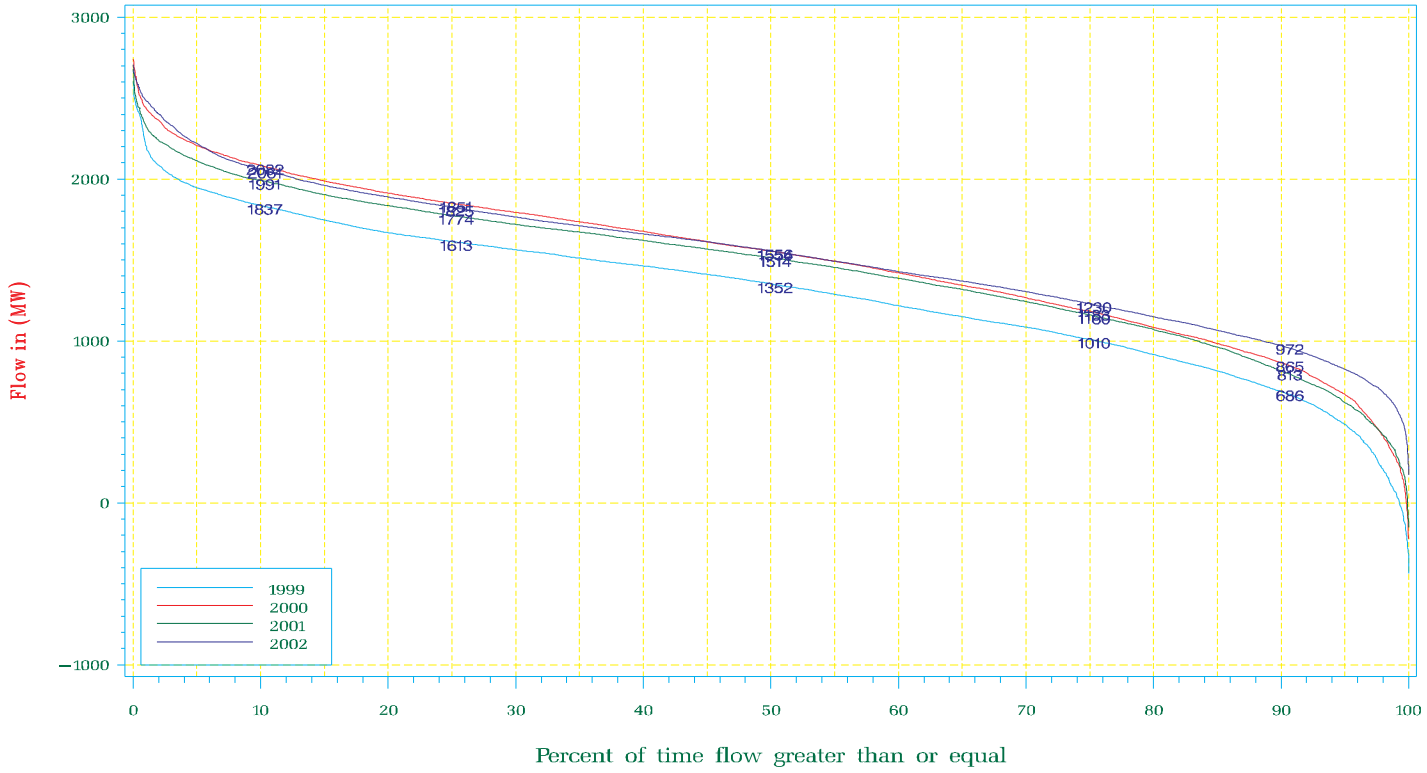
Frontier – Genesee



NYISO Percent of time Interface Flow For January 1999 – December 2002

DYSINGER EAST

Frontier – Genesee



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

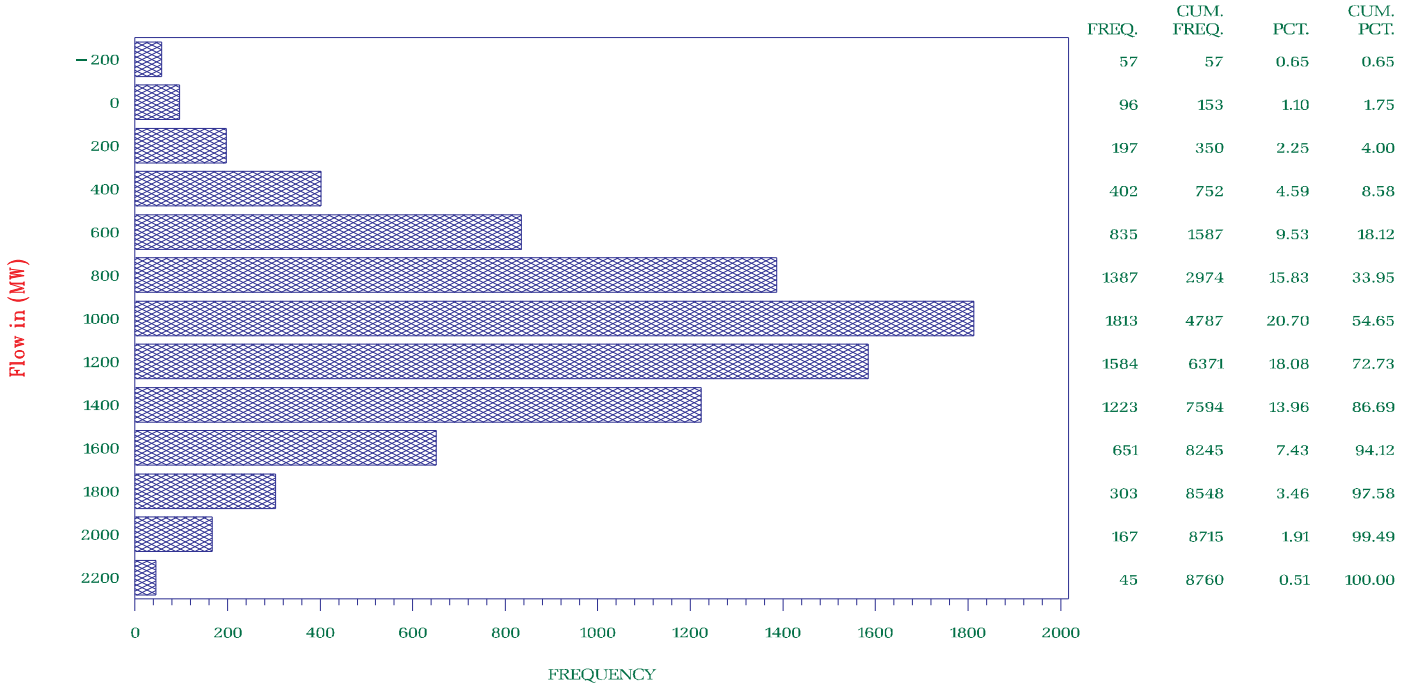
DYSINGER EAST

Frontier – Genesee

NYISO Frequency Interface Flow For January – December 2002

WEST CENTRAL

Genesee – Central

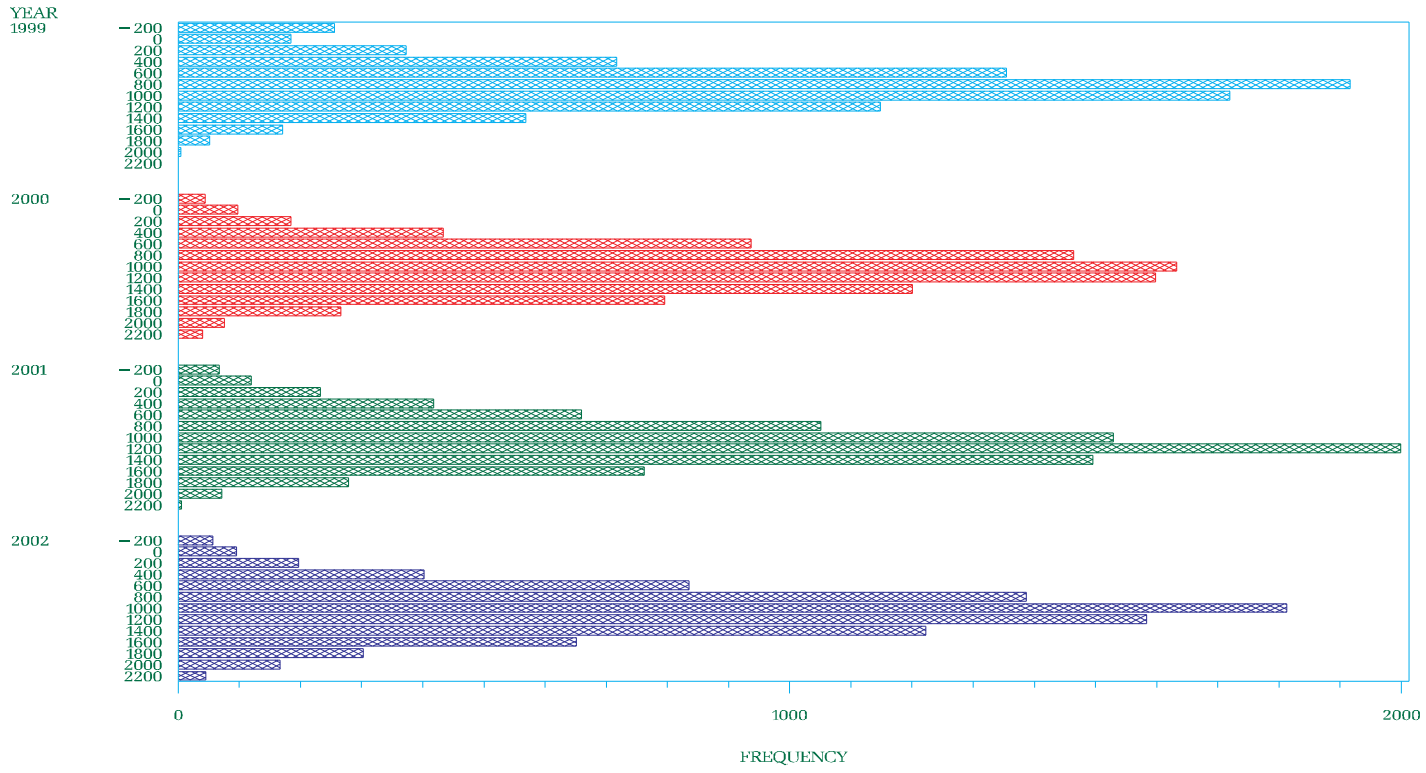


	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
–200	57	57	0.65	0.65
0	96	153	1.10	1.75
200	197	350	2.25	4.00
400	402	752	4.59	8.58
600	835	1587	9.53	18.12
800	1387	2974	15.83	33.95
1000	1813	4787	20.70	54.65
1200	1584	6371	18.08	72.73
1400	1223	7594	13.96	86.69
1600	651	8245	7.43	94.12
1800	303	8548	3.46	97.58
2000	167	8715	1.91	99.49
2200	45	8760	0.51	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

WEST CENTRAL

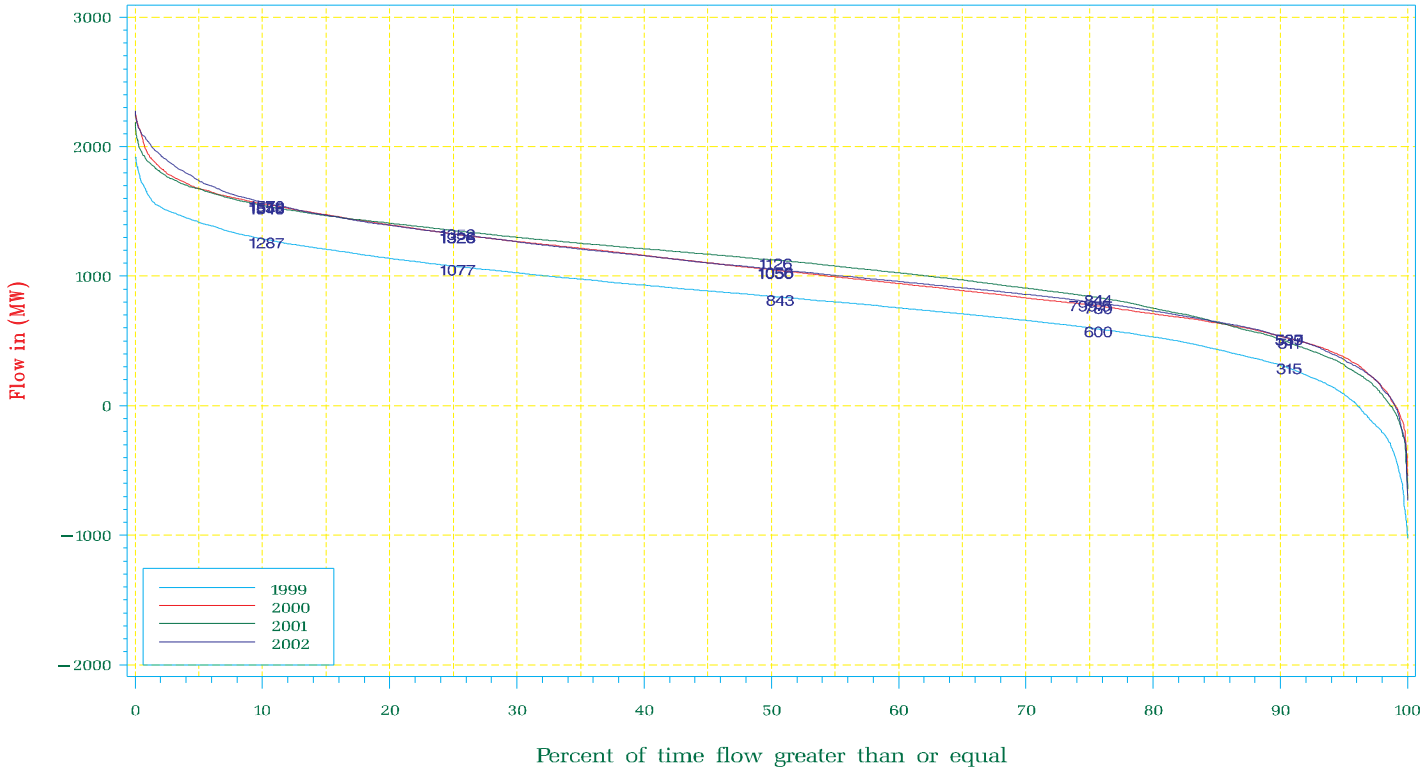
Genesee – Central



NYISO Percent of time Interface Flow For January 1999 – December 2002

WEST CENTRAL

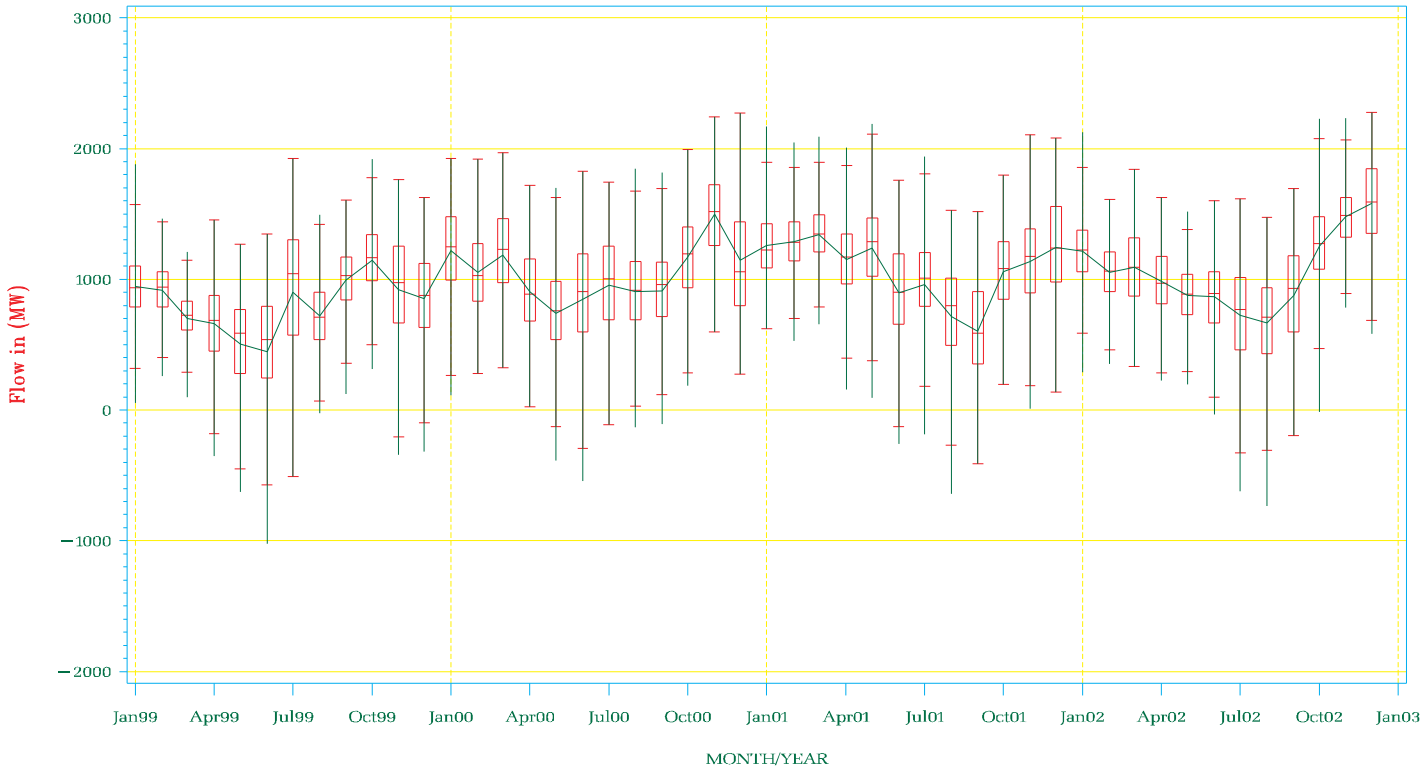
Genesee – Central



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

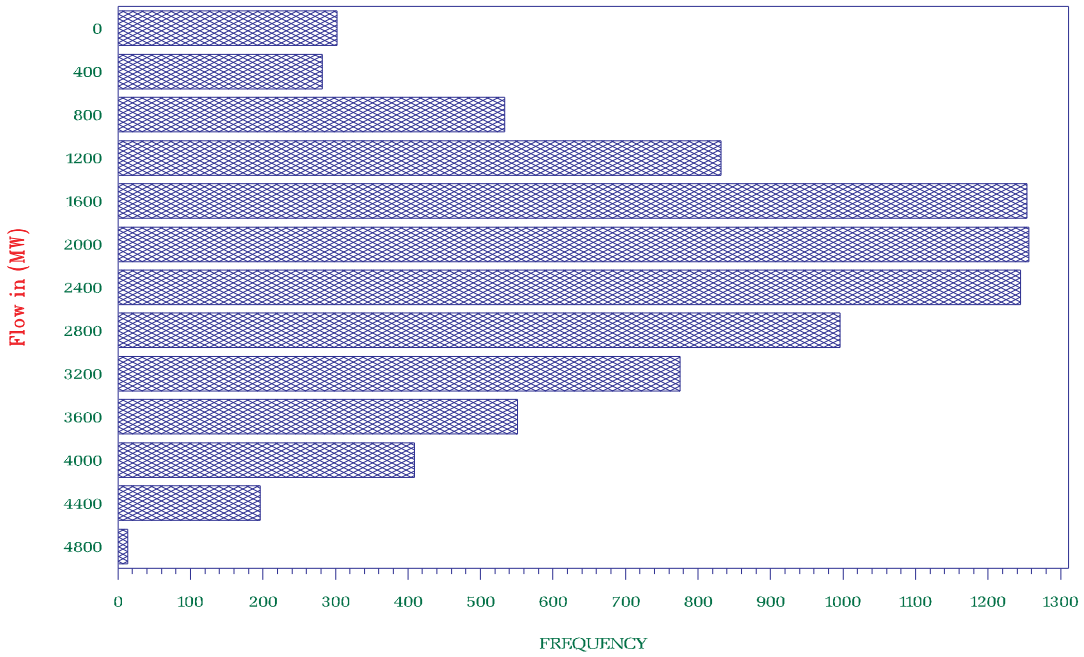
WEST CENTRAL

Genesee – Central



NYISO Frequency Interface Flow For January – December 2002

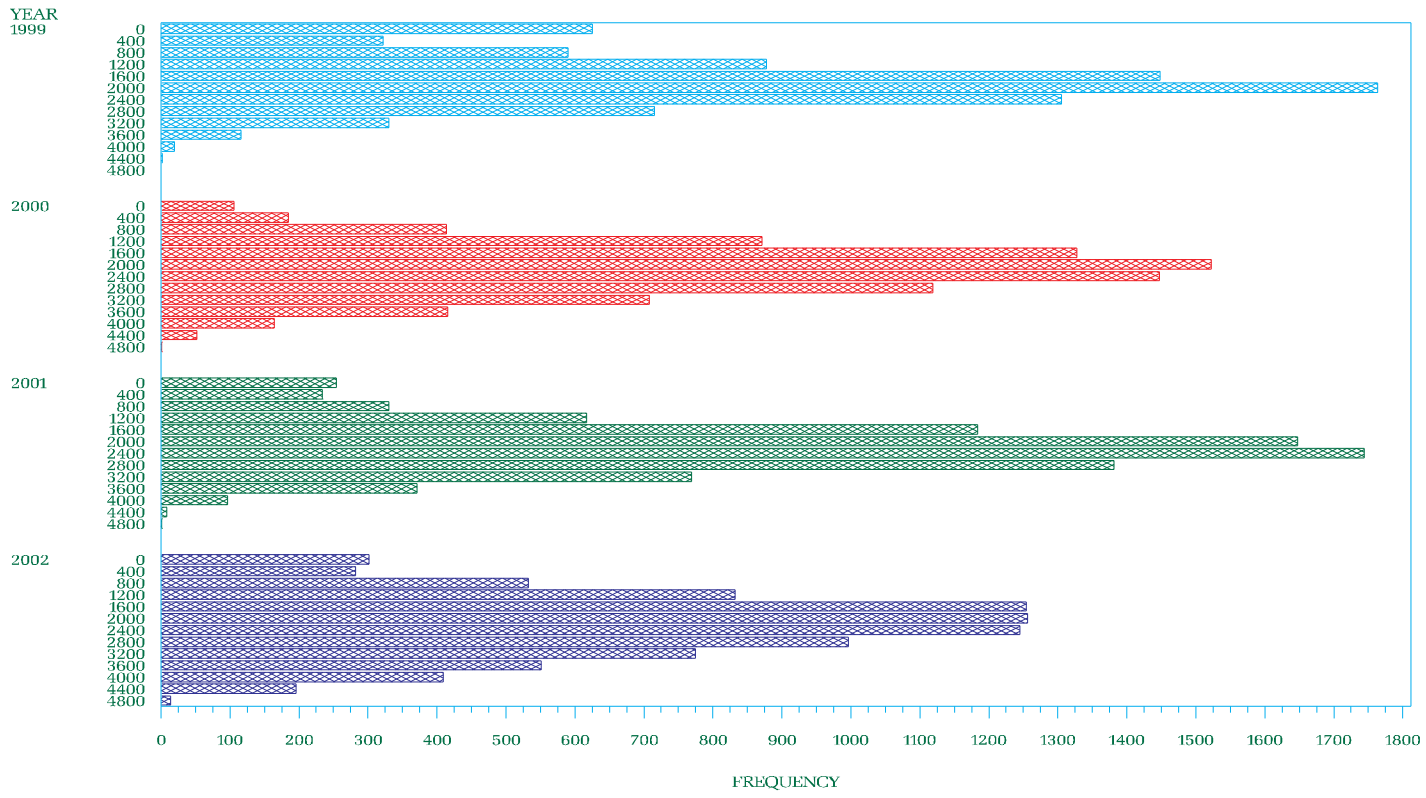
WEST CENTRAL (CLOSED)



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
0	302	302	3.49	3.49
400	282	584	3.26	6.76
800	533	1117	6.17	12.92
1200	832	1949	9.62	22.54
1600	1254	3203	14.51	37.05
2000	1256	4459	14.53	51.58
2400	1245	5704	14.40	65.98
2800	996	6700	11.52	77.50
3200	775	7475	8.96	86.47
3600	551	8026	6.37	92.84
4000	409	8435	4.73	97.57
4400	196	8631	2.27	99.84
4800	14	8645	0.16	100.00

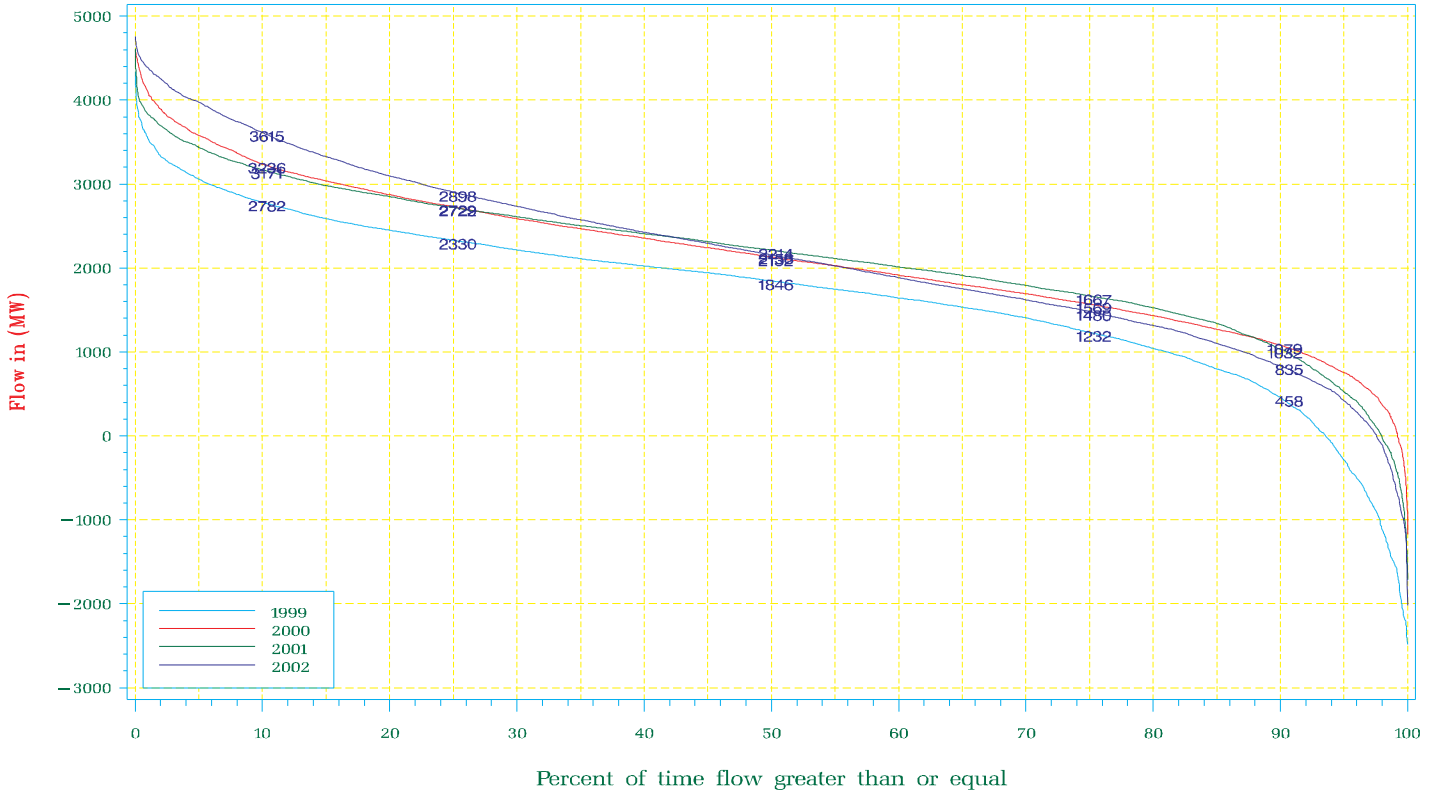
NYISO Frequency Interface Flow For January 1999 – December 2002

WEST CENTRAL (CLOSED)



NYISO Percent of time Interface Flow For January 1999 – December 2002

WEST CENTRAL (CLOSED)



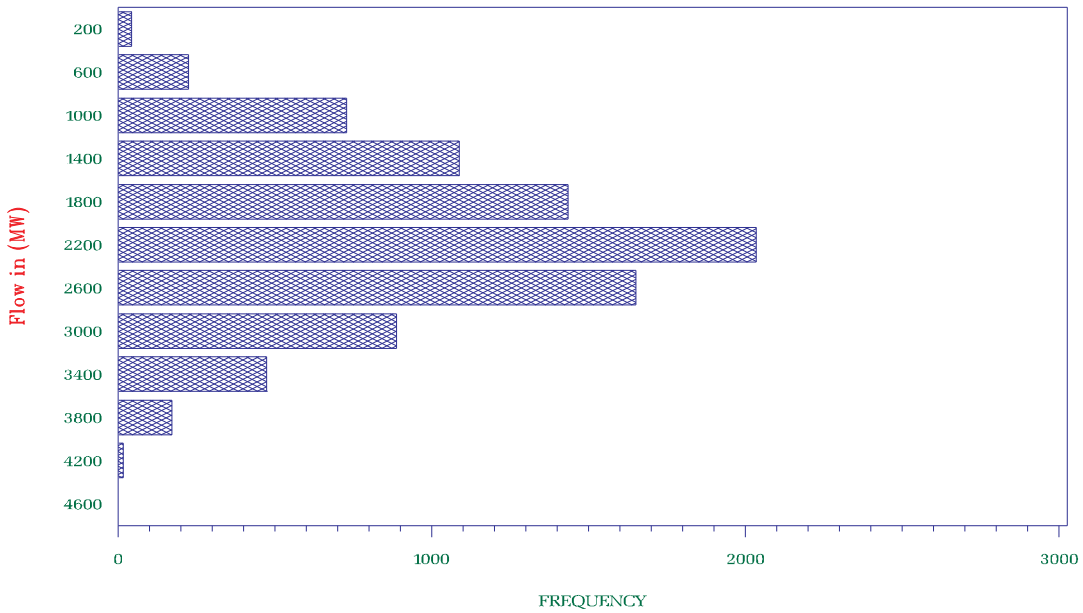
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

WEST CENTRAL (CLOSED)

NYISO Frequency Interface Flow For January – December 2002

UPNY – CONED

Capital/Mid Hudson – Westchester

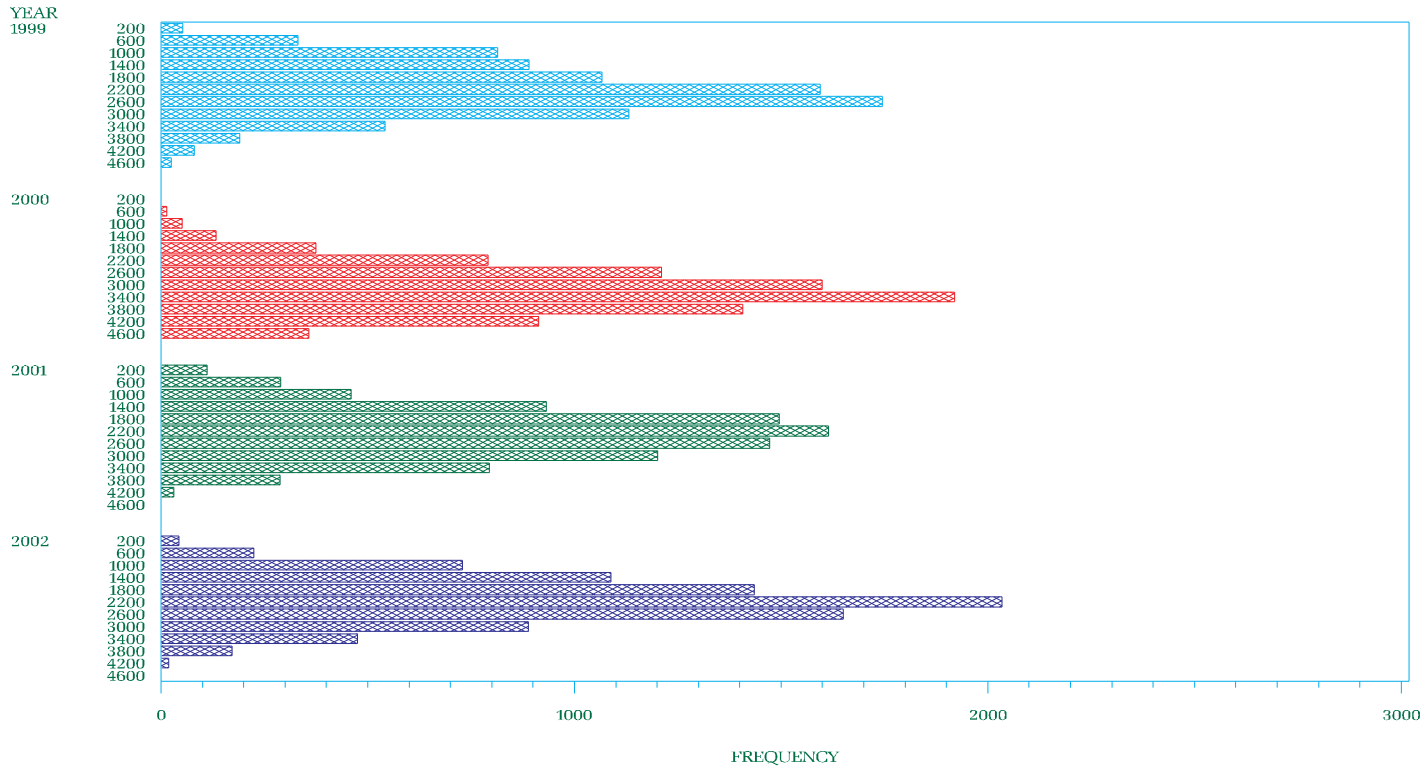


	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
200	43	43	0.49	0.49
600	225	268	2.57	3.06
1000	730	998	8.33	11.39
1400	1088	2086	12.42	23.81
1800	1435	3521	16.38	40.19
2200	2034	5555	23.22	63.41
2600	1651	7206	18.85	82.26
3000	889	8095	10.15	92.41
3400	475	8570	5.42	97.83
3800	172	8742	1.96	99.79
4200	18	8760	0.21	100.00
4600	0	8760	0.00	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

UPNY – CONED

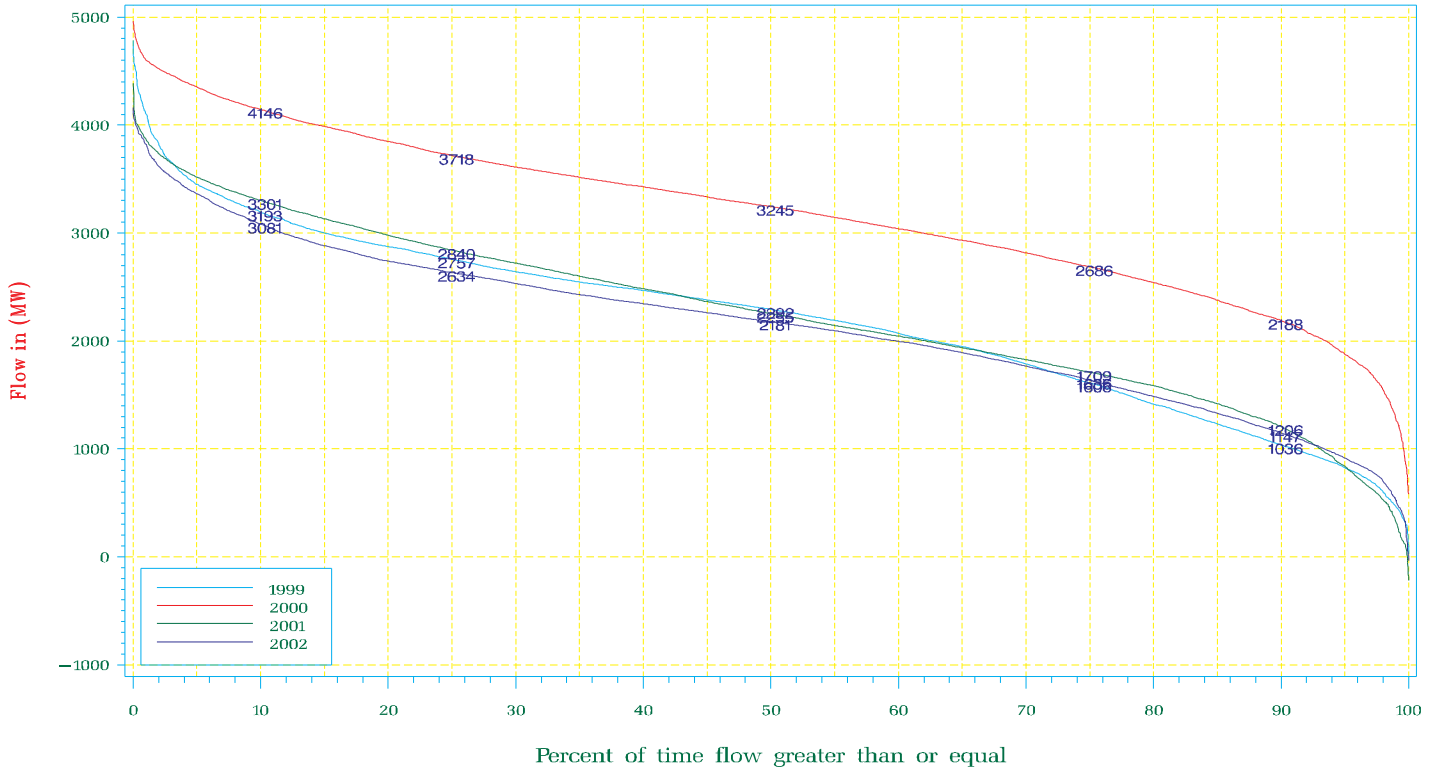
Capital/Mid Hudson – Westchester



NYISO Percent of time Interface Flow For January 1999 – December 2002

UPNY – CONED

Capital/Mid Hudson – Westchester



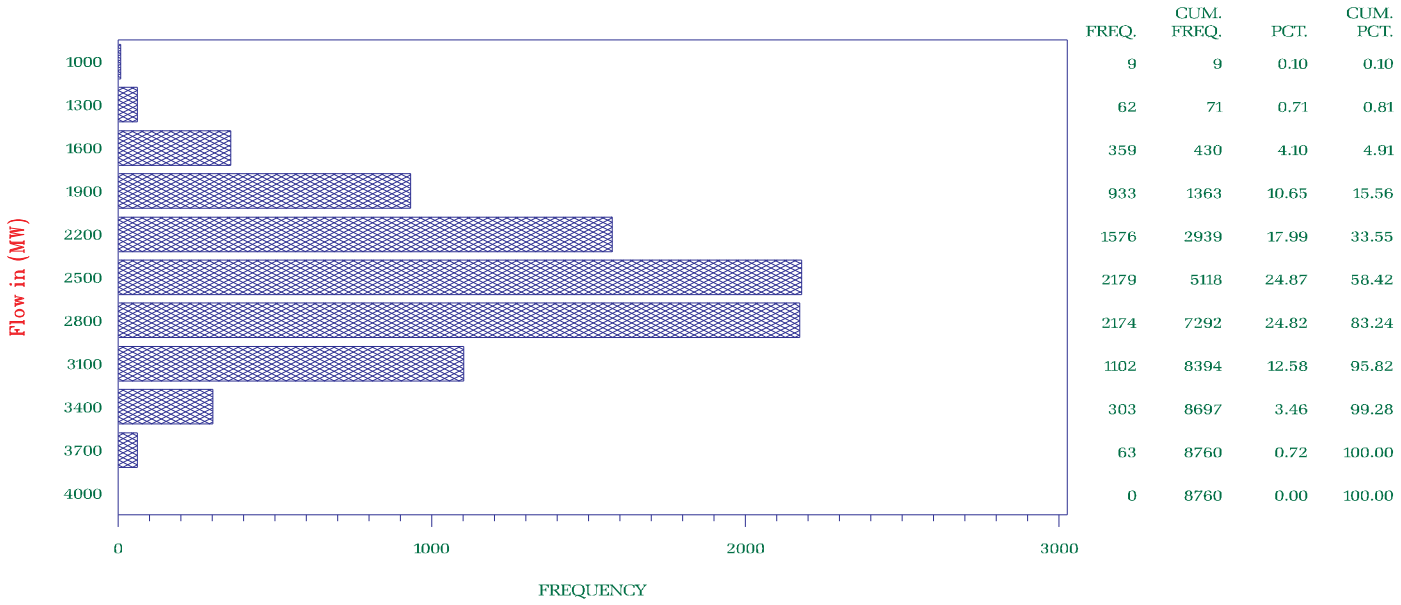
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

UPNY – CONED

Capital/Mid Hudson – Westchester

NYISO Frequency Interface Flow For January – December 2002

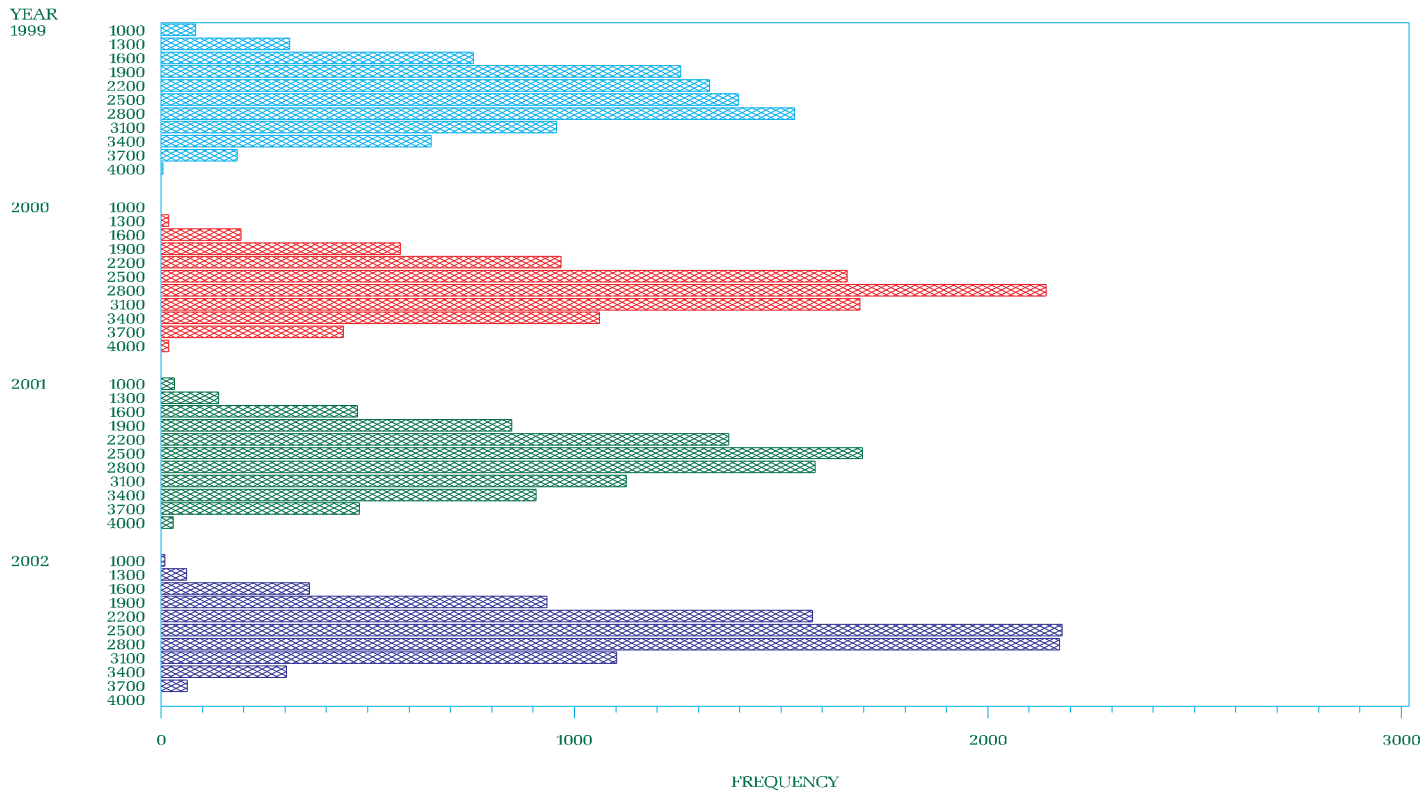
SPRAINBROOK – DUNWOODIE SOUTH



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1000	9	9	0.10	0.10
1300	62	71	0.71	0.81
1600	359	430	4.10	4.91
1900	933	1363	10.65	15.56
2200	1576	2939	17.99	33.55
2500	2179	5118	24.87	58.42
2800	2174	7292	24.82	83.24
3100	1102	8394	12.58	95.82
3400	303	8697	3.46	99.28
3700	63	8760	0.72	100.00
4000	0	8760	0.00	100.00

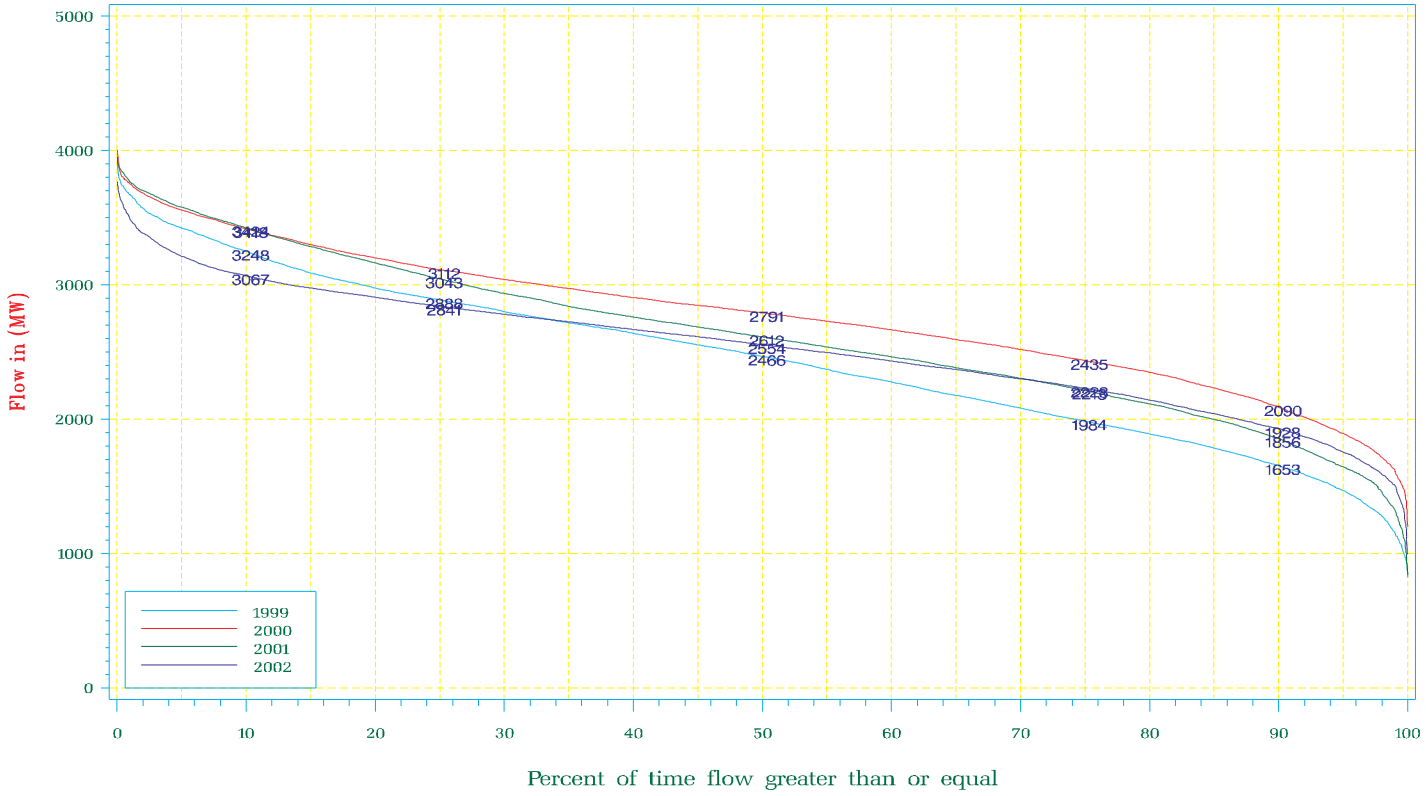
NYISO Frequency Interface Flow For January 1999 – December 2002

SPRAINBROOK – DUNWOODIE SOUTH



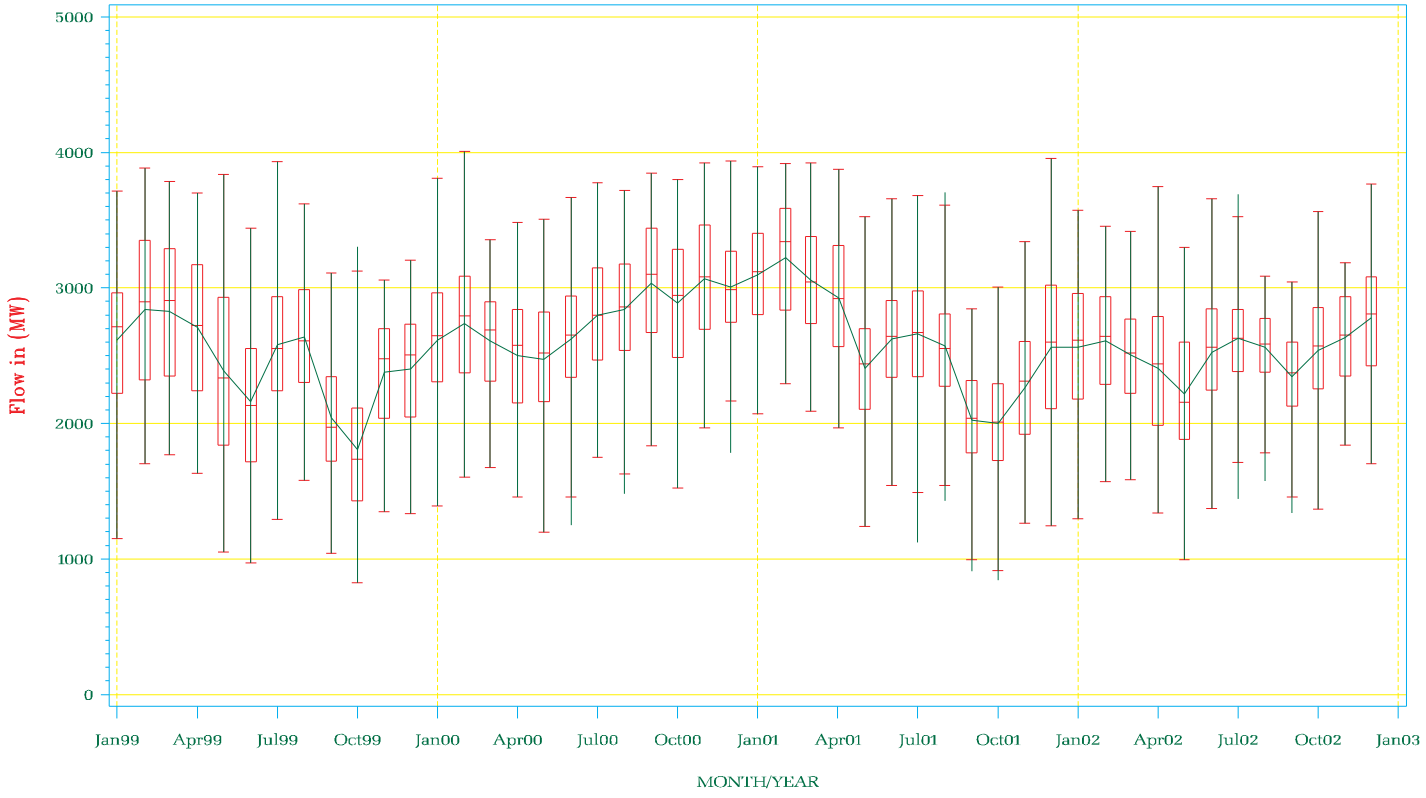
NYISO Percent of time Interface Flow For January 1999 – December 2002

SPRAINBROOK – DUNWOODIE SOUTH



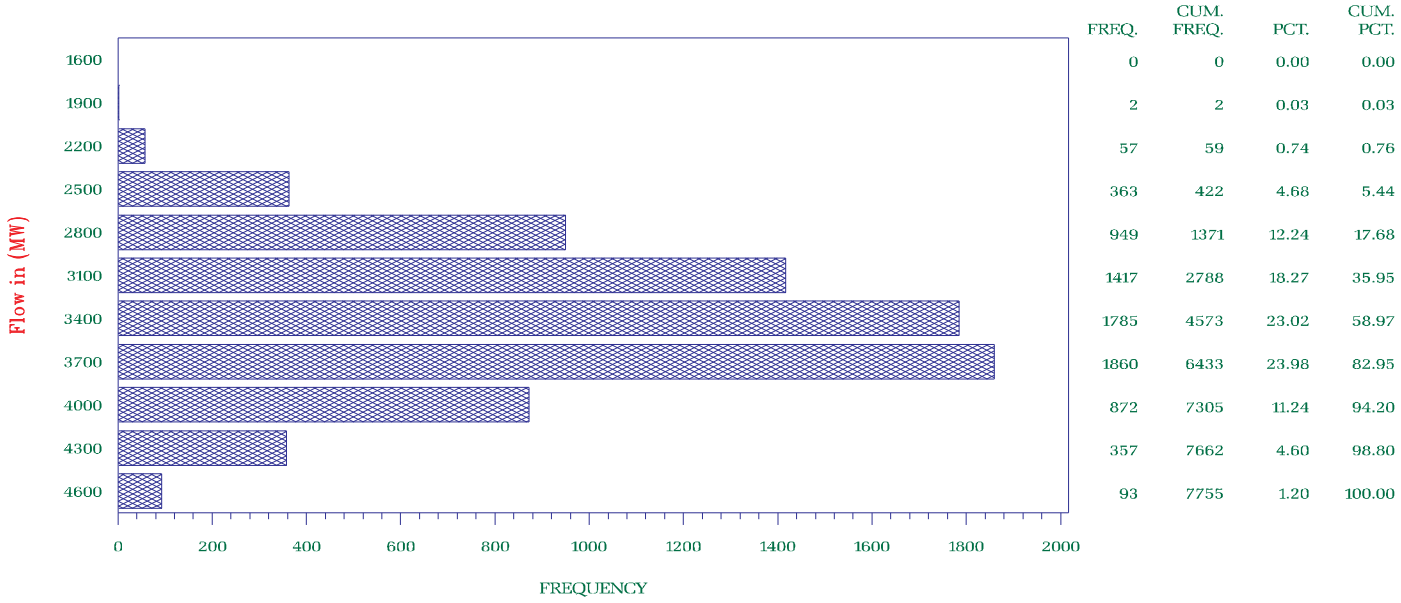
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

SPRAINBROOK – DUNWOODIE SOUTH



NYISO Frequency Interface Flow For January – December 2002

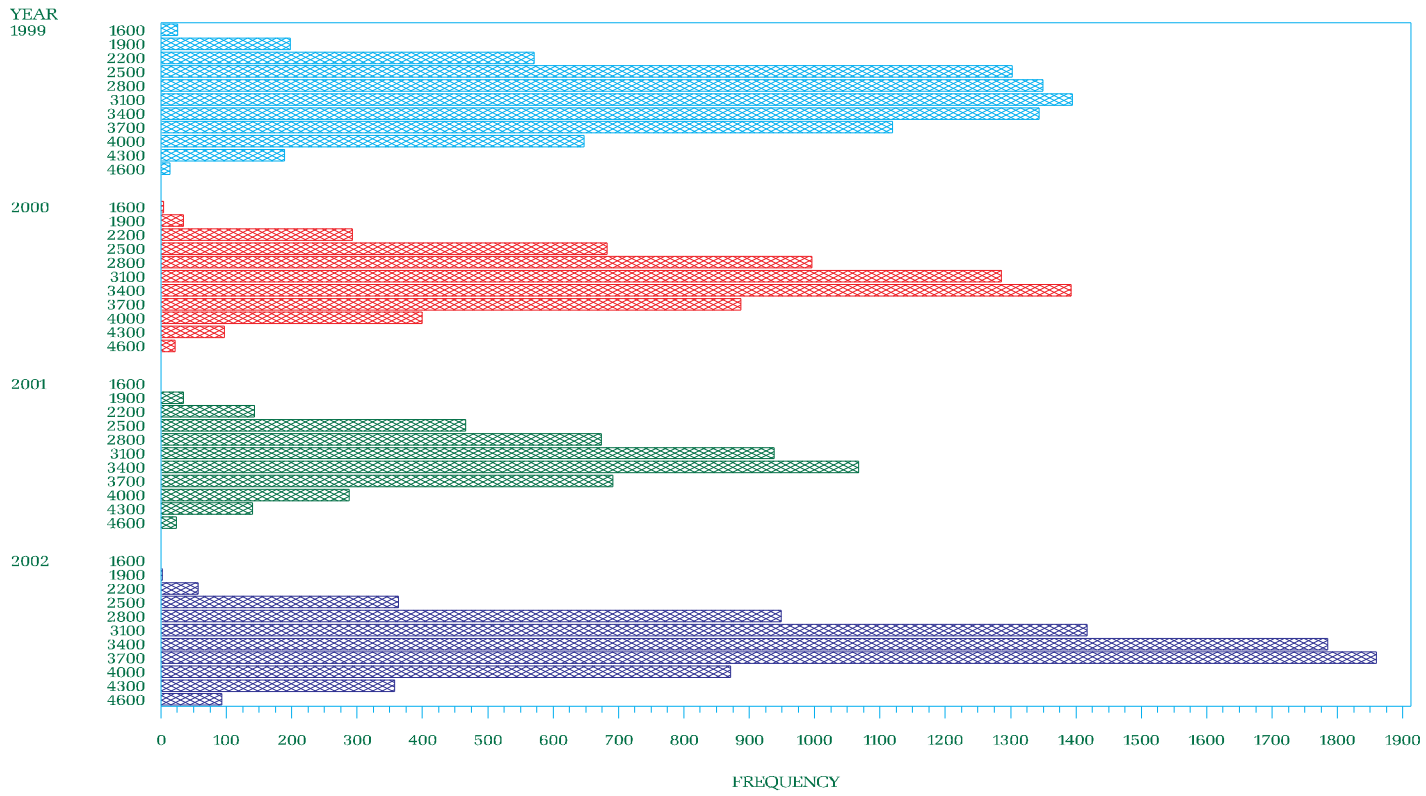
SPRAINBROOK – DUNWOODIE SOUTH (Closed)



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1600	0	0	0.00	0.00
1900	2	2	0.03	0.03
2200	57	59	0.74	0.76
2500	363	422	4.68	5.44
2800	949	1371	12.24	17.68
3100	1417	2788	18.27	35.95
3400	1785	4573	23.02	58.97
3700	1860	6433	23.98	82.95
4000	872	7305	11.24	94.20
4300	357	7662	4.60	98.80
4600	93	7755	1.20	100.00

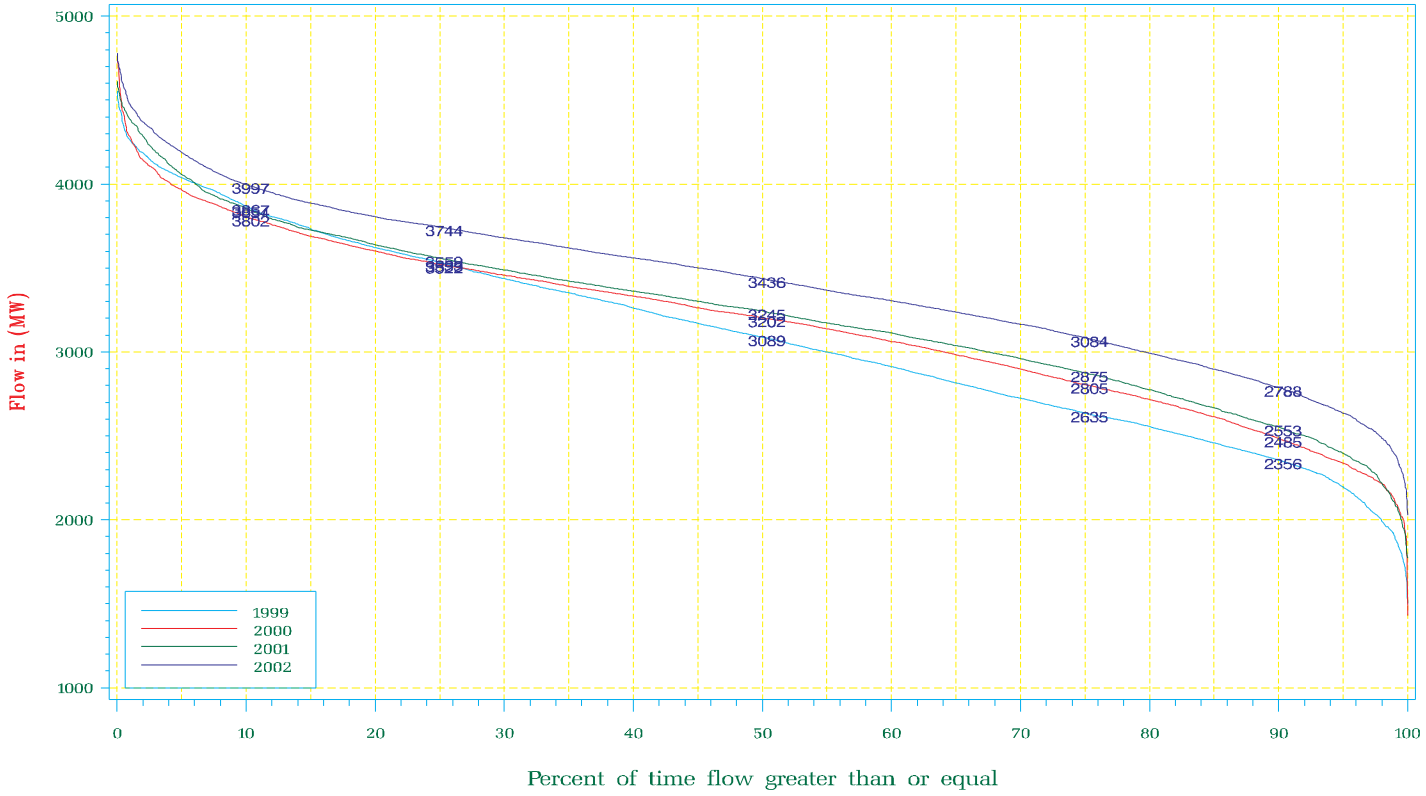
NYISO Frequency Interface Flow For January 1999 – December 2002

SPRAINBROOK – DUNWOODIE SOUTH (Closed)



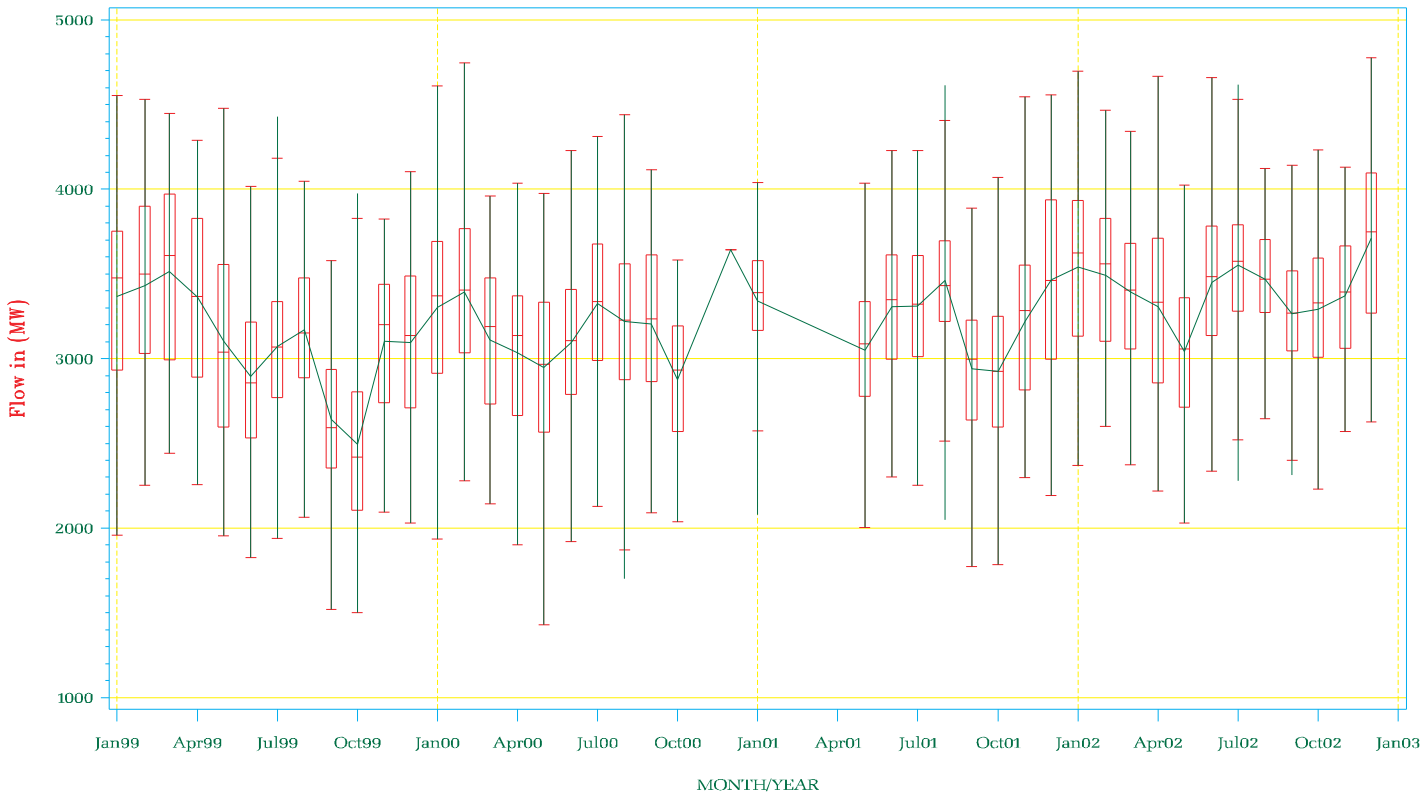
NYISO Percent of time Interface Flow For January 1999 – December 2002

SPRAINBROOK – DUNWOODIE SOUTH (Closed)



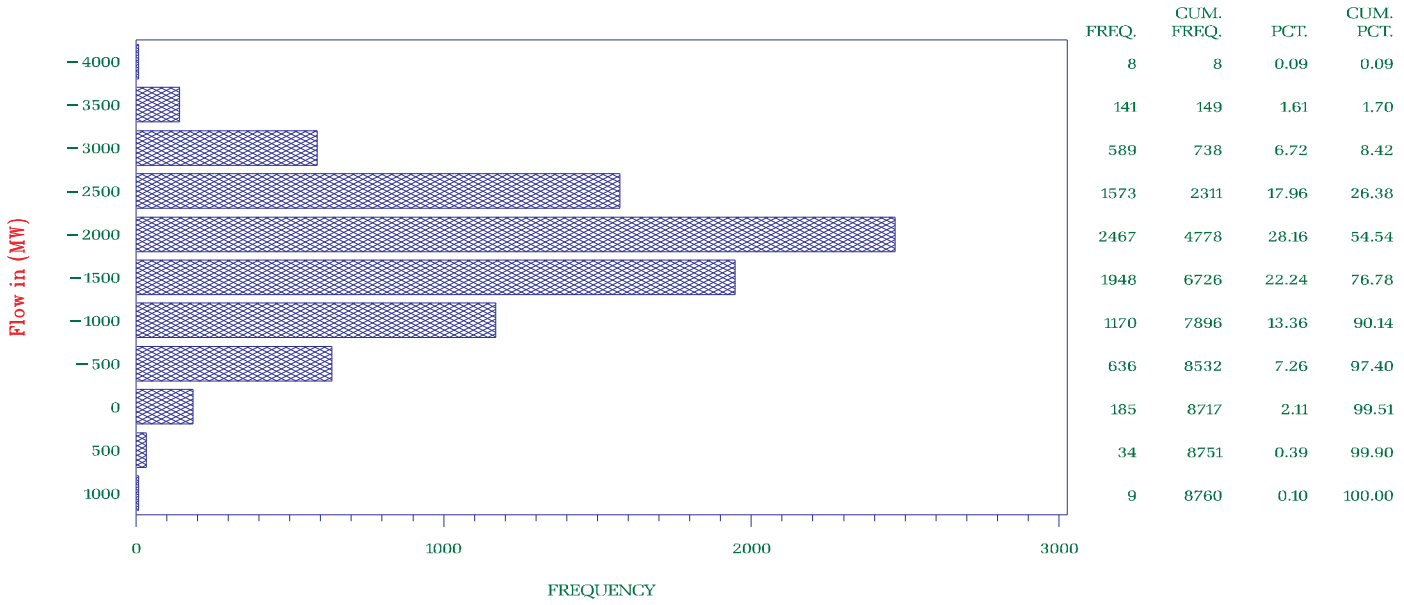
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

SPRAINBROOK – DUNWOODIE SOUTH (Closed)



NYISO Frequency Interface Flow For January – December 2002

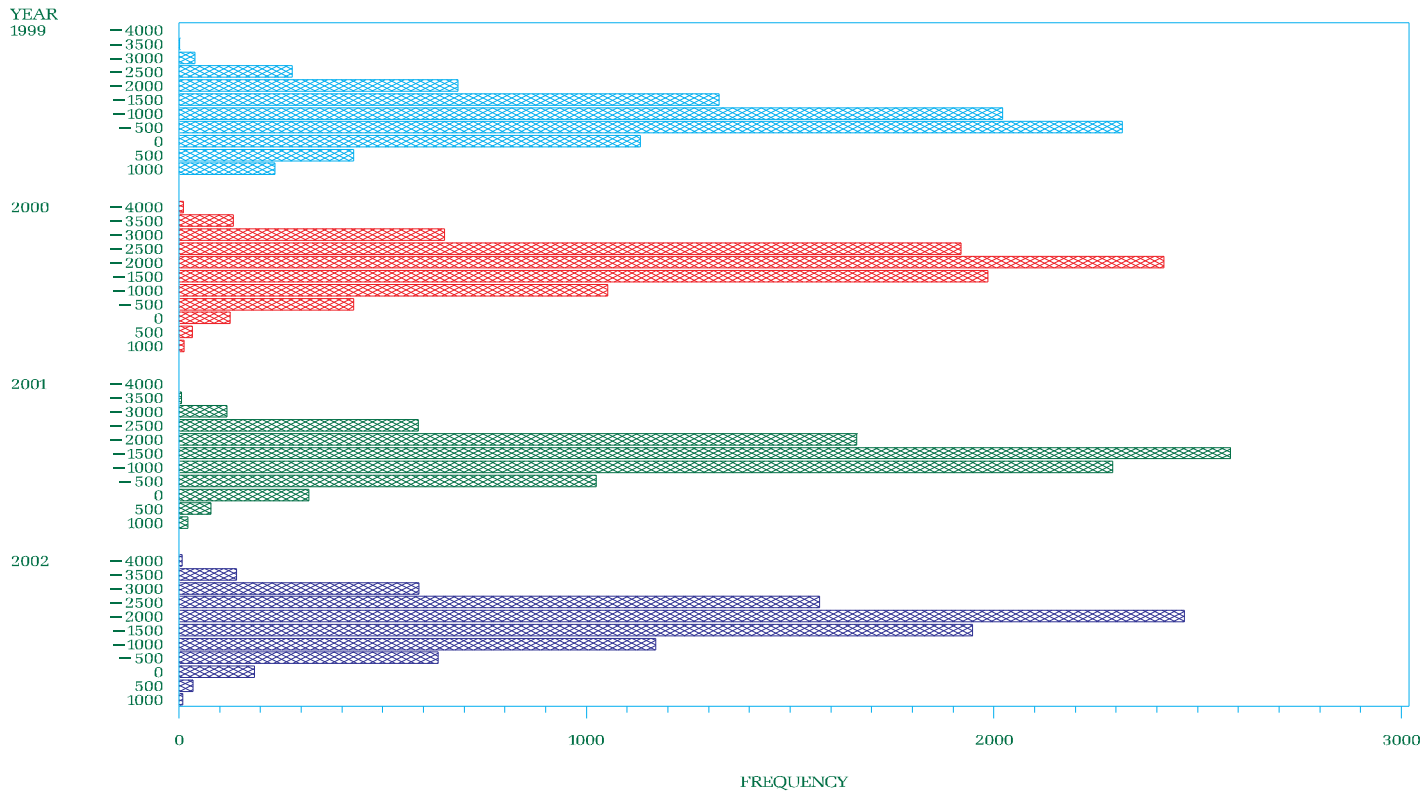
NY EXPORT



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
4000	8	8	0.09	0.09
3500	141	149	1.61	1.70
3000	589	738	6.72	8.42
2500	1573	2311	17.96	26.38
2000	2467	4778	28.16	54.54
1500	1948	6726	22.24	76.78
1000	1170	7896	13.36	90.14
500	636	8532	7.26	97.40
0	185	8717	2.11	99.51
500	34	8751	0.39	99.90
1000	9	8760	0.10	100.00

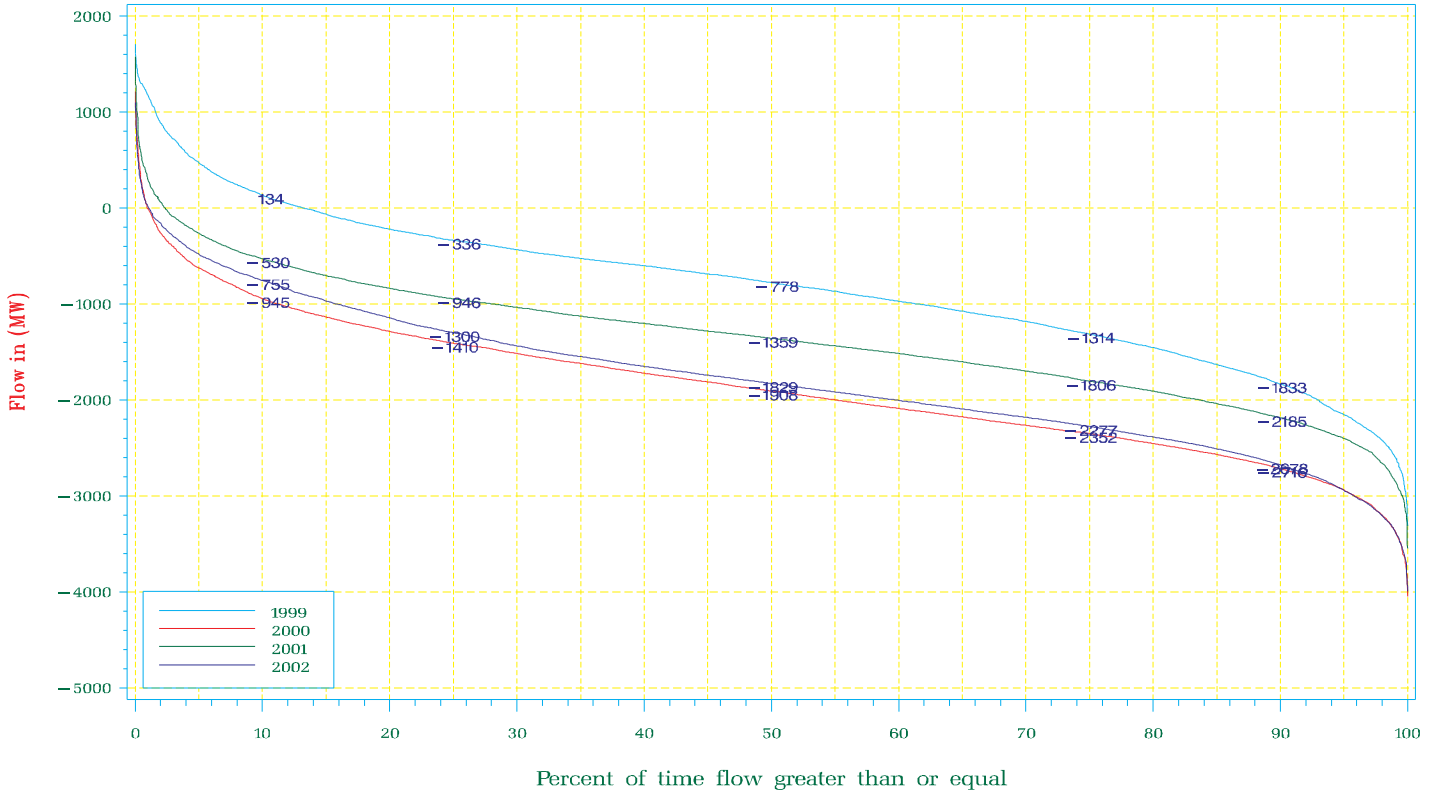
NYISO Frequency Interface Flow For January 1999 – December 2002

NY EXPORT



NYISO Percent of time Interface Flow For January 1999 – December 2002

NY EXPORT



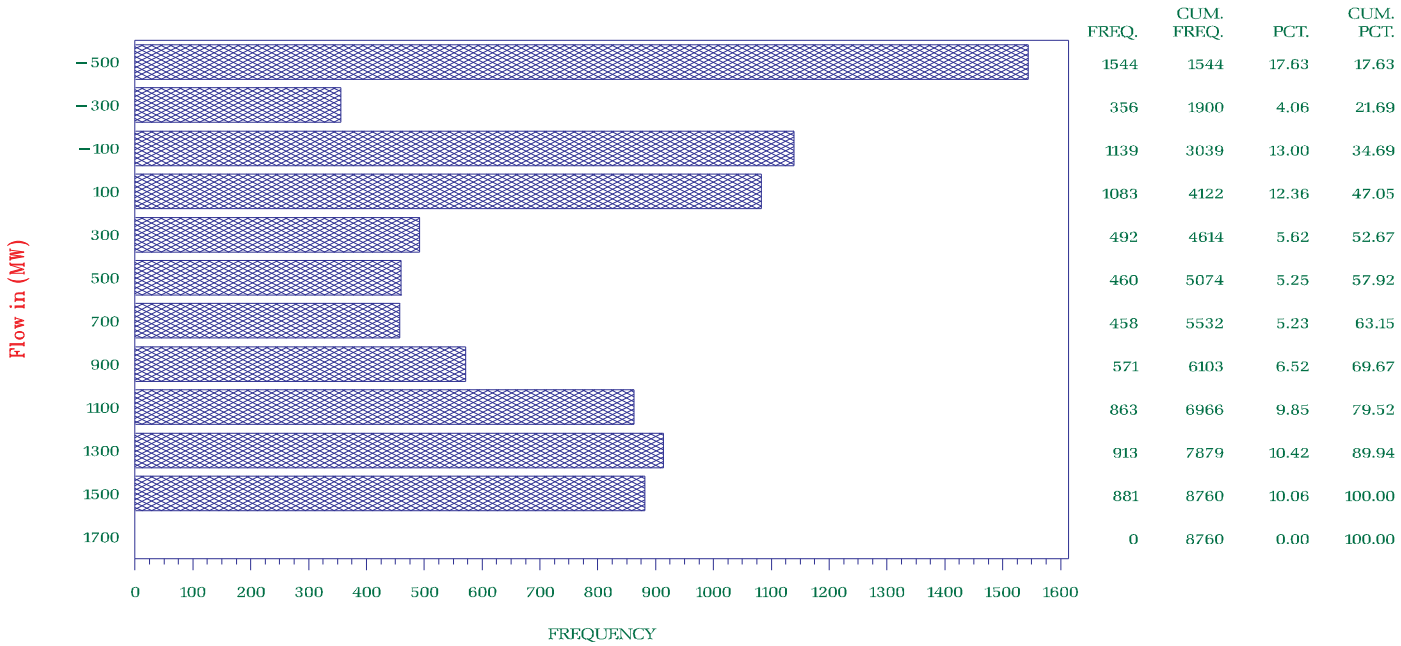
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

NY EXPORT

NYISO Frequency Interface Flow For January – December 2002

TE – NY SCHEDULE

Chateauguay – Massena

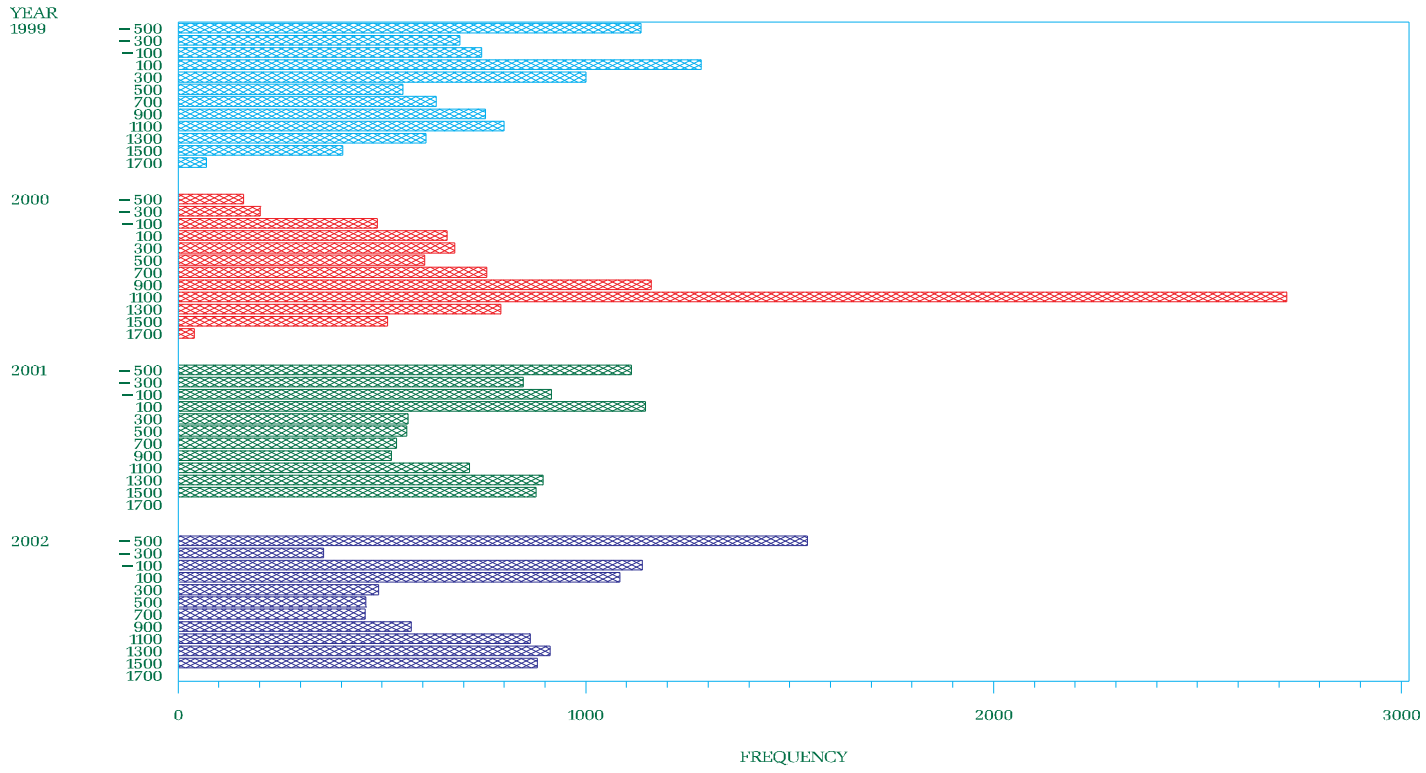


	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-500	1544	1544	17.63	17.63
-300	356	1900	4.06	21.69
-100	1139	3039	13.00	34.69
100	1083	4122	12.36	47.05
300	492	4614	5.62	52.67
500	460	5074	5.25	57.92
700	458	5532	5.23	63.15
900	571	6103	6.52	69.67
1100	863	6966	9.85	79.52
1300	913	7879	10.42	89.94
1500	881	8760	10.06	100.00
1700	0	8760	0.00	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

TE – NY SCHEDULE

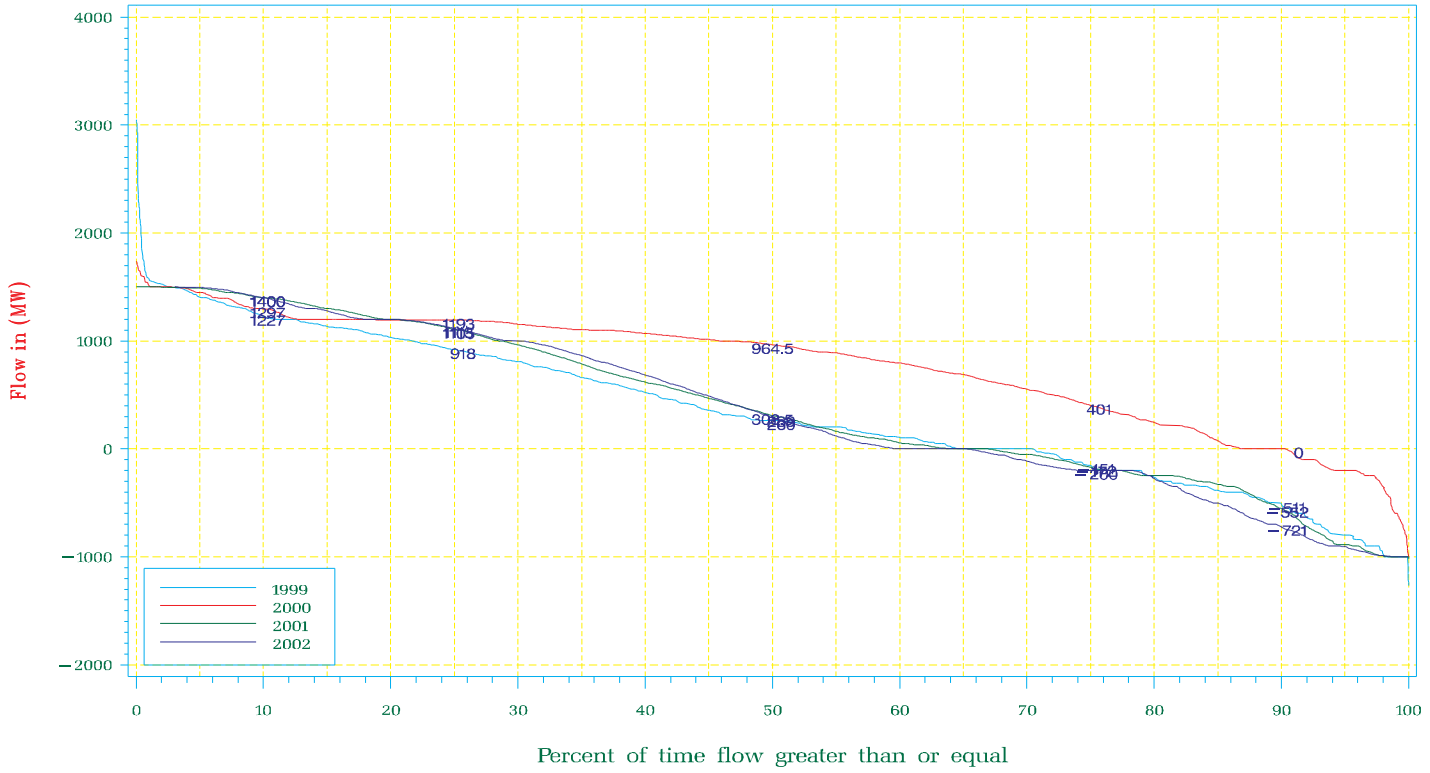
Chateauguay – Massena



NYISO Percent of time Interface Flow For January 1999 – December 2002

TE – NY SCHEDULE

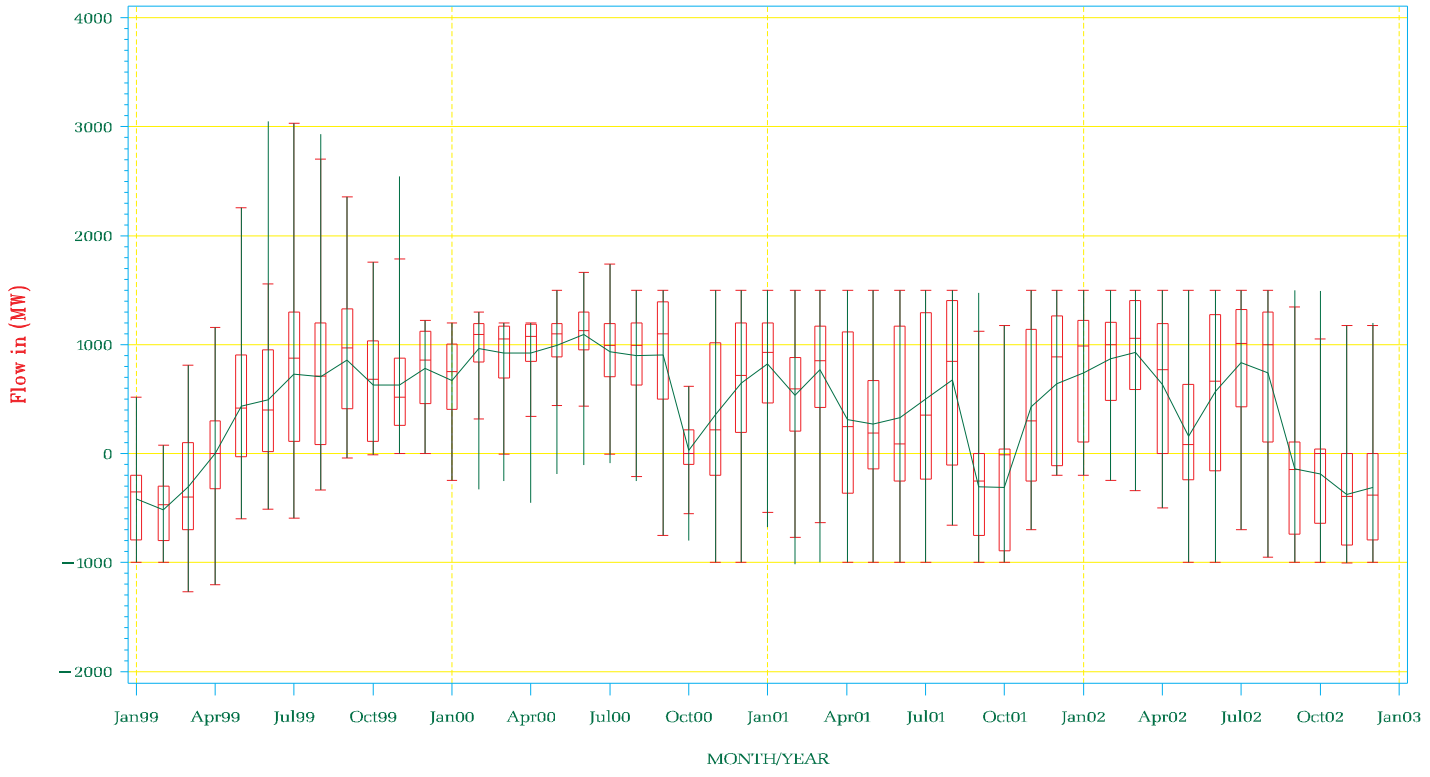
Chateauguay – Massena



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

TE – NY SCHEDULE

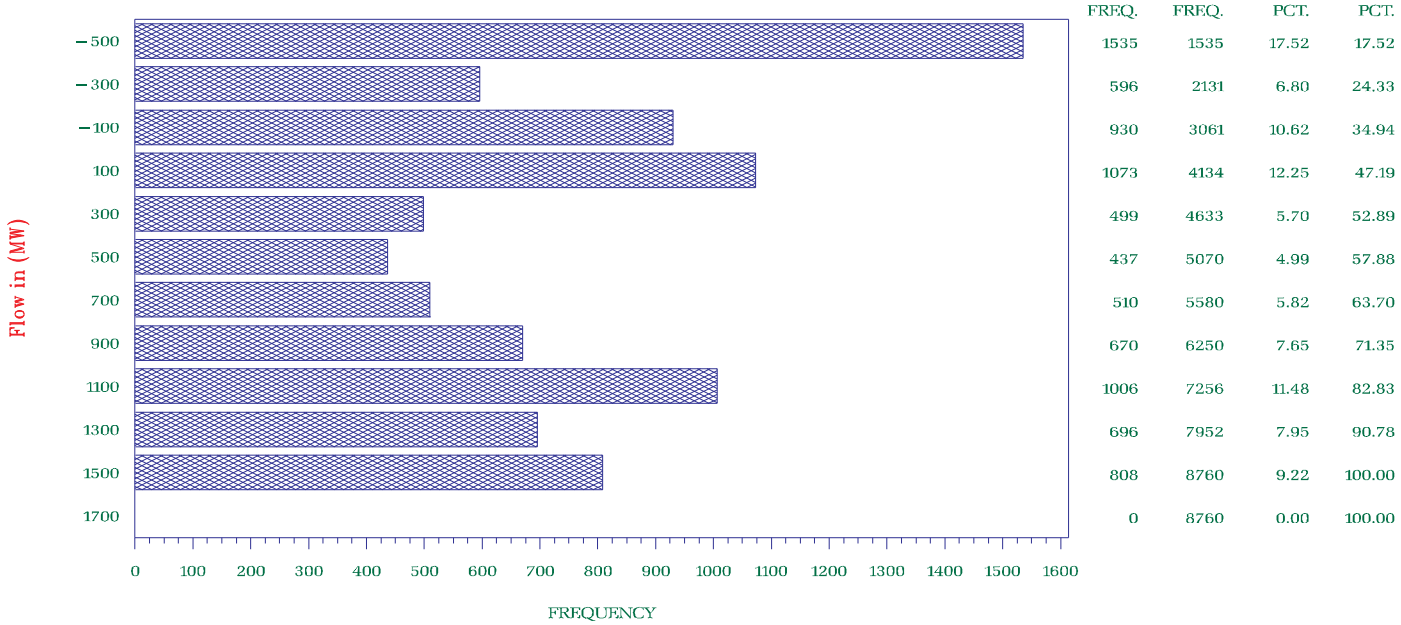
Chateauguay – Massena



NYISO Frequency Interface Flow For January – December 2002

TE – NY

Chateauguay – Massena

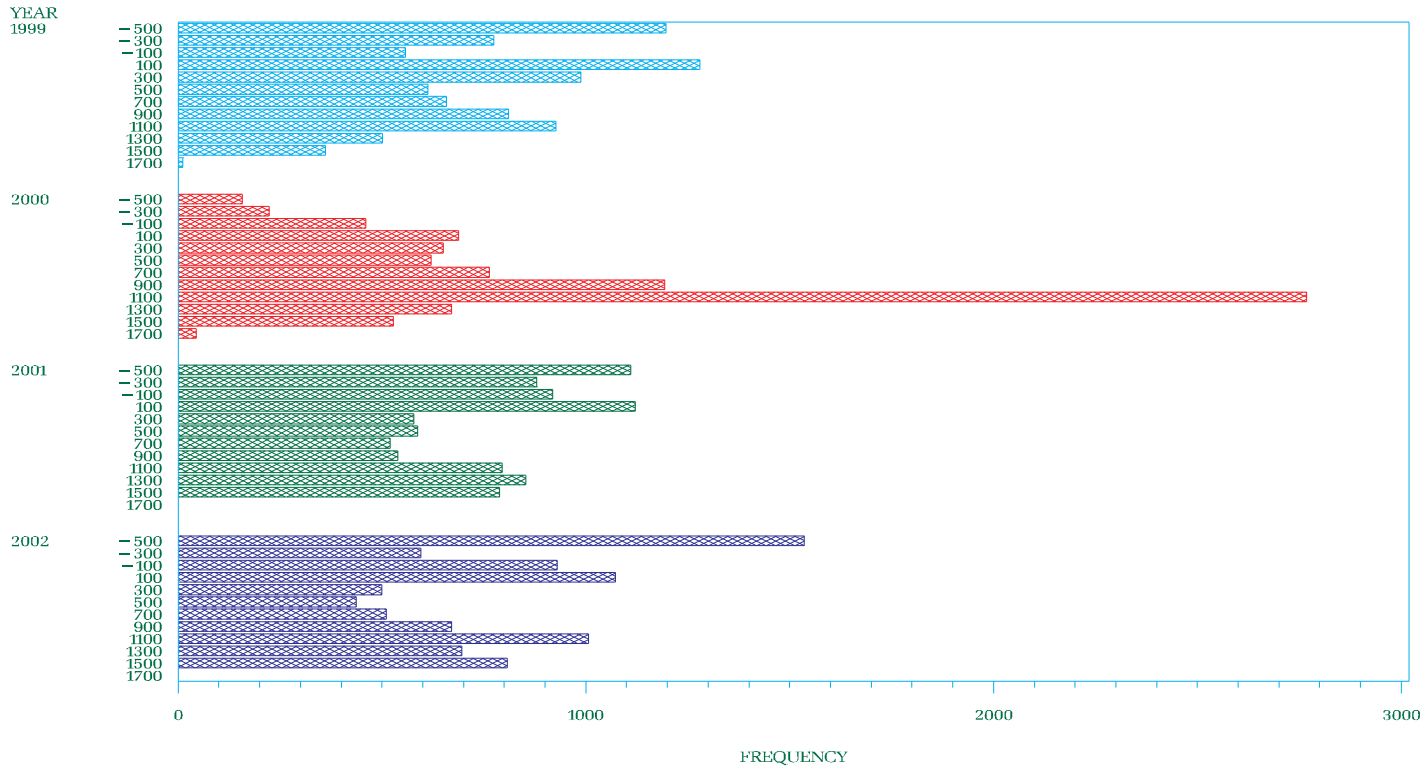


	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-500	1535	1535	17.52	17.52
-300	596	2131	6.80	24.33
-100	930	3061	10.62	34.94
100	1073	4134	12.25	47.19
300	499	4633	5.70	52.89
500	437	5070	4.99	57.88
700	510	5580	5.82	63.70
900	670	6250	7.65	71.35
1100	1006	7256	11.48	82.83
1300	696	7952	7.95	90.78
1500	808	8760	9.22	100.00
1700	0	8760	0.00	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

TE – NY

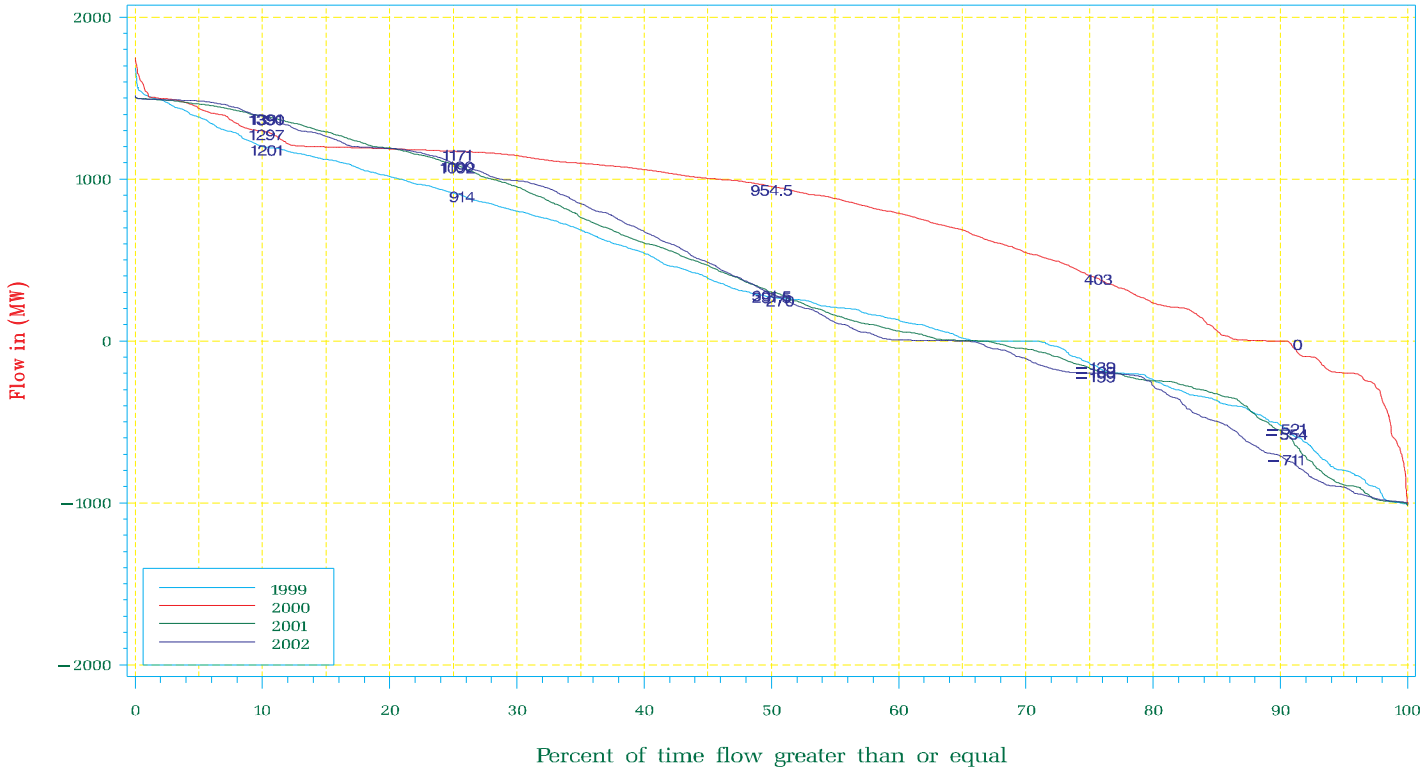
Chateauguay – Massena



NYISO Percent of time Interface Flow For January 1999 – December 2002

TE – NY

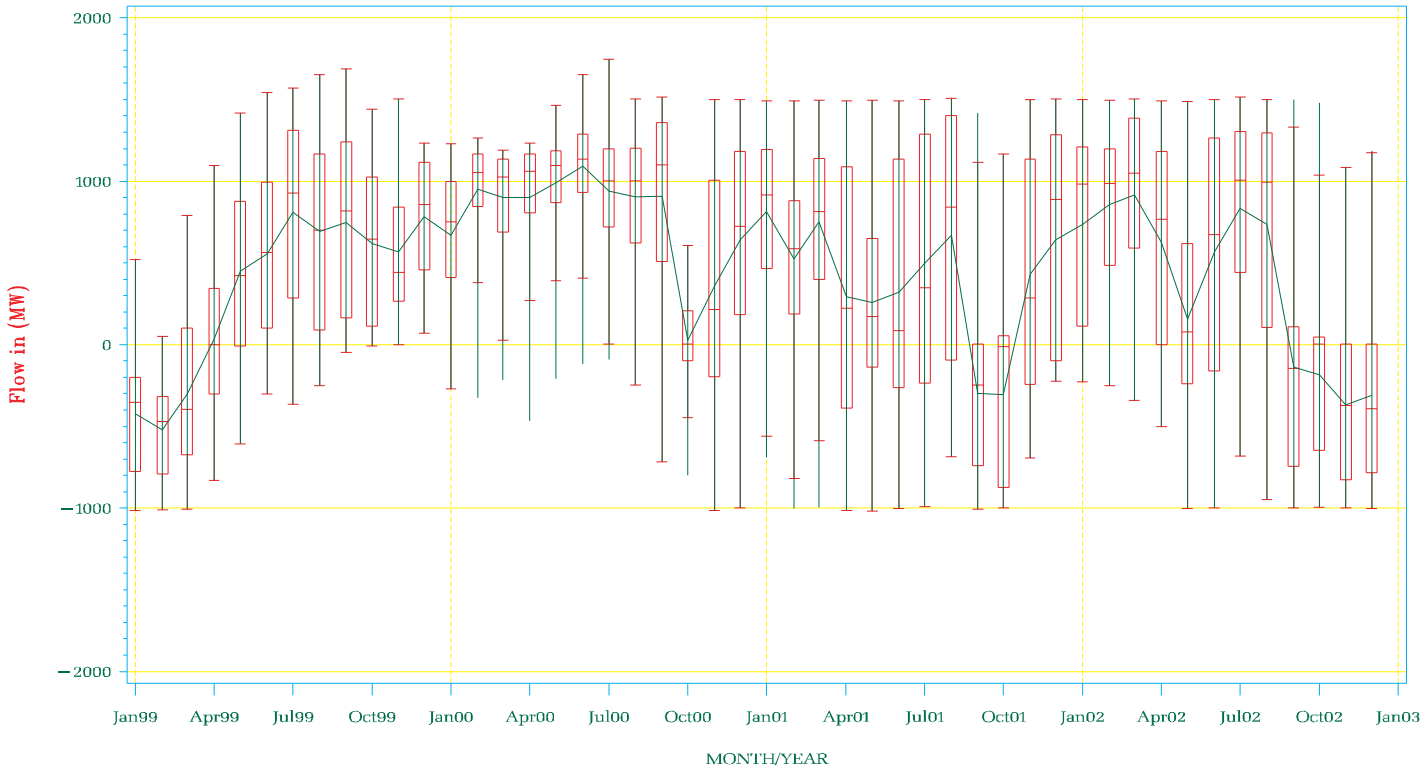
Chateauguay – Massena



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

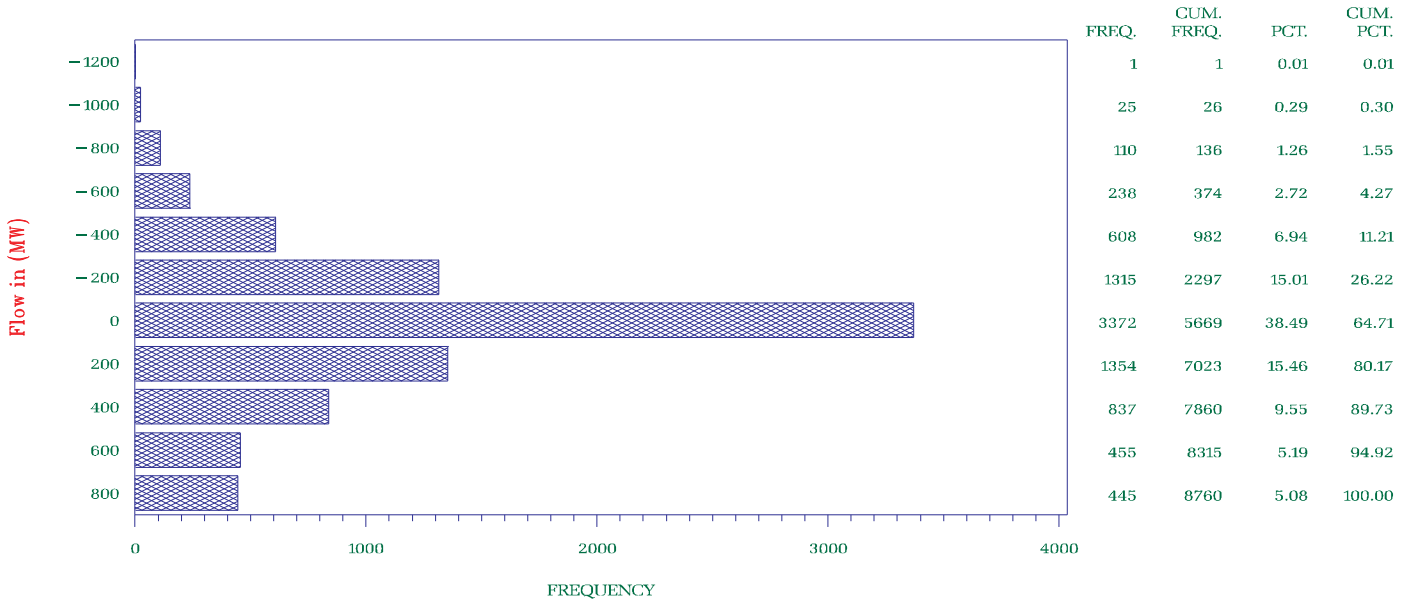
TE – NY

Chateauguay – Massena



NYISO Frequency Interface Flow For January – December 2002

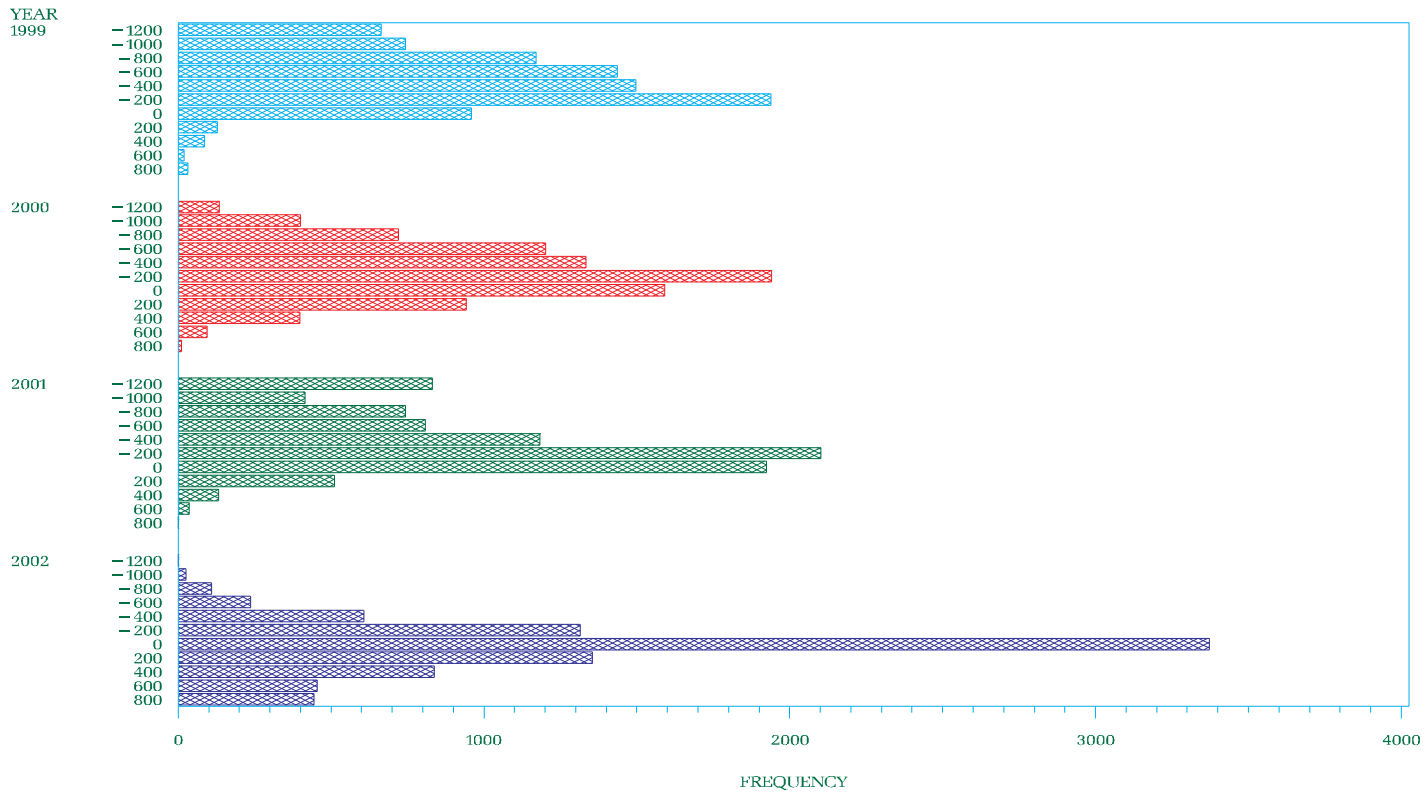
New England – NY SCHEDULE



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-1200	1	1	0.01	0.01
-1000	25	26	0.29	0.30
-800	110	136	1.26	1.55
-600	238	374	2.72	4.27
-400	608	982	6.94	11.21
-200	1315	2297	15.01	26.22
0	3372	5669	38.49	64.71
200	1354	7023	15.46	80.17
400	837	7860	9.55	89.73
600	455	8315	5.19	94.92
800	445	8760	5.08	100.00

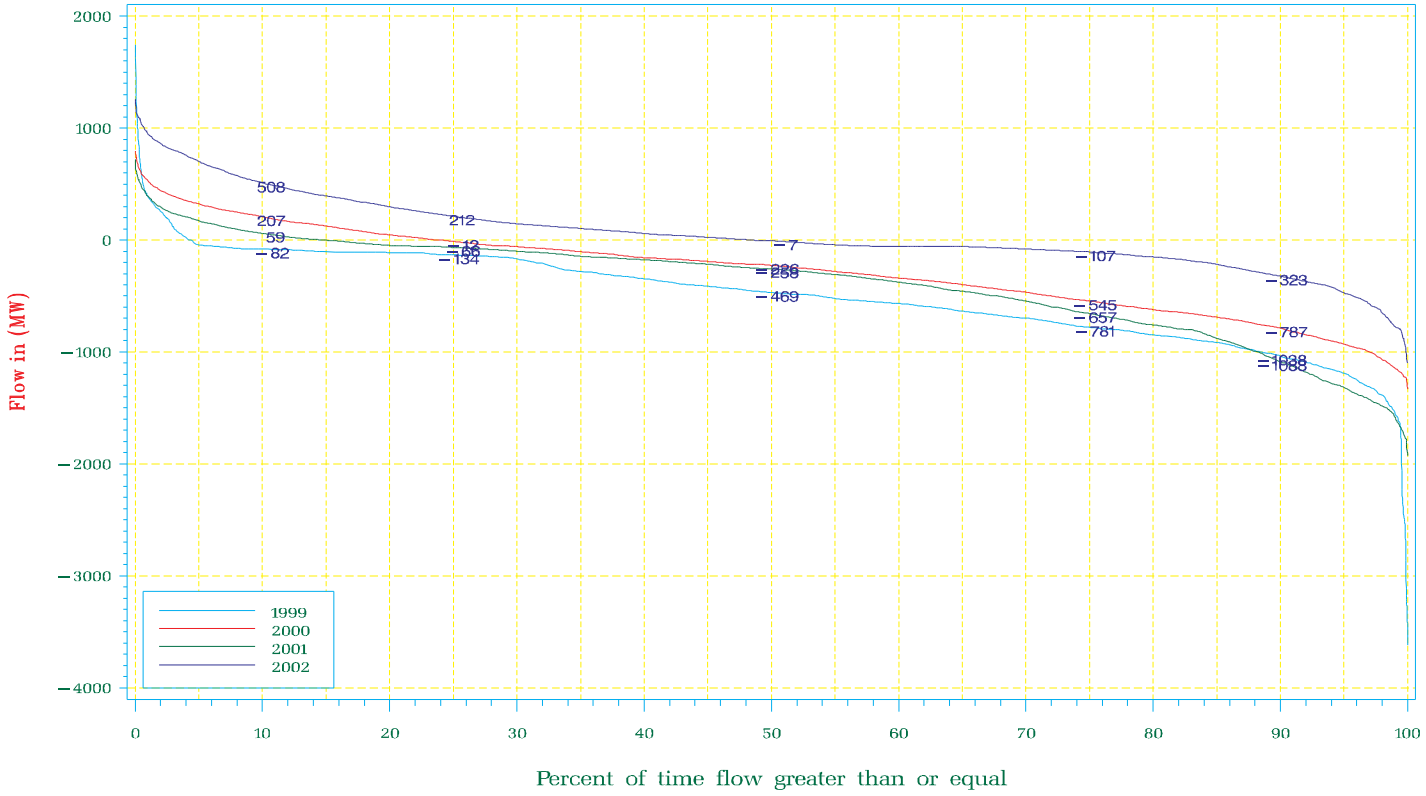
NYISO Frequency Interface Flow For January 1999 – December 2002

New England – NY SCHEDULE



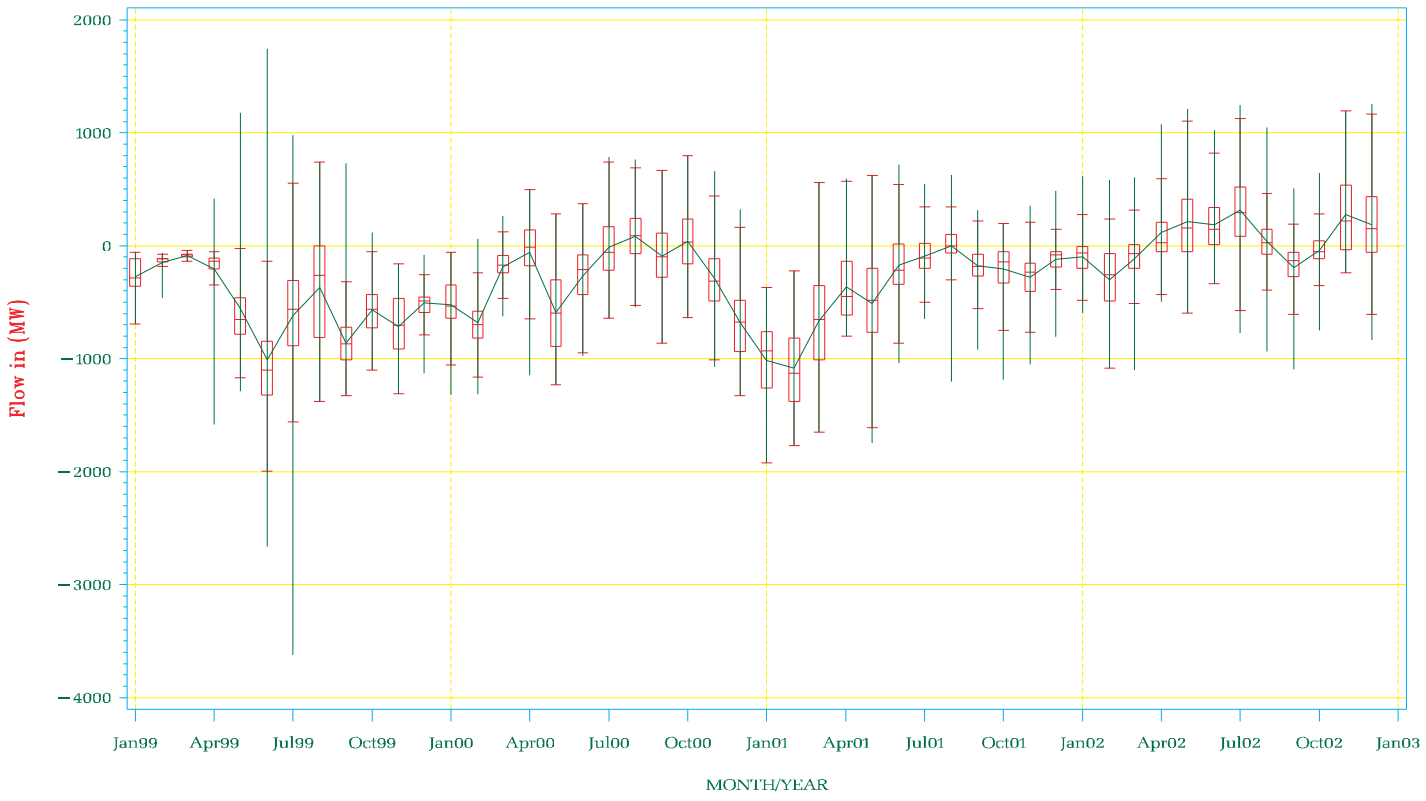
NYISO Percent of time Interface Flow For January 1999 – December 2002

New England – NY SCHEDULE



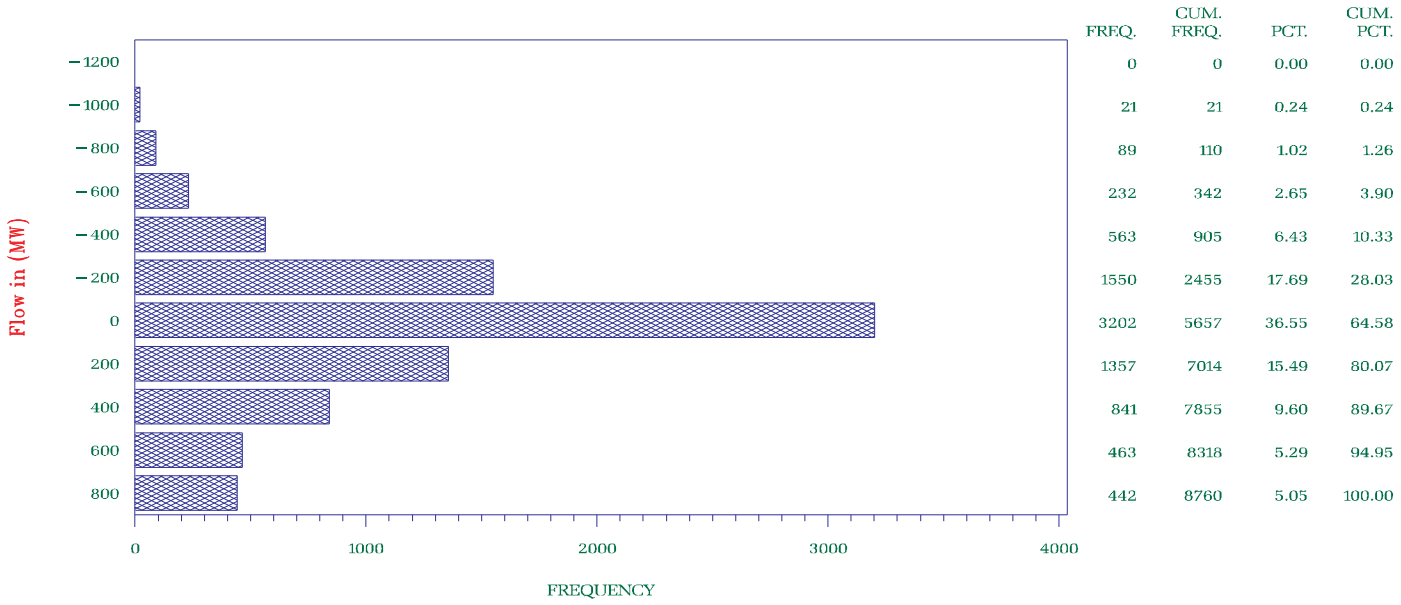
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

New England – NY SCHEDULE



NYISO Frequency Interface Flow For January – December 2002

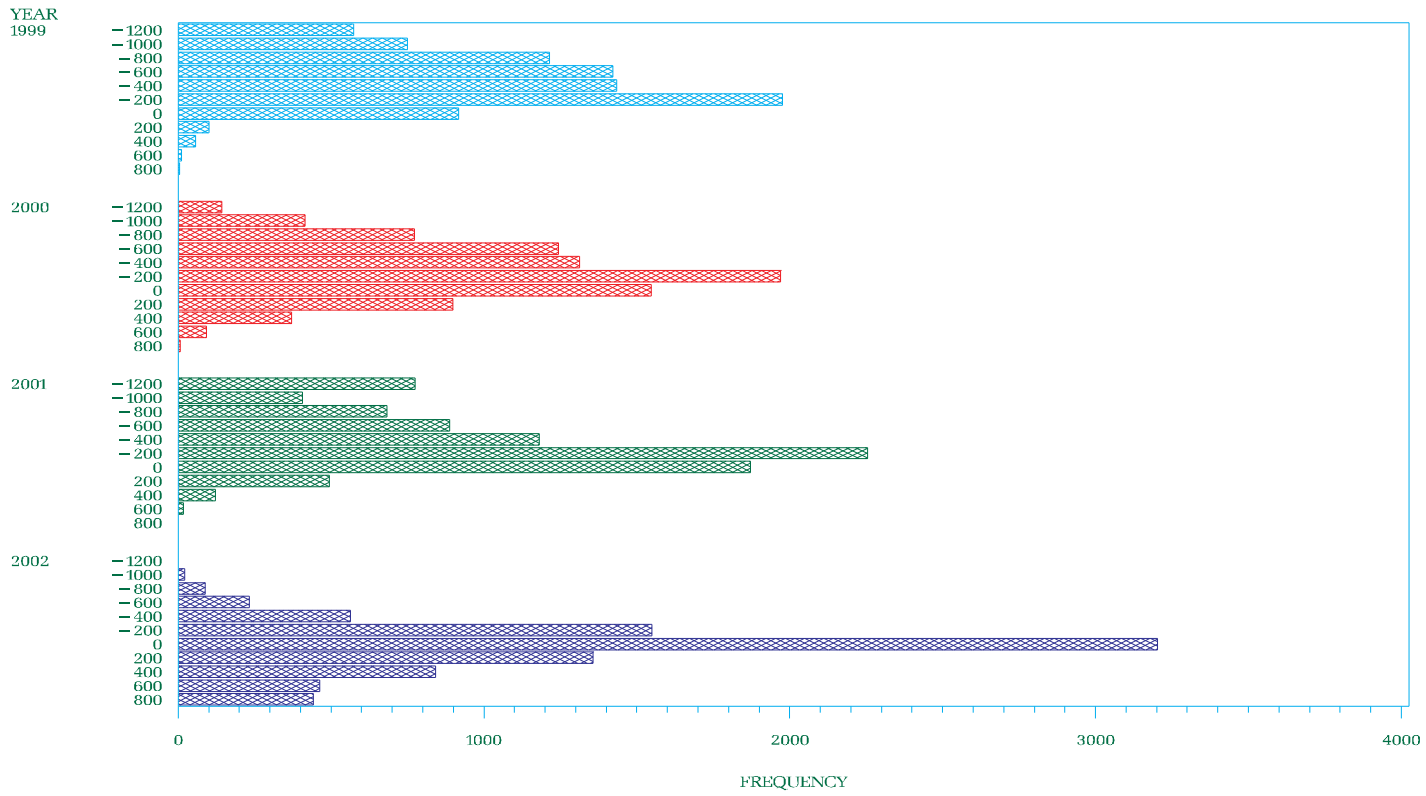
New England – NY



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-1200	0	0	0.00	0.00
-1000	21	21	0.24	0.24
-800	89	110	1.02	1.26
-600	232	342	2.65	3.90
-400	563	905	6.43	10.33
-200	1550	2455	17.69	28.03
0	3202	5657	36.55	64.58
200	1357	7014	15.49	80.07
400	841	7855	9.60	89.67
600	463	8318	5.29	94.95
800	442	8760	5.05	100.00

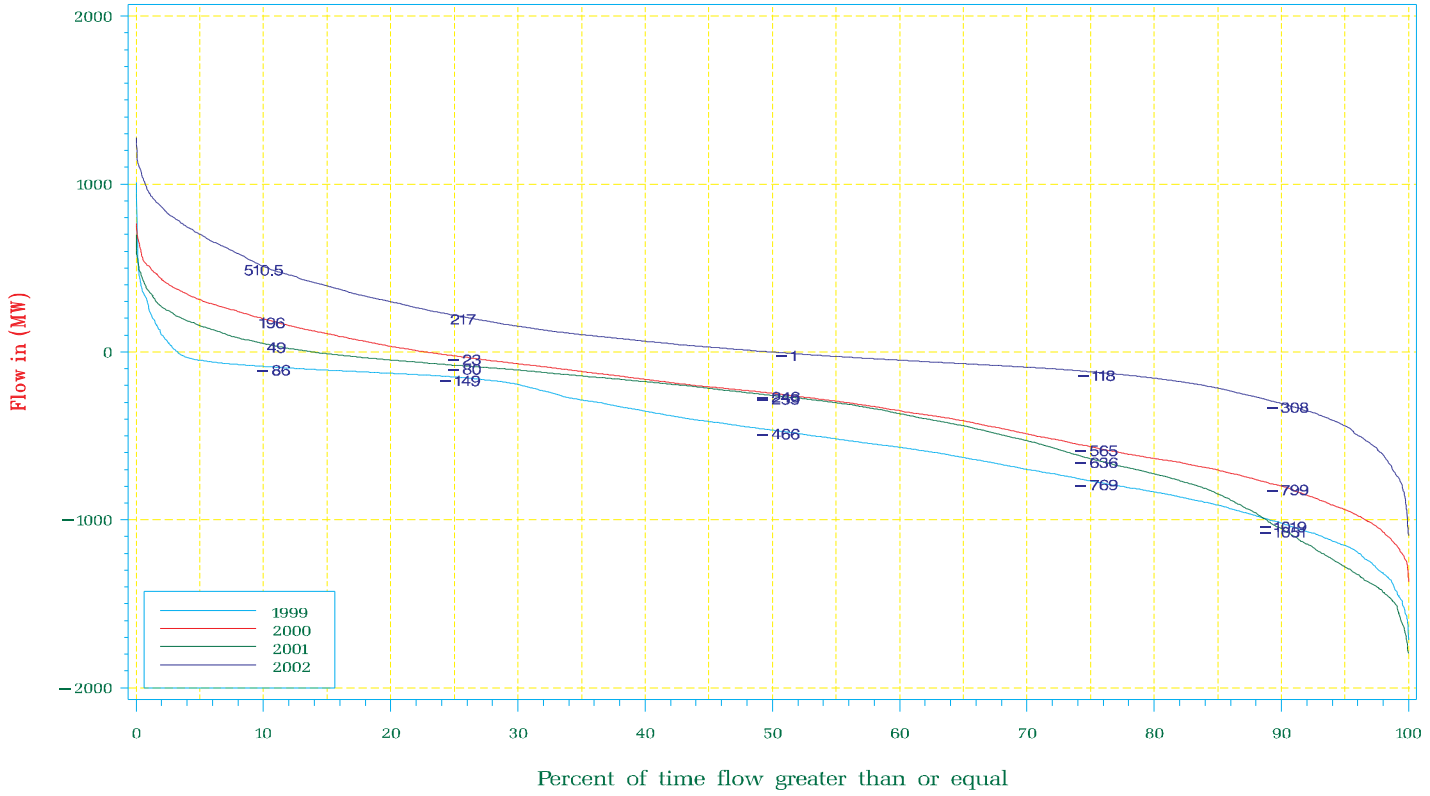
NYISO Frequency Interface Flow For January 1999 – December 2002

New England – NY



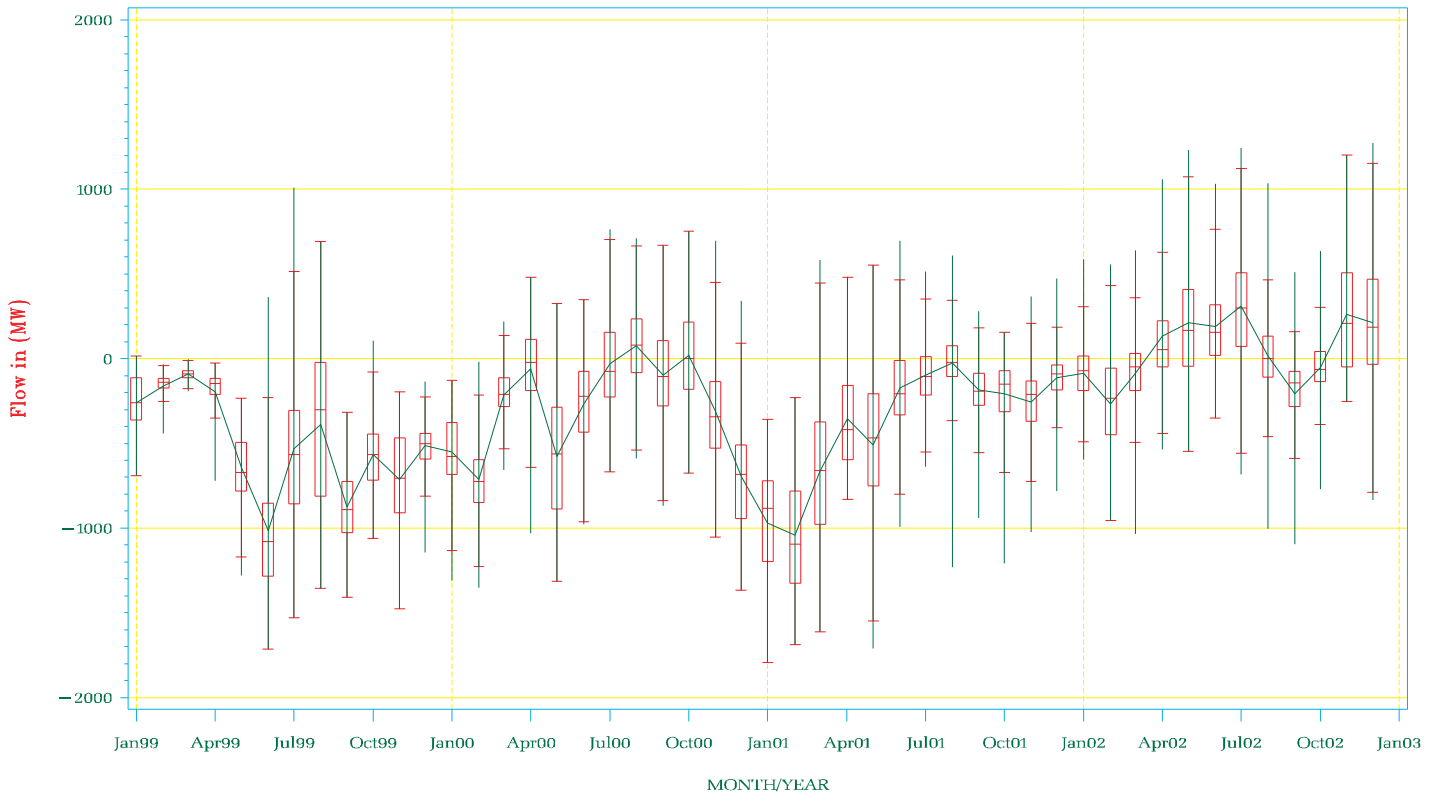
NYISO Percent of time Interface Flow For January 1999 – December 2002

New England – NY



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

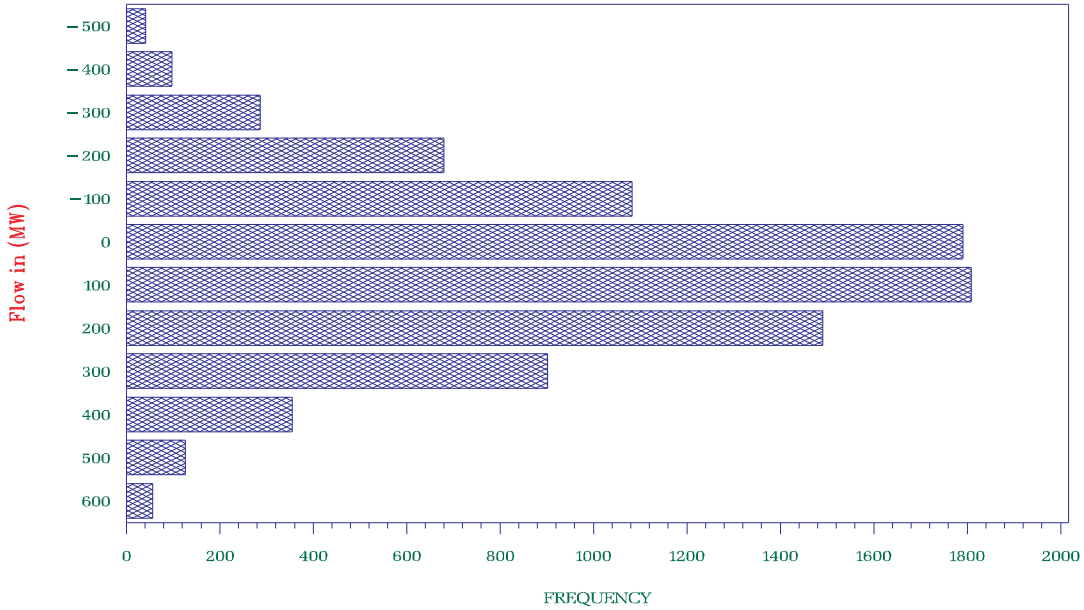
New England – NY



NYISO Frequency Interface Flow For January – December 2002

New England/NU South – Capital/Mid Hudson

398 Long Mt. – Pleasant Valley

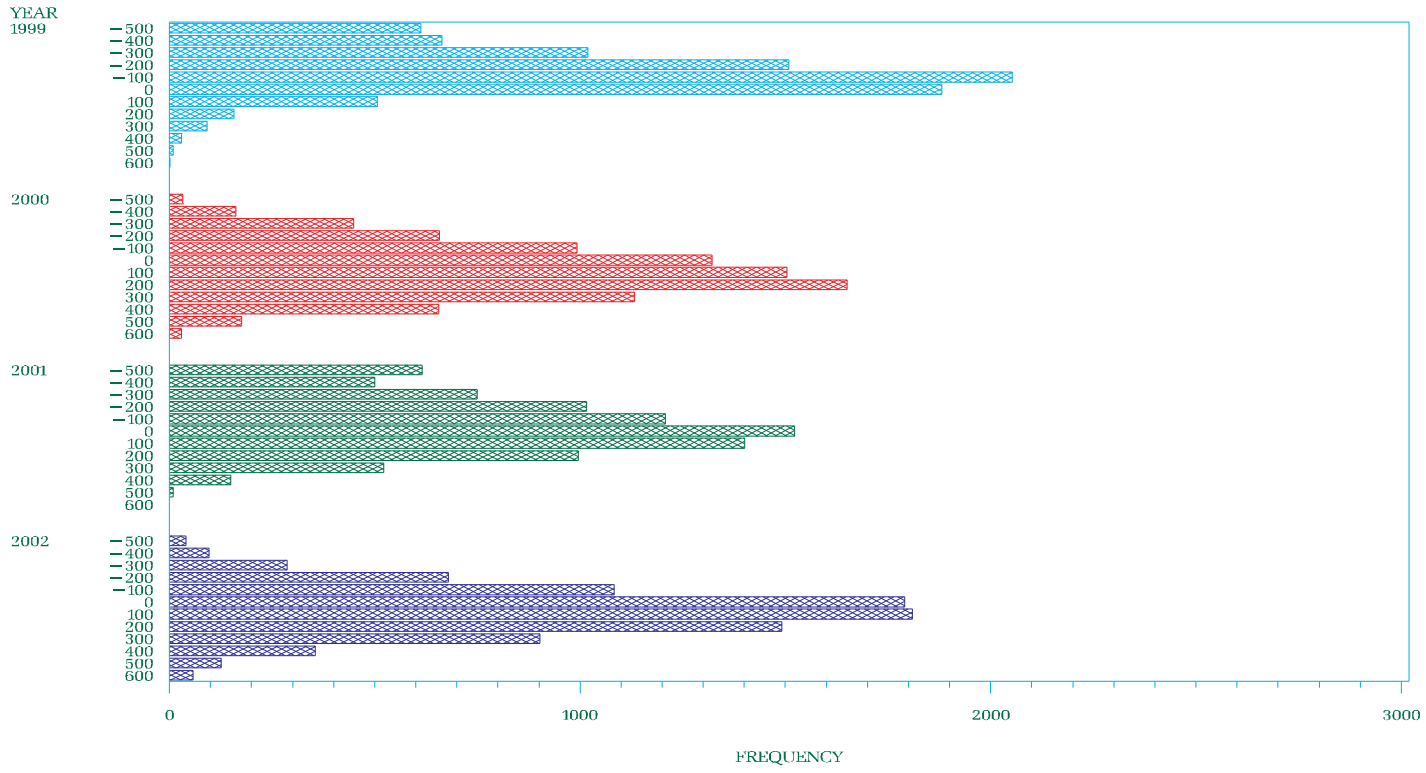


	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-500	41	41	0.47	0.47
-400	97	138	1.11	1.58
-300	286	424	3.28	4.86
-200	680	1104	7.80	12.66
-100	1083	2187	12.42	25.09
0	1791	3978	20.54	45.63
100	1809	5787	20.75	66.38
200	1491	7278	17.10	83.48
300	902	8180	10.35	93.83
400	355	8535	4.07	97.90
500	126	8661	1.45	99.35
600	57	8718	0.65	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

New England/NU South – Capital/Mid Hudson

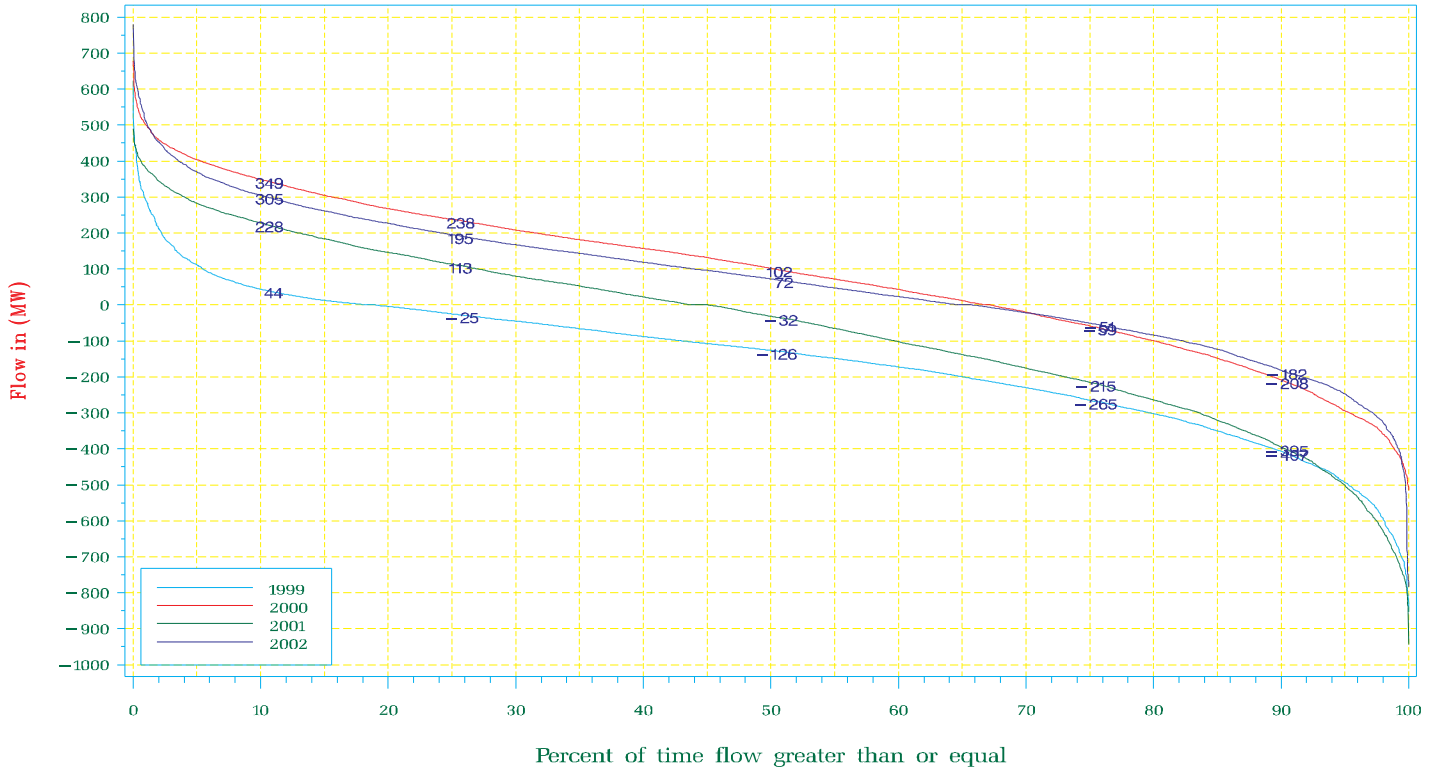
398 Long Mt. – Pleasant Valley



NYISO Percent of time Interface Flow For January 1999 – December 2002

New England/NU South – Capital/Mid Hudson

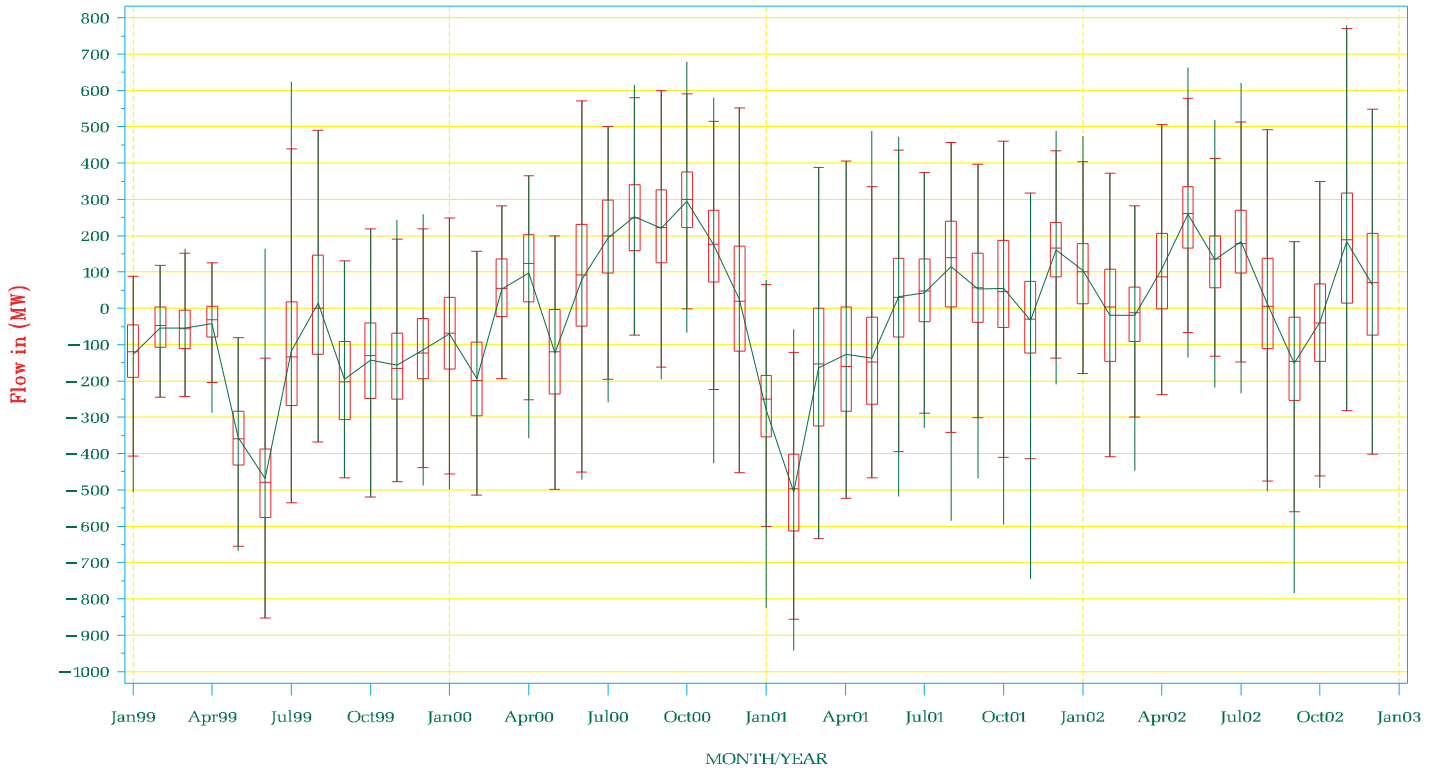
398 Long Mt. – Pleasant Valley



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

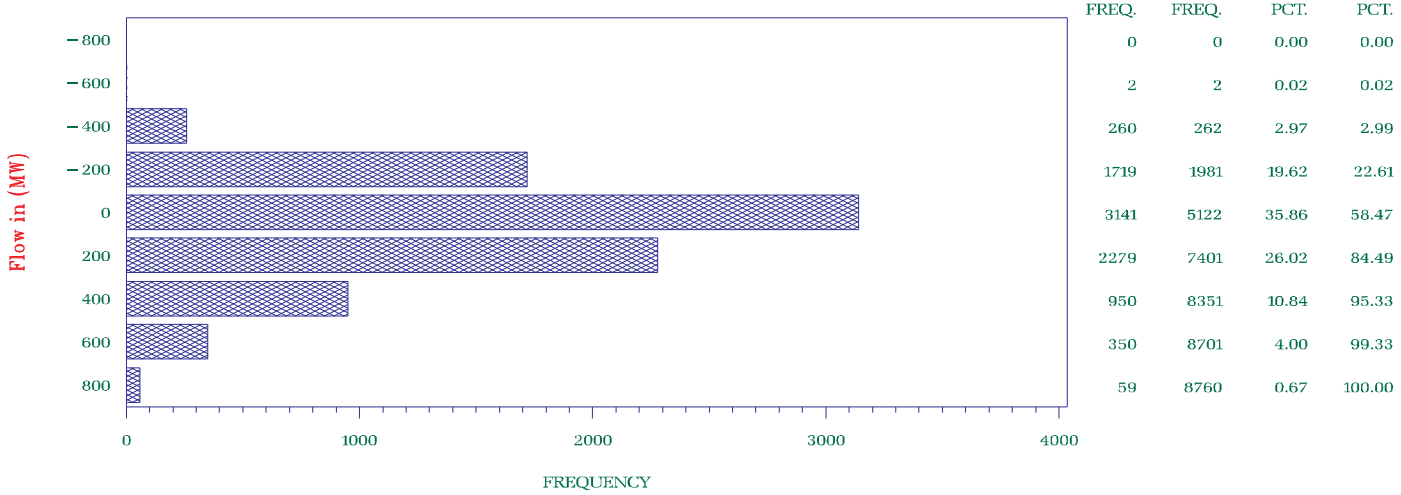
New England/NU South – Capital/Mid Hudson

398 Long Mt. – Pleasant Valley



NYISO Frequency Interface Flow For January – December 2002

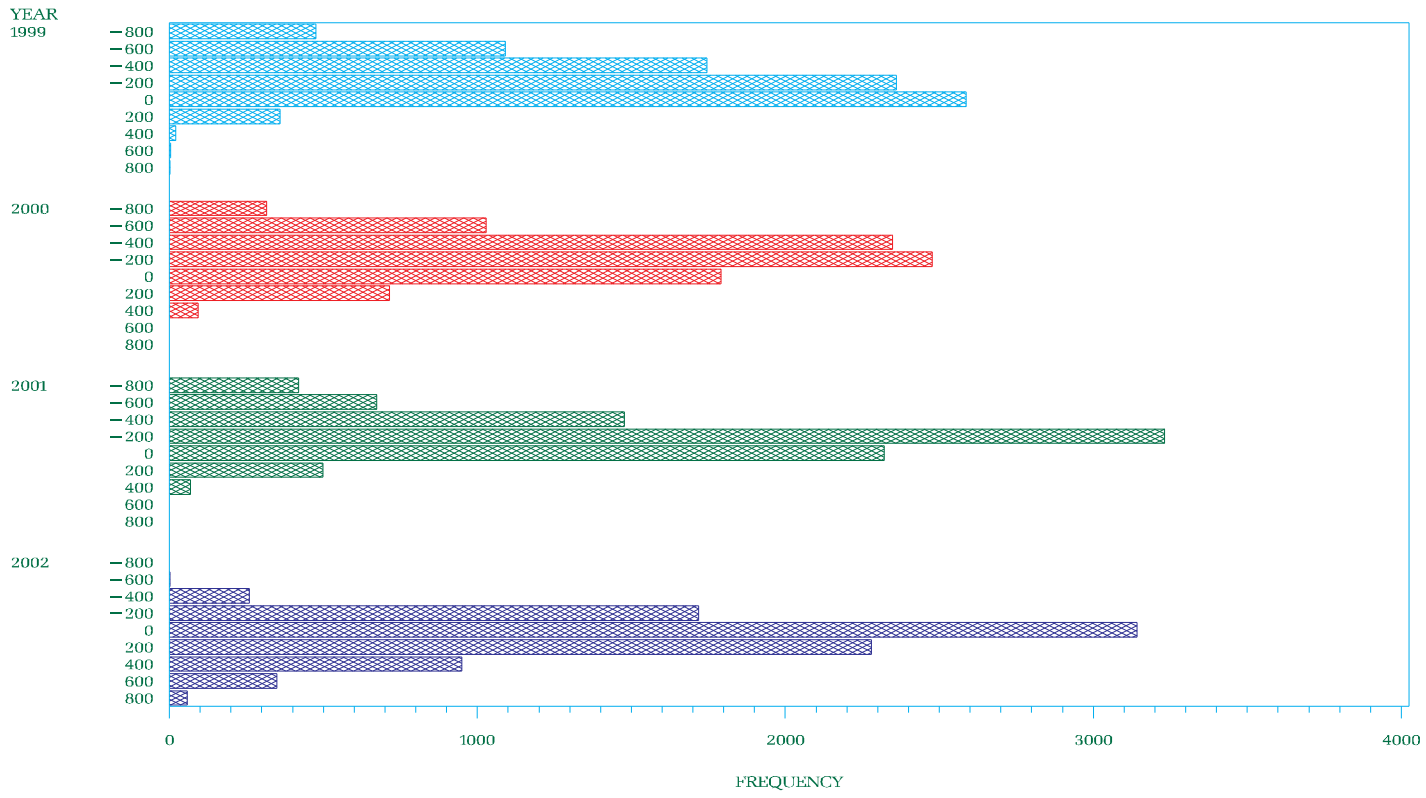
New England/Vt/NE/NU South – Capital/Mid Hudson



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-800	0	0	0.00	0.00
-600	2	2	0.02	0.02
-400	260	262	2.97	2.99
-200	1719	1981	19.62	22.61
0	3141	5122	35.86	58.47
200	2279	7401	26.02	84.49
400	950	8351	10.84	95.33
600	350	8701	4.00	99.33
800	59	8760	0.67	100.00

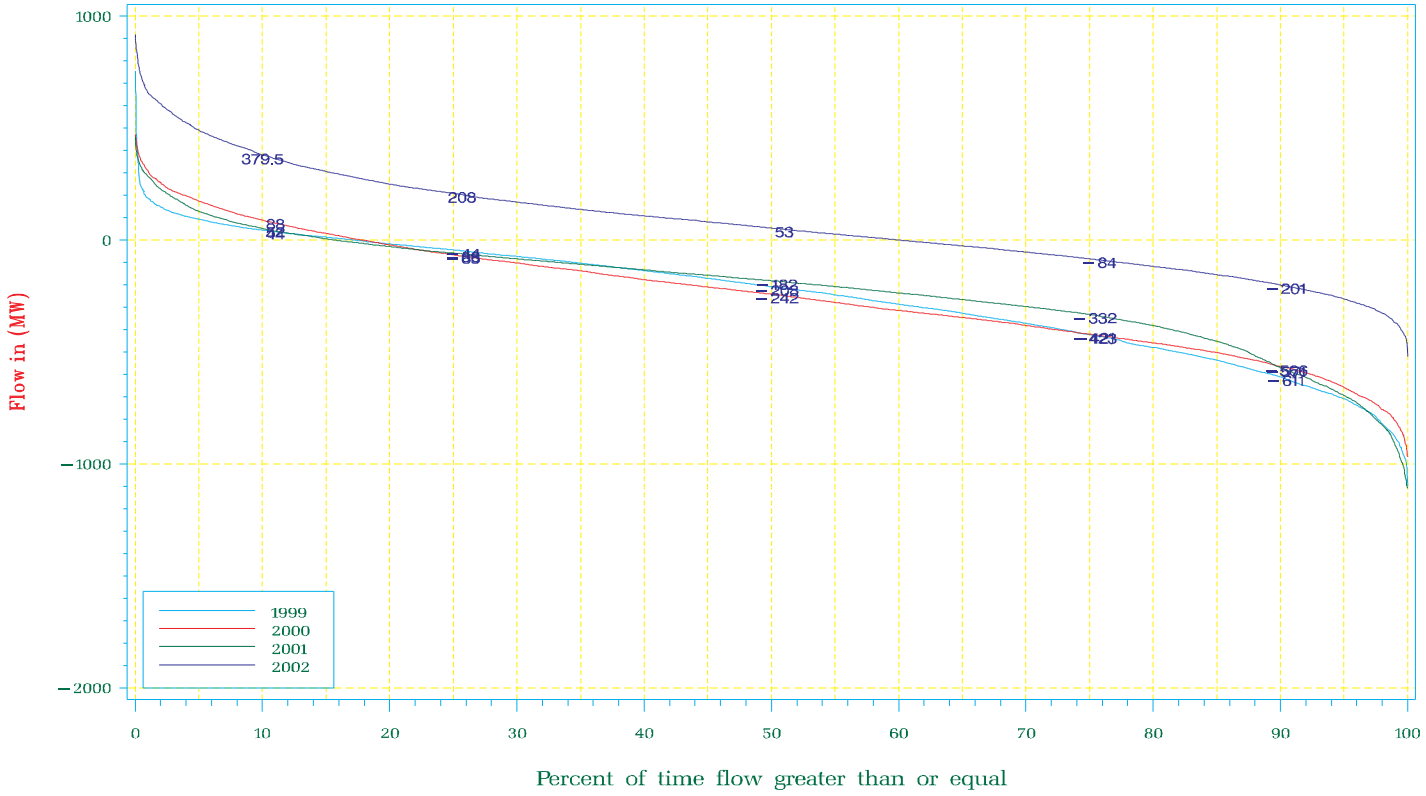
NYISO Frequency Interface Flow For January 1999 – December 2002

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



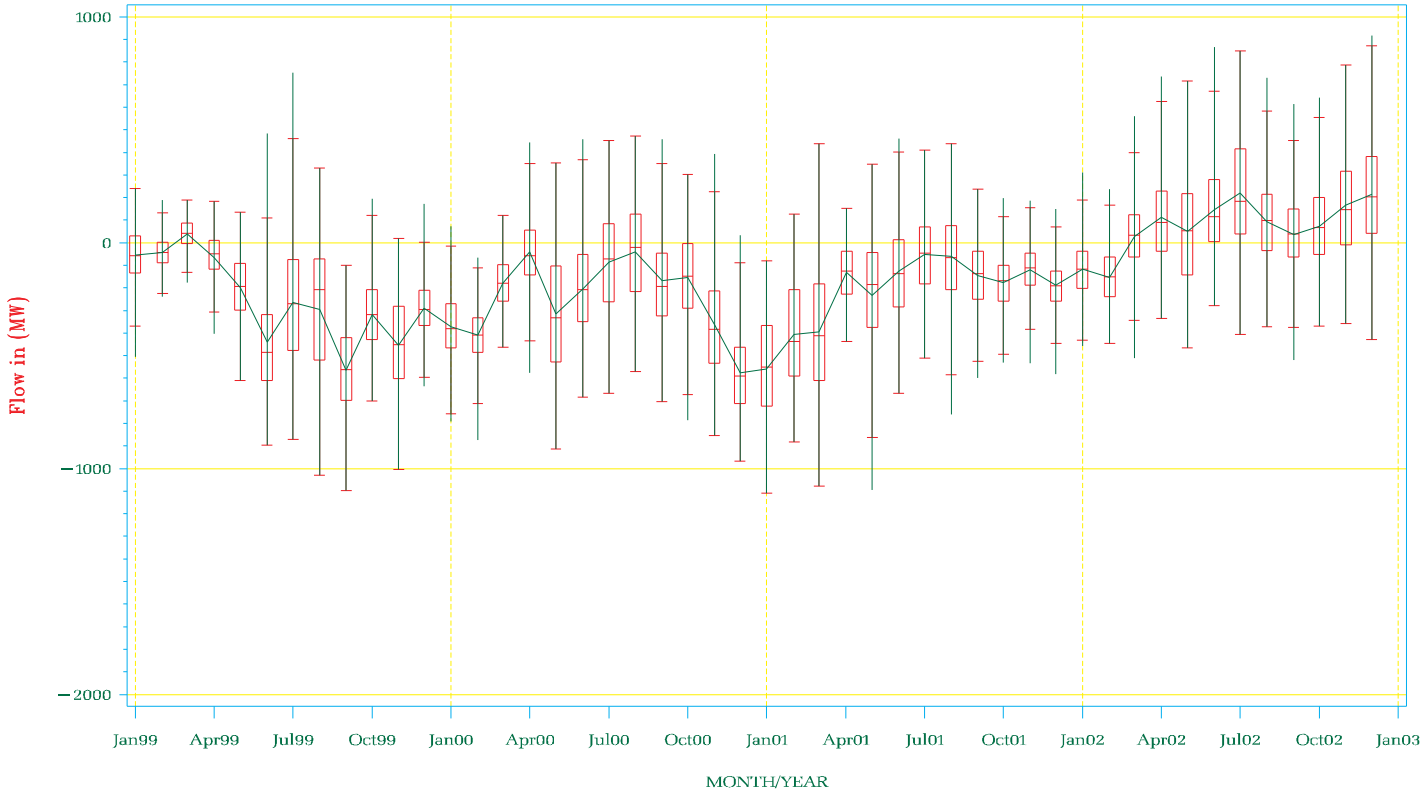
NYISO Percent of time Interface Flow For January 1999 – December 2002

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



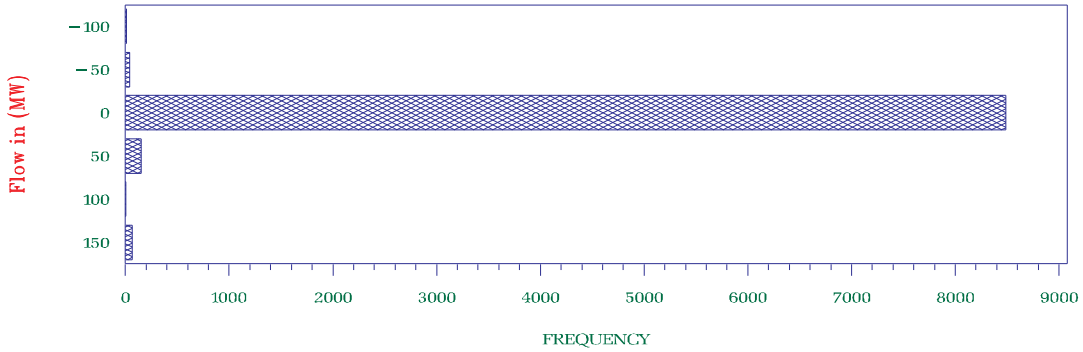
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

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



NYISO Frequency Interface Flow For January – December 2002

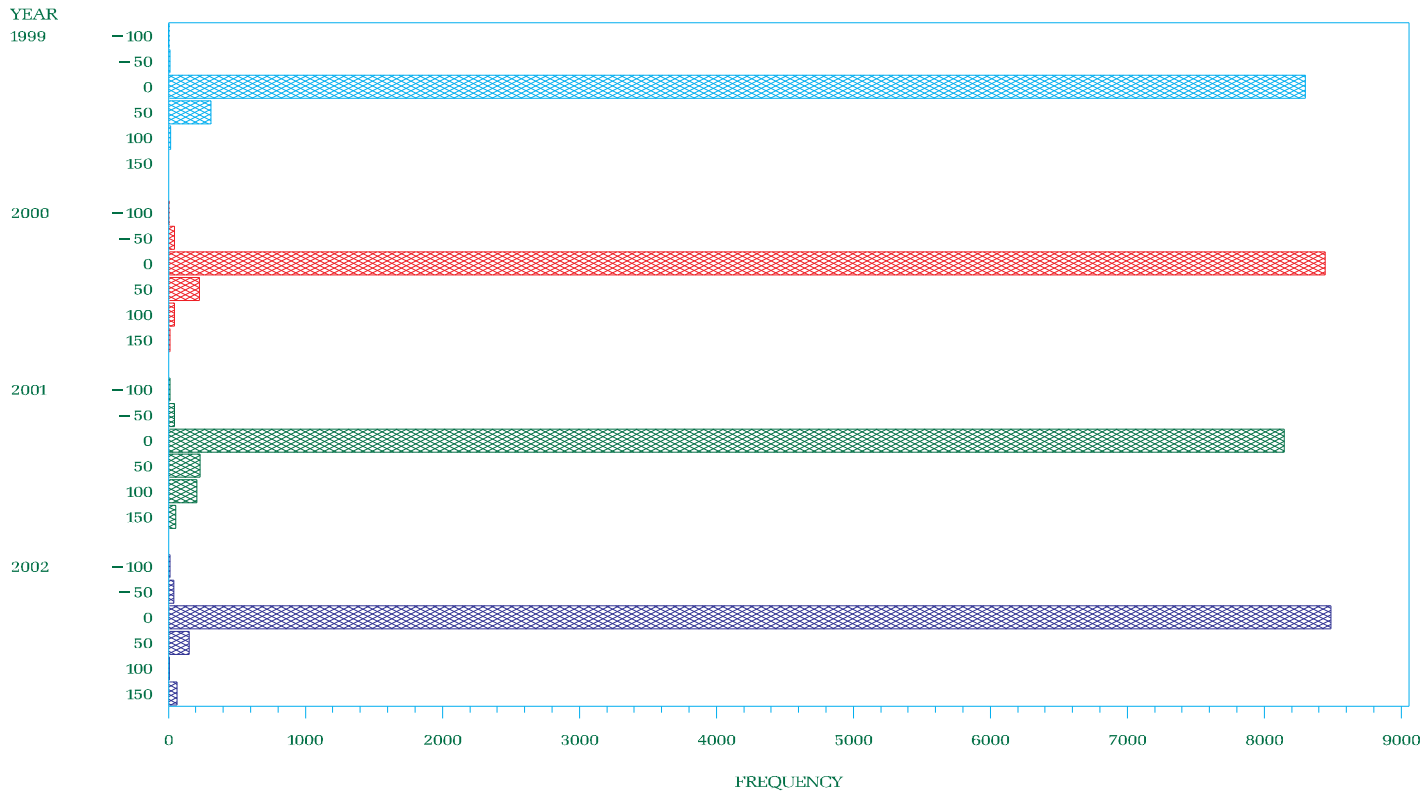
New England/NU – Long Island



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-100	10	10	0.11	0.11
-50	41	51	0.47	0.58
0	8486	8537	96.92	97.50
50	151	8688	1.72	99.22
100	4	8692	0.05	99.27
150	64	8756	0.73	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

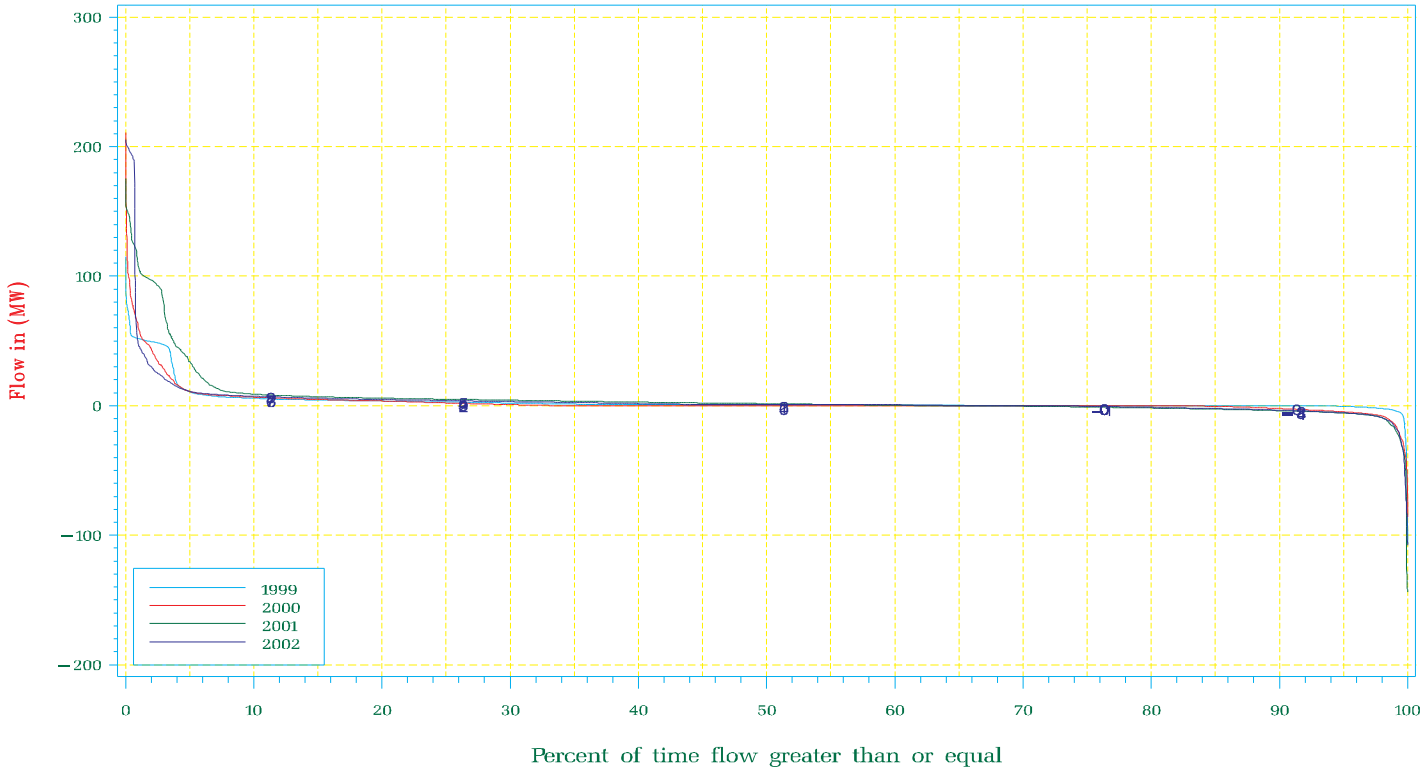
New England/NU – Long Island



NYISO Percent of time Interface Flow For January 1999 – December 2002

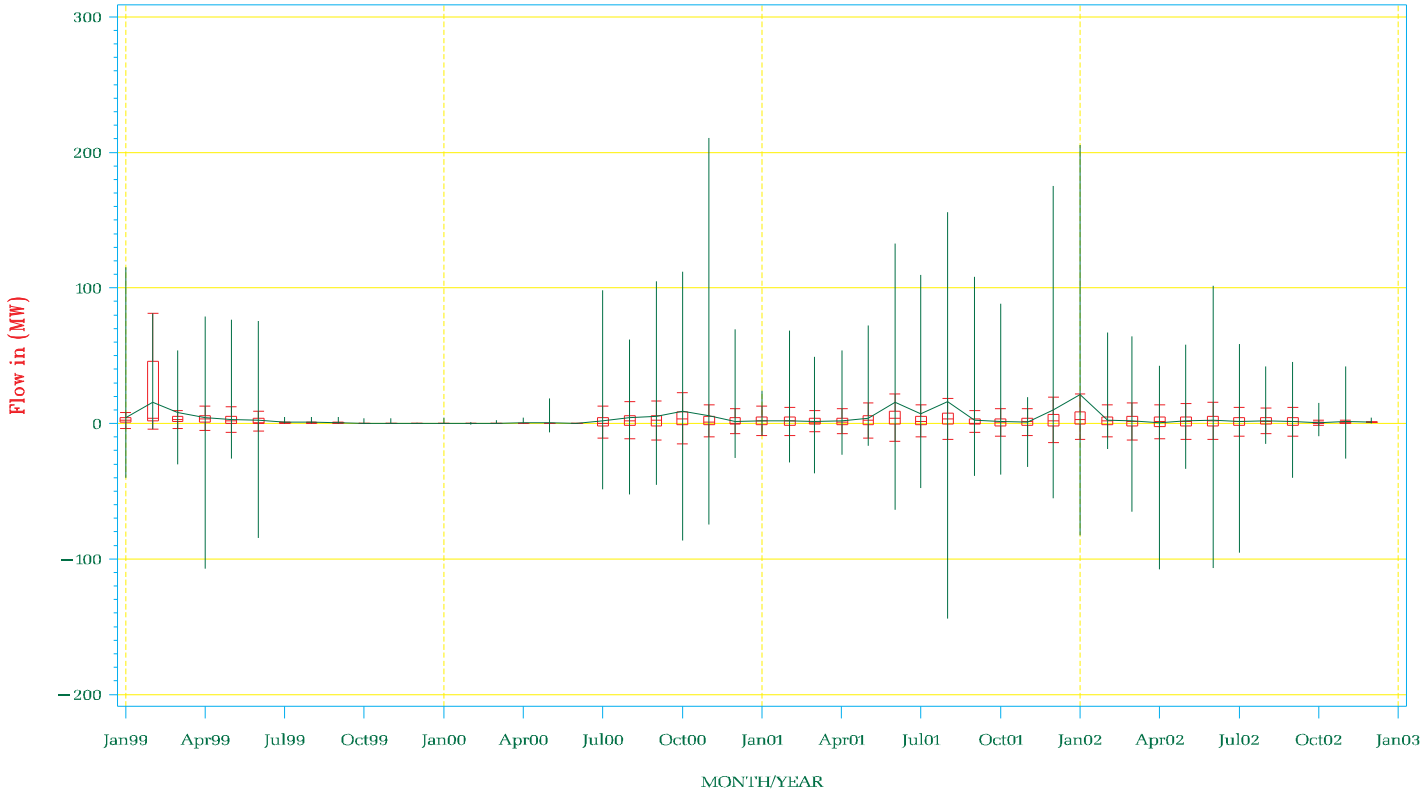
New England/NU – Long Island

1385 Northport – Norwalk Harbor



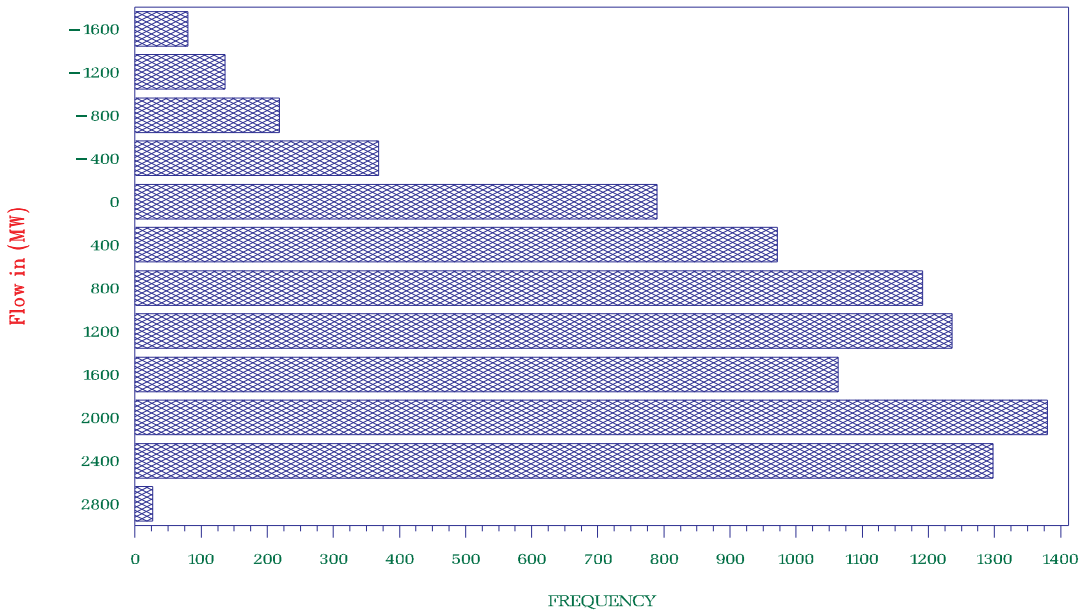
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

New England/NU – Long Island



NYISO Frequency Interface Flow For January – December 2002

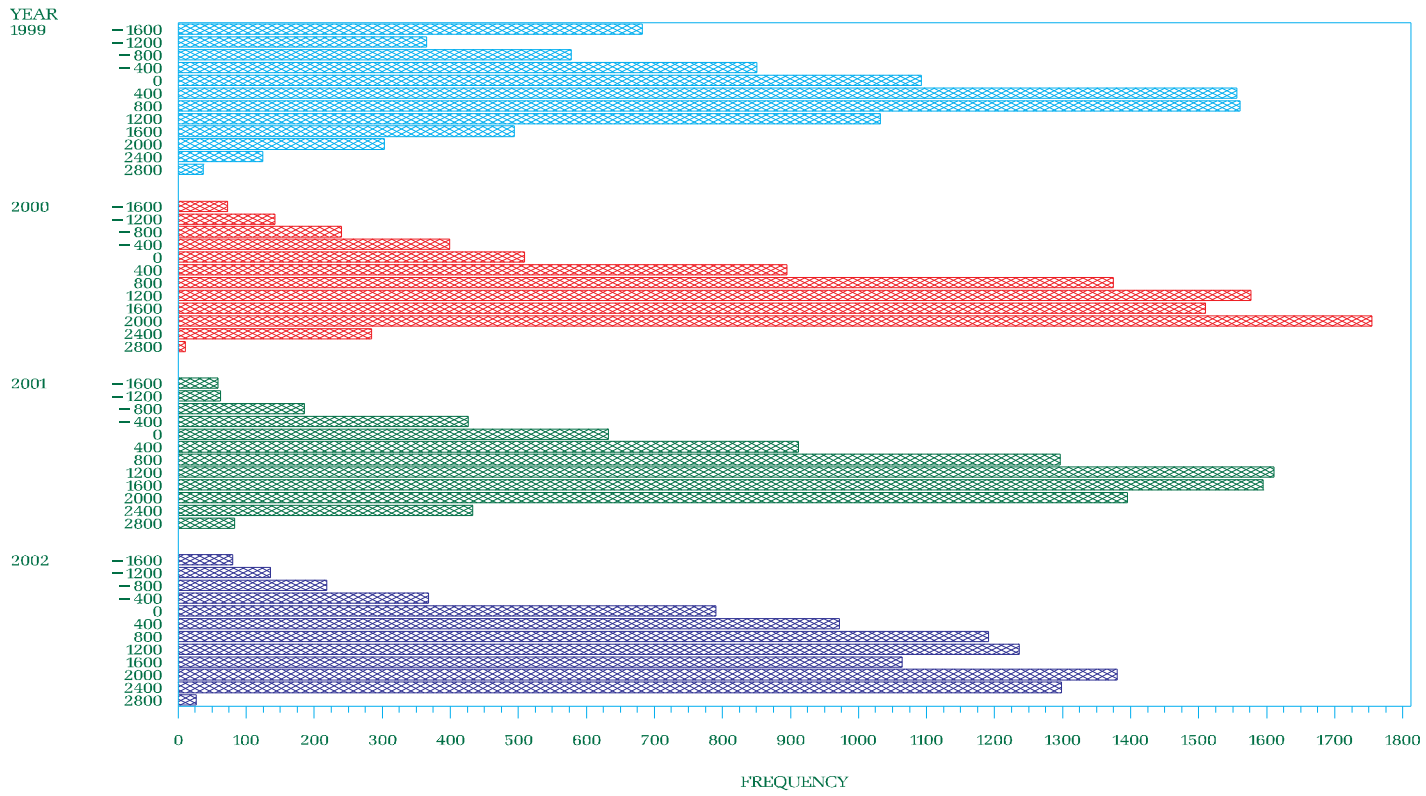
PJM – NY SCHEDULE



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-1600	80	80	0.91	0.91
-1200	136	216	1.55	2.47
-800	218	434	2.49	4.95
-400	368	802	4.20	9.16
0	790	1592	9.02	18.17
400	972	2564	11.10	29.27
800	1191	3755	13.60	42.87
1200	1236	4991	14.11	56.97
1600	1064	6055	12.15	69.12
2000	1380	7435	15.75	84.87
2400	1298	8733	14.82	99.69
2800	27	8760	0.31	100.00

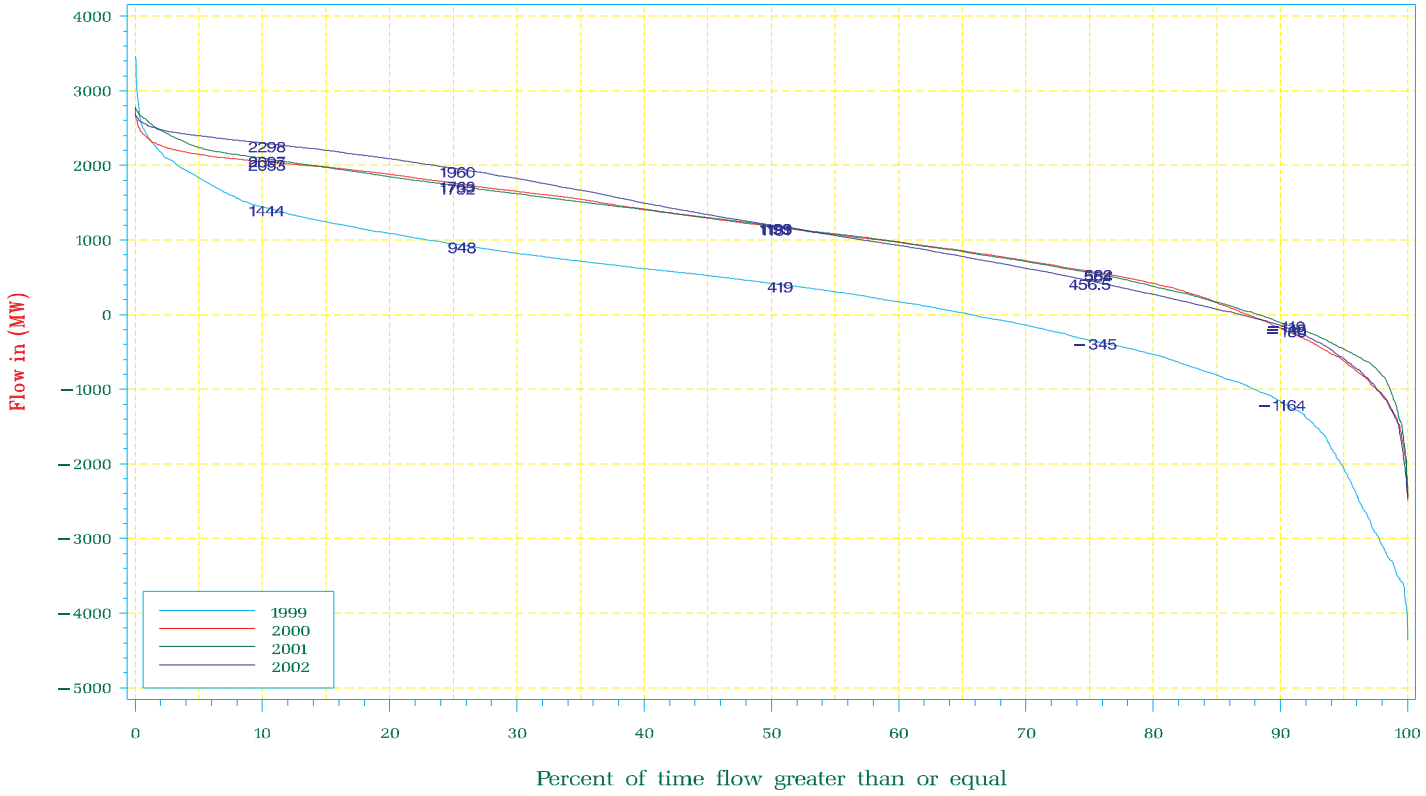
NYISO Frequency Interface Flow For January 1999 – December 2002

PJM – NY SCHEDULE



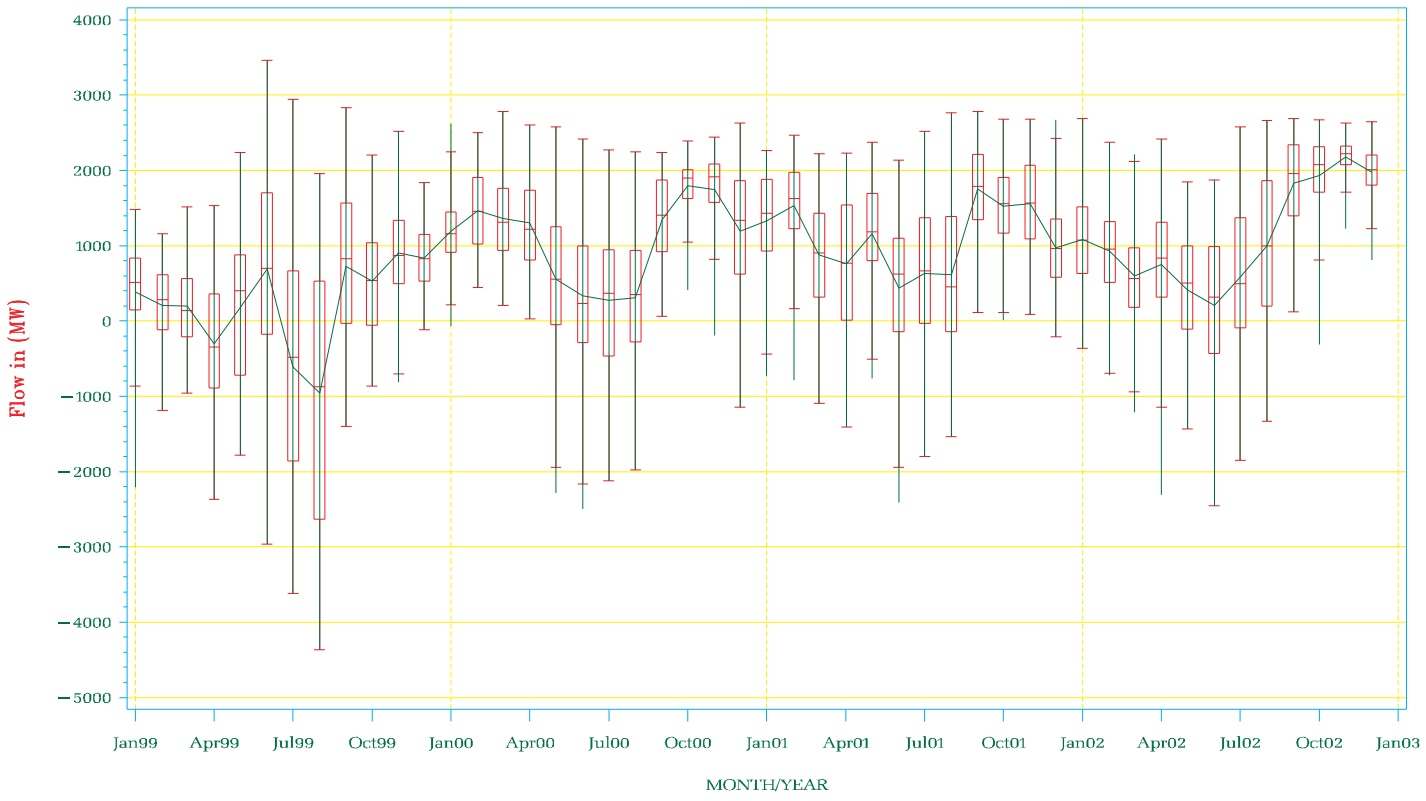
NYISO Percent of time Interface Flow For January 1999 – December 2002

PJM – NY SCHEDULE



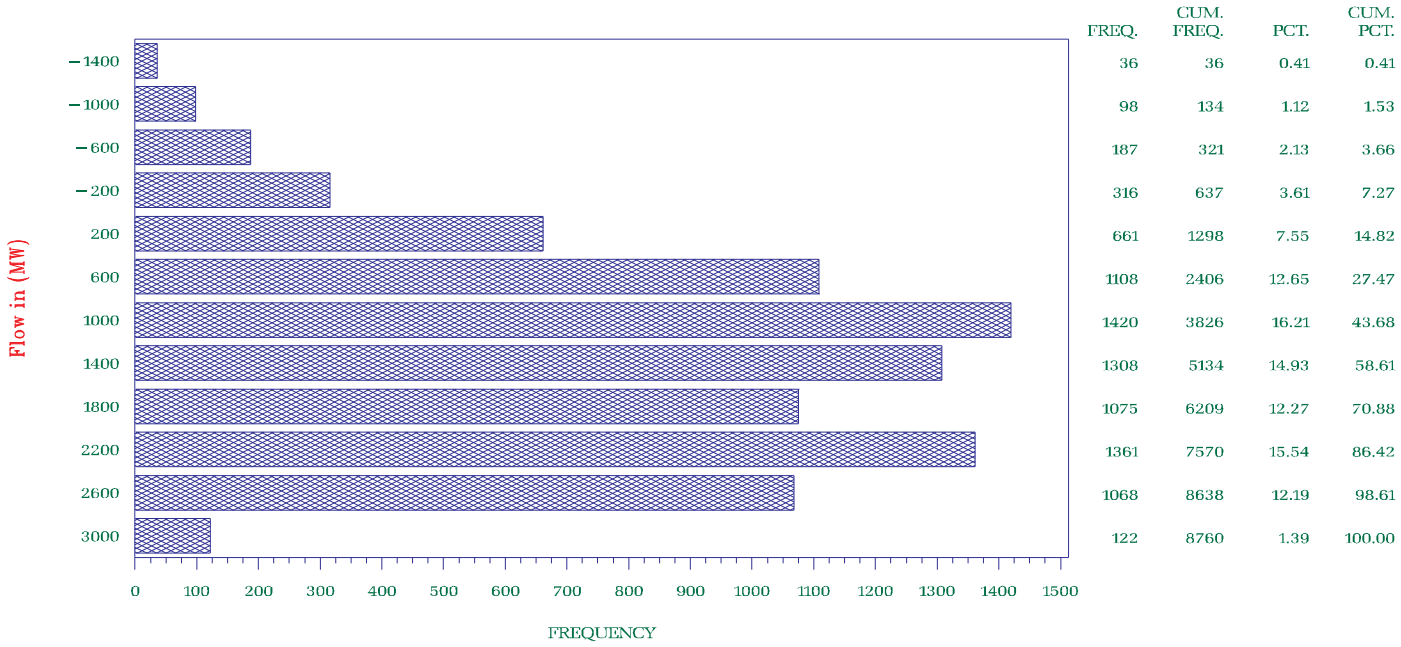
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

PJM – NY SCHEDULE



NYISO Frequency Interface Flow For January – December 2002

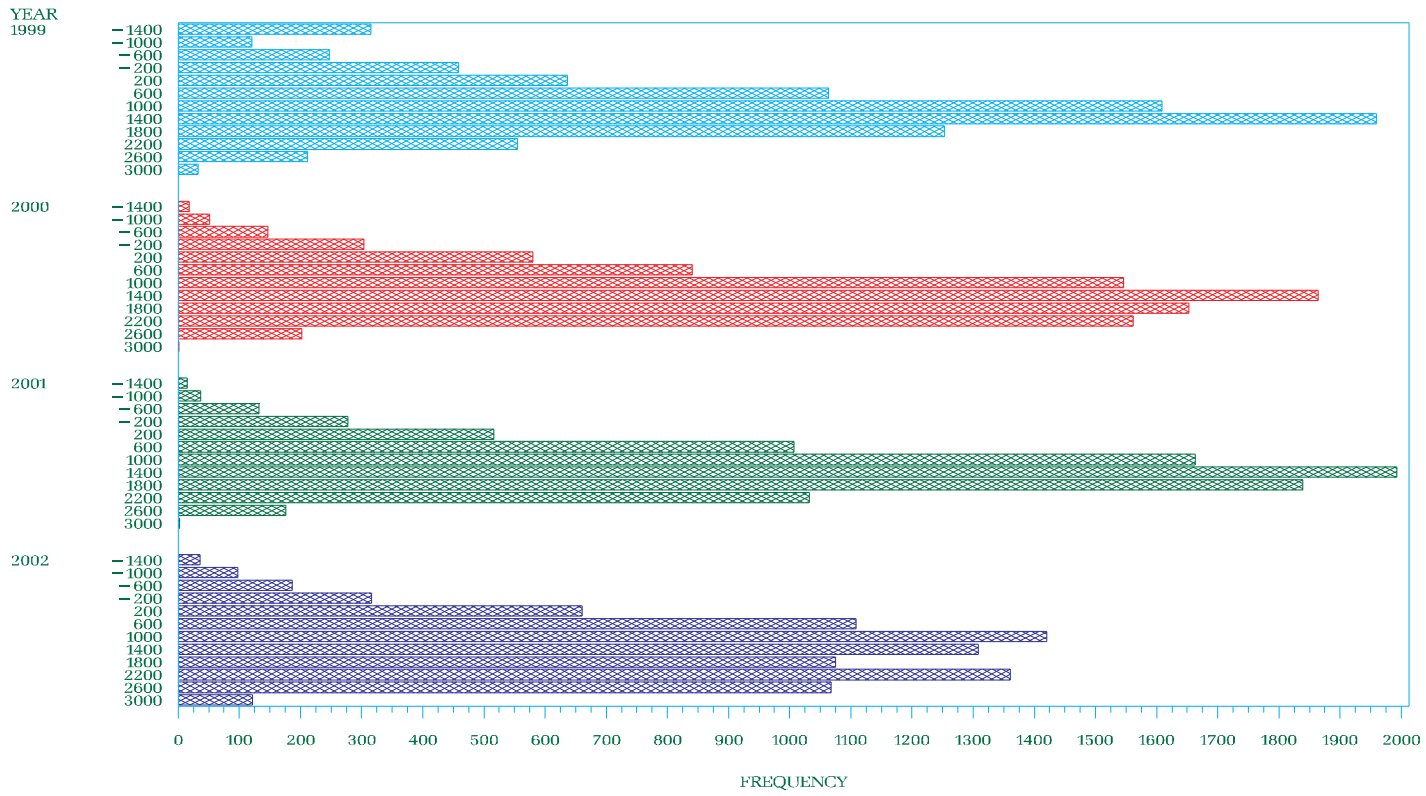
PJM – NY



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-1400	36	36	0.41	0.41
-1000	98	134	1.12	1.53
-600	187	321	2.13	3.66
-200	316	637	3.61	7.27
200	661	1298	7.55	14.82
600	1108	2406	12.65	27.47
1000	1420	3826	16.21	43.68
1400	1308	5134	14.93	58.61
1800	1075	6209	12.27	70.88
2200	1361	7570	15.54	86.42
2600	1068	8638	12.19	98.61
3000	122	8760	1.39	100.00

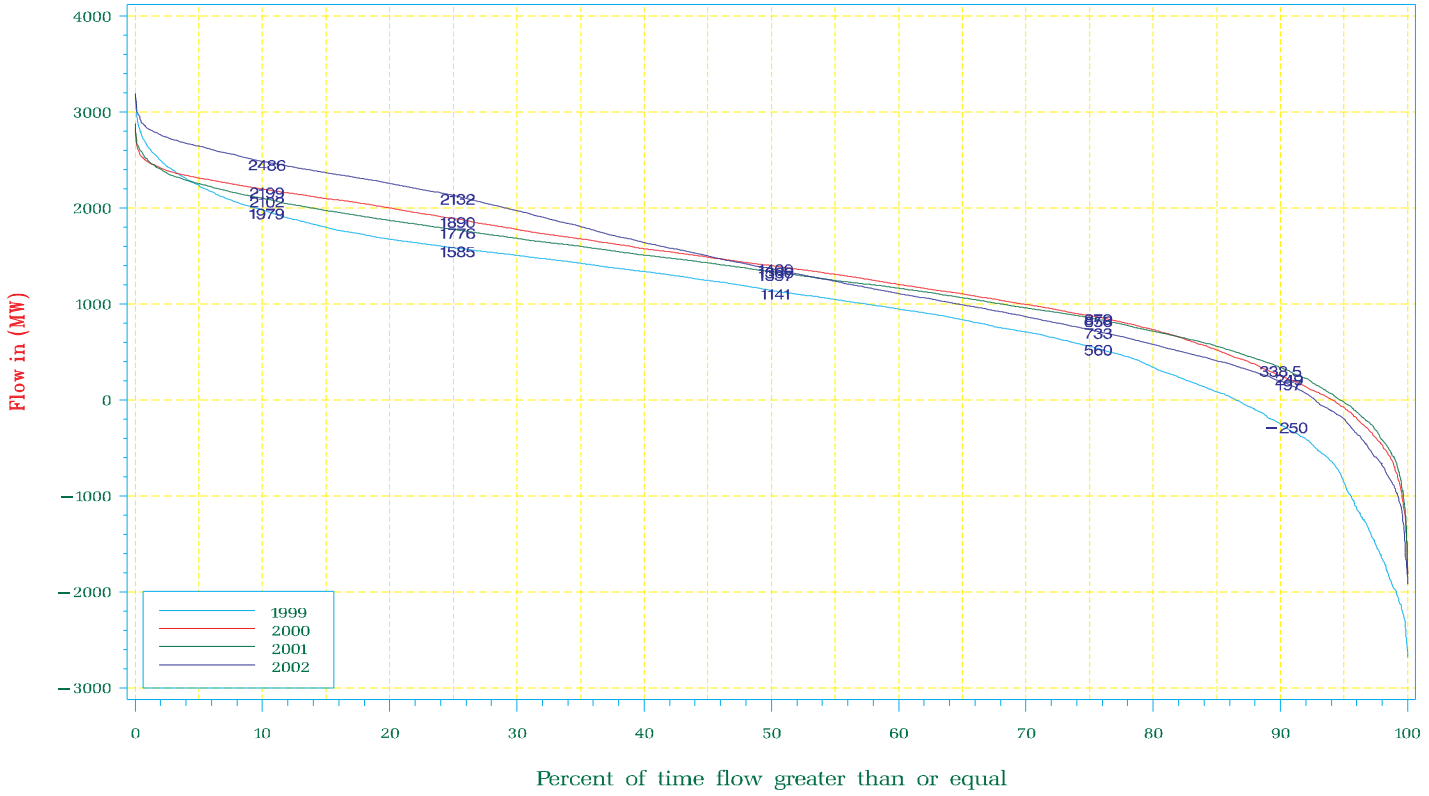
NYISO Frequency Interface Flow For January 1999 – December 2002

PJM – NY



NYISO Percent of time Interface Flow For January 1999 – December 2002

PJM – NY

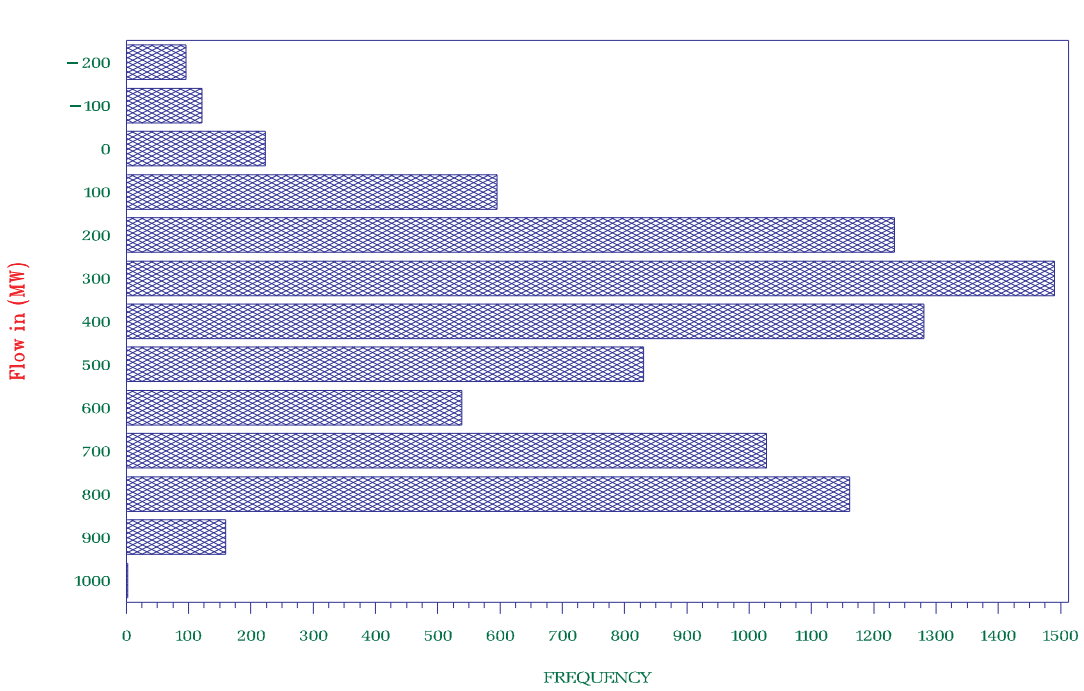


NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

PJM – NY

NYISO Frequency Interface Flow For January – December 2002

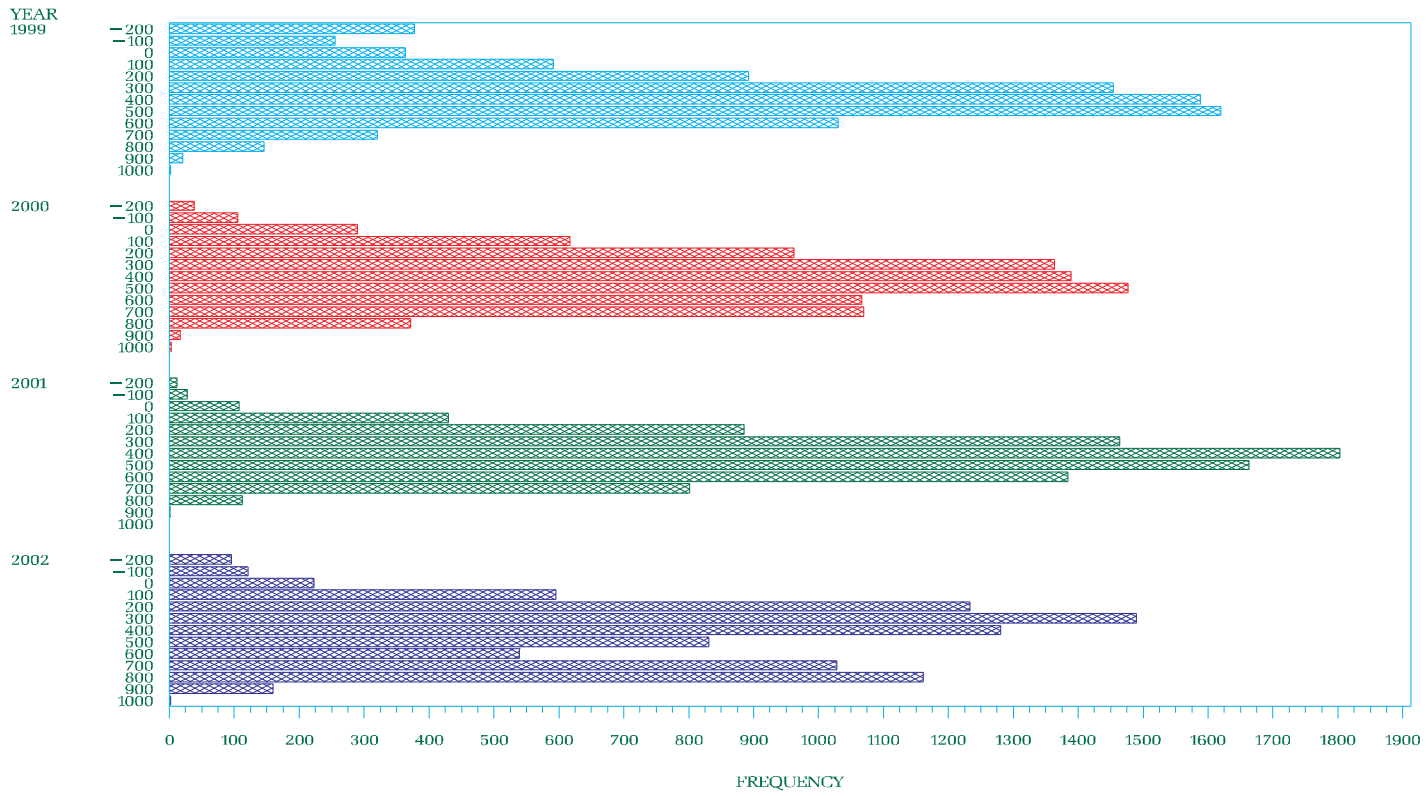
PJM West – Central



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-200	96	96	1.10	1.10
-100	121	217	1.38	2.48
0	223	440	2.55	5.02
100	595	1035	6.79	11.82
200	1233	2268	14.08	25.89
300	1490	3758	17.01	42.90
400	1281	5039	14.62	57.52
500	831	5870	9.49	67.01
600	539	6409	6.15	73.16
700	1028	7437	11.74	84.90
800	1161	8598	13.25	98.15
900	160	8758	1.83	99.98
1000	2	8760	0.02	100.00

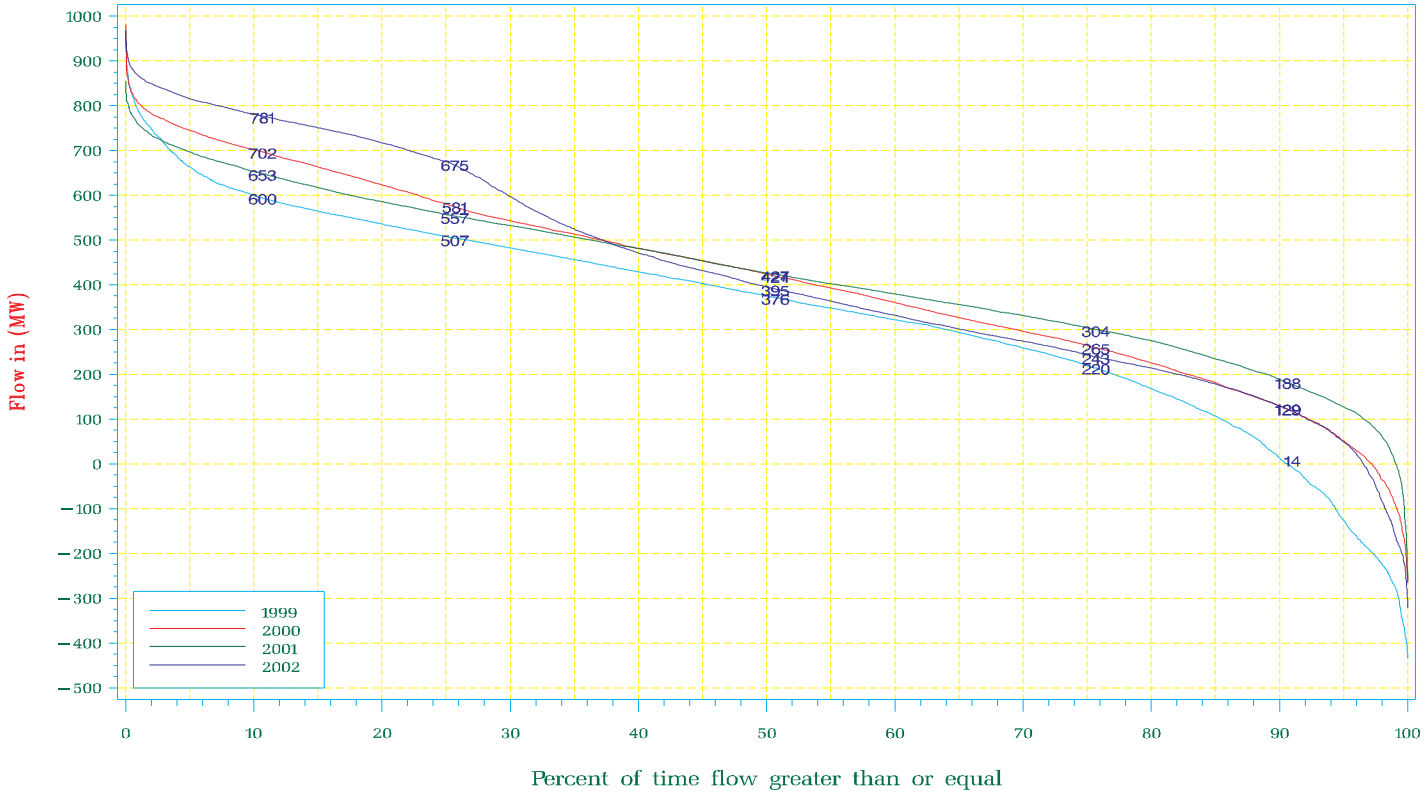
NYISO Frequency Interface Flow For January 1999 – December 2002

PJM West – Central



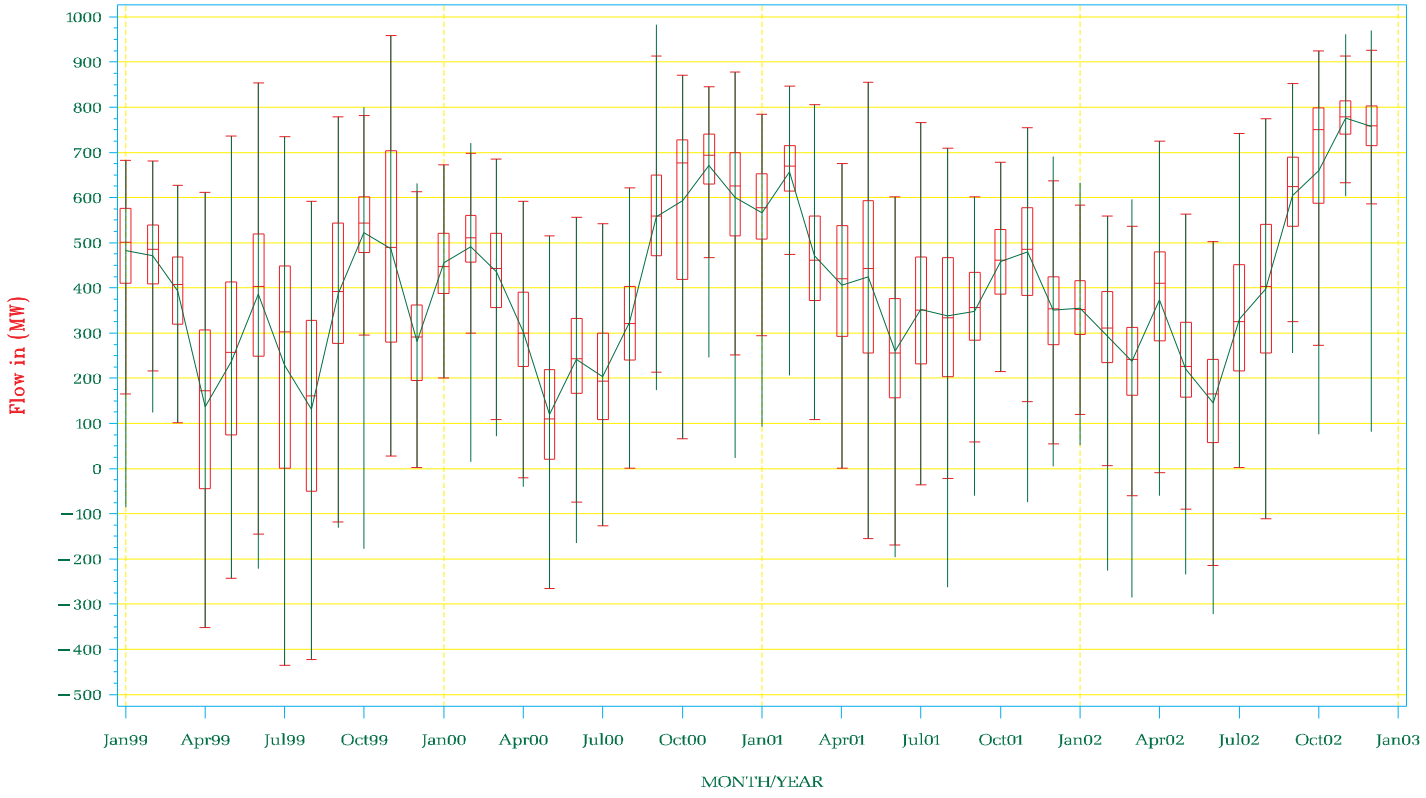
NYISO Percent of time Interface Flow For January 1999 – December 2002

PJM West – Central



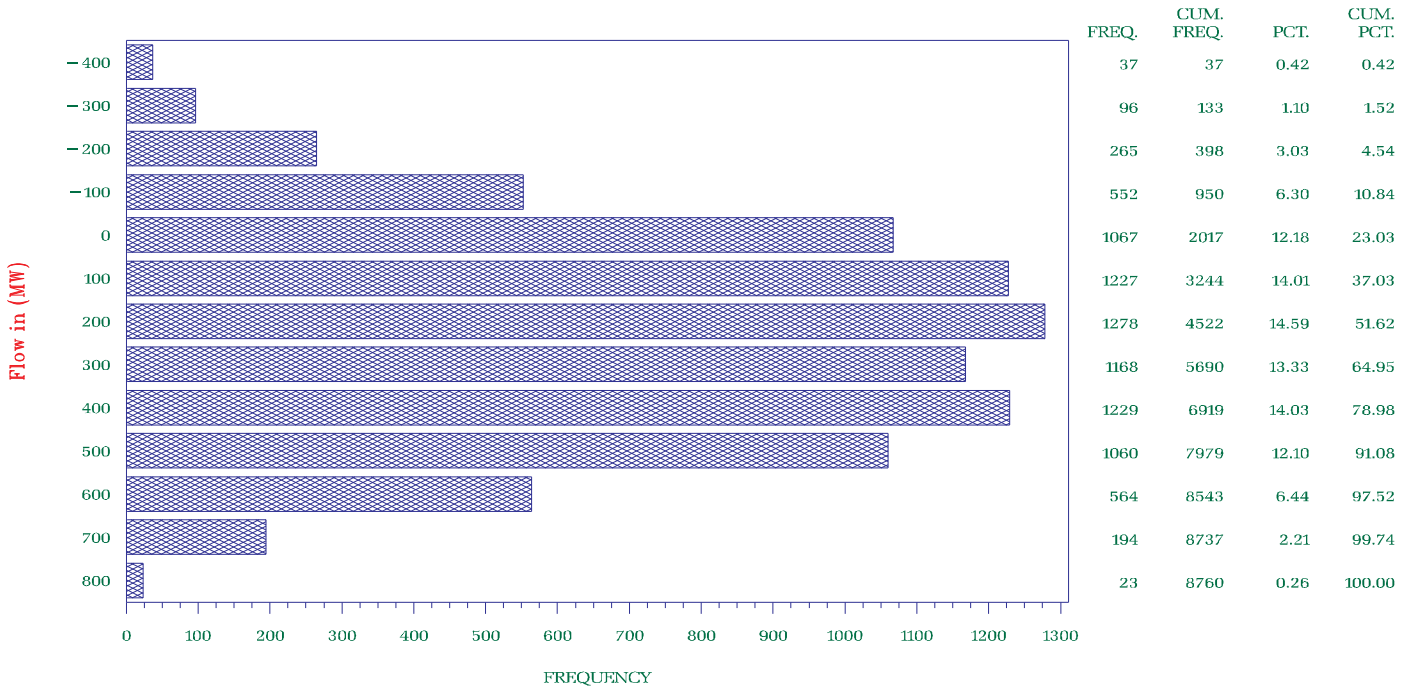
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

PJM West – Central



NYISO Frequency Interface Flow For January – December 2002

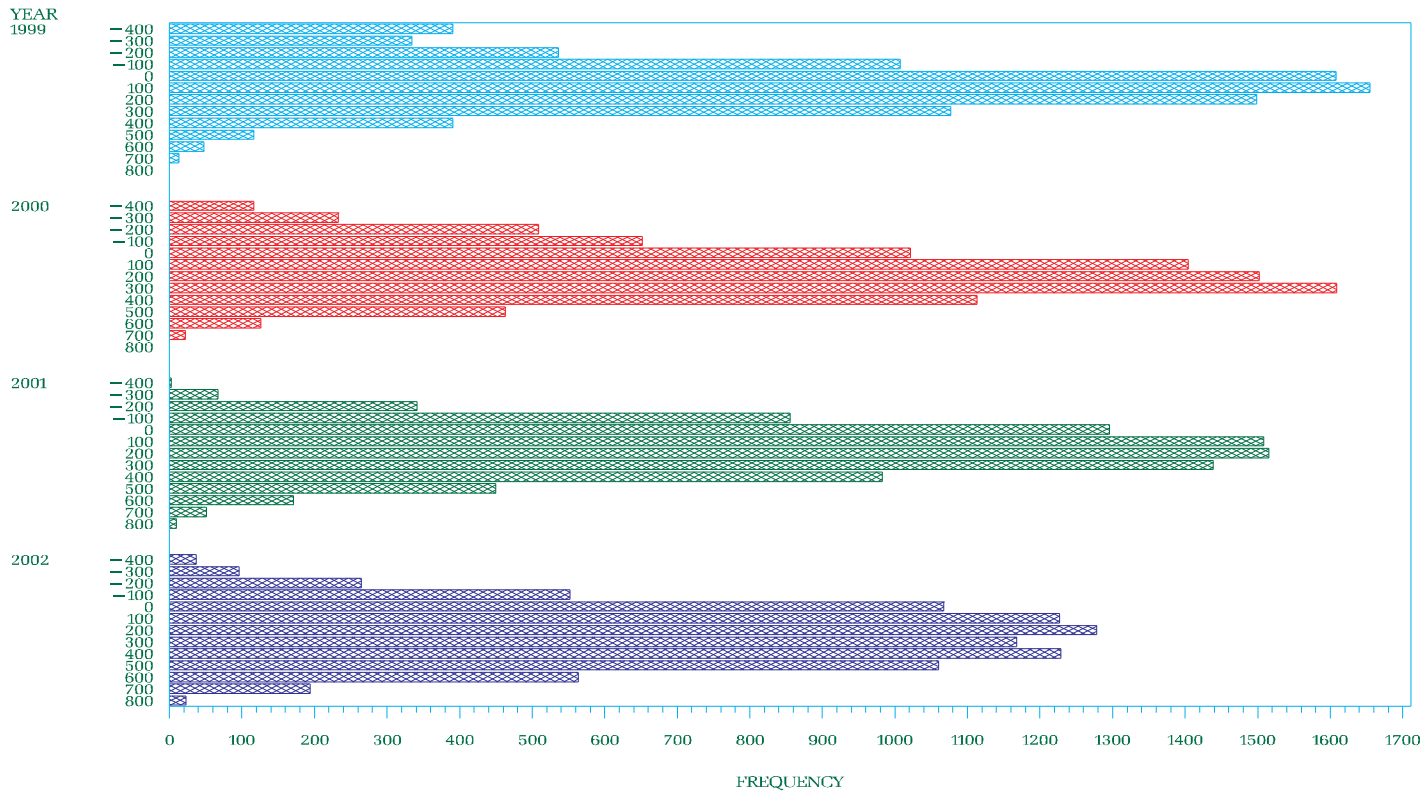
PJM West – Frontier



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-400	37	37	0.42	0.42
-300	96	133	1.10	1.52
-200	265	398	3.03	4.54
-100	552	950	6.30	10.84
0	1067	2017	12.18	23.03
100	1227	3244	14.01	37.03
200	1278	4522	14.59	51.62
300	1168	5690	13.33	64.95
400	1229	6919	14.03	78.98
500	1060	7979	12.10	91.08
600	564	8543	6.44	97.52
700	194	8737	2.21	99.74
800	23	8760	0.26	100.00

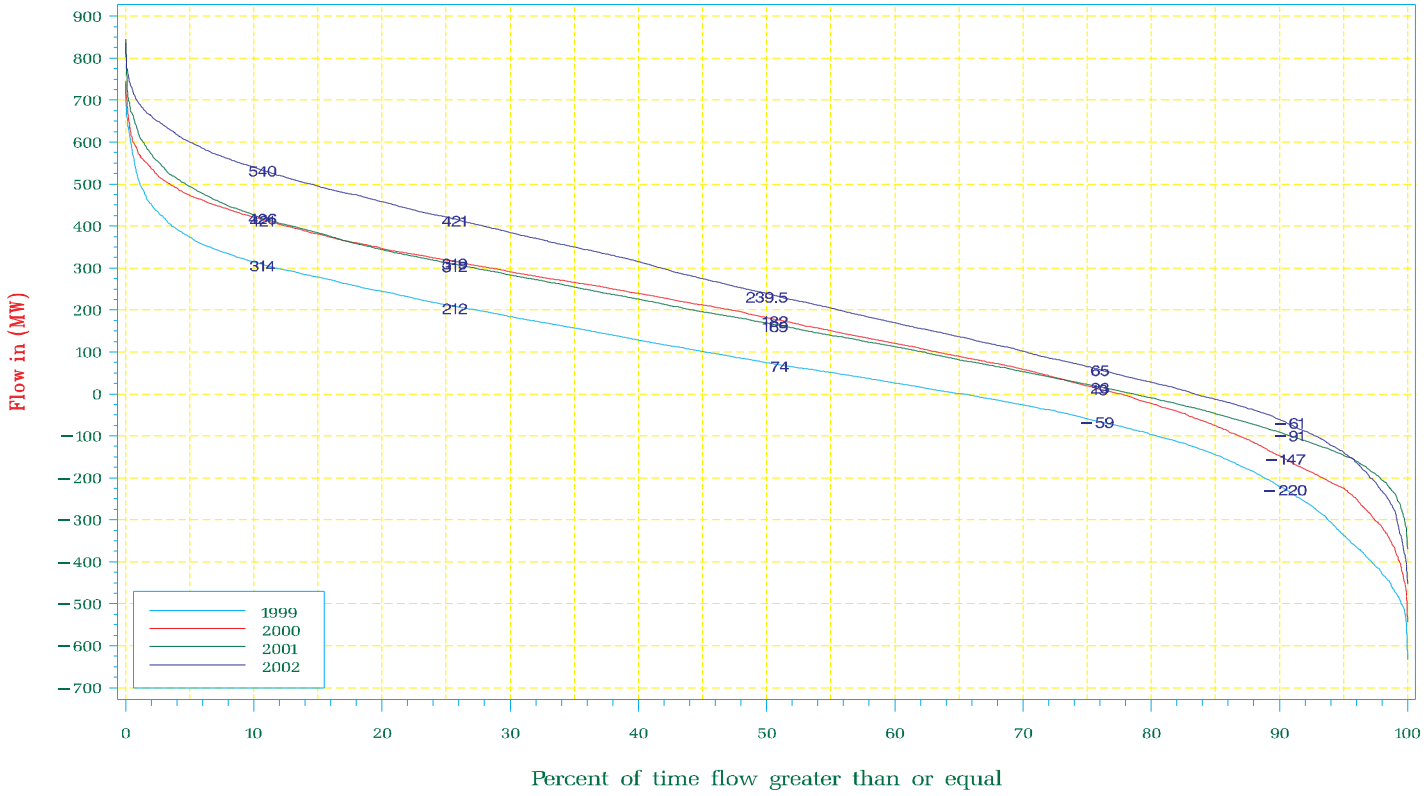
NYISO Frequency Interface Flow For January 1999 – December 2002

PJM West – Frontier



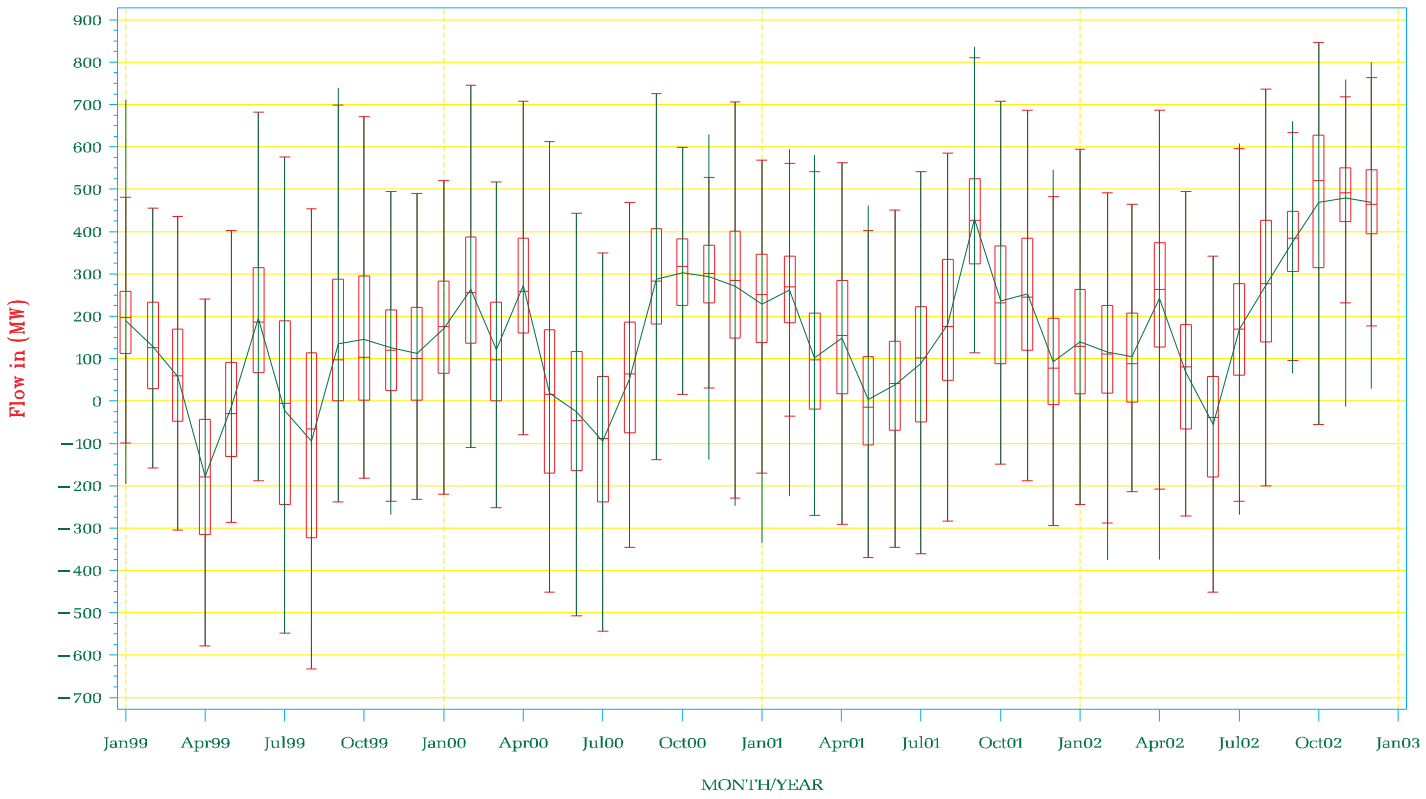
NYISO Percent of time Interface Flow For January 1999 – December 2002

PJM West – Frontier



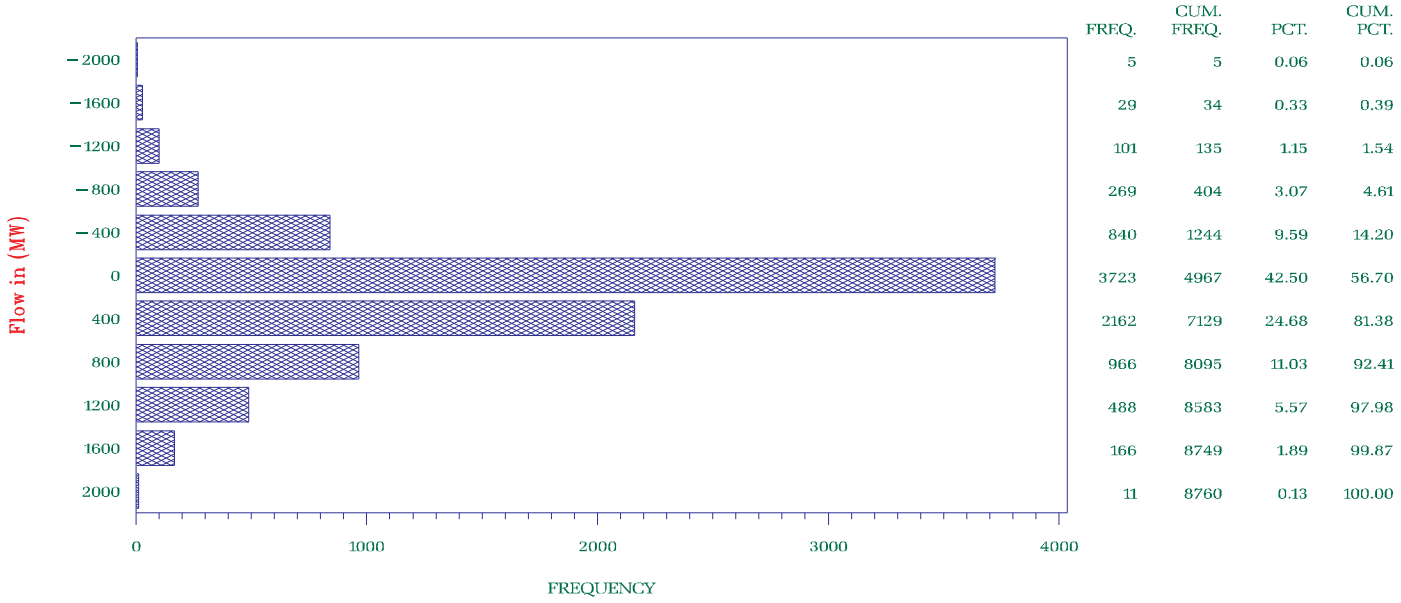
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

PJM West – Frontier



NYISO Frequency Interface Flow For January – December 2002

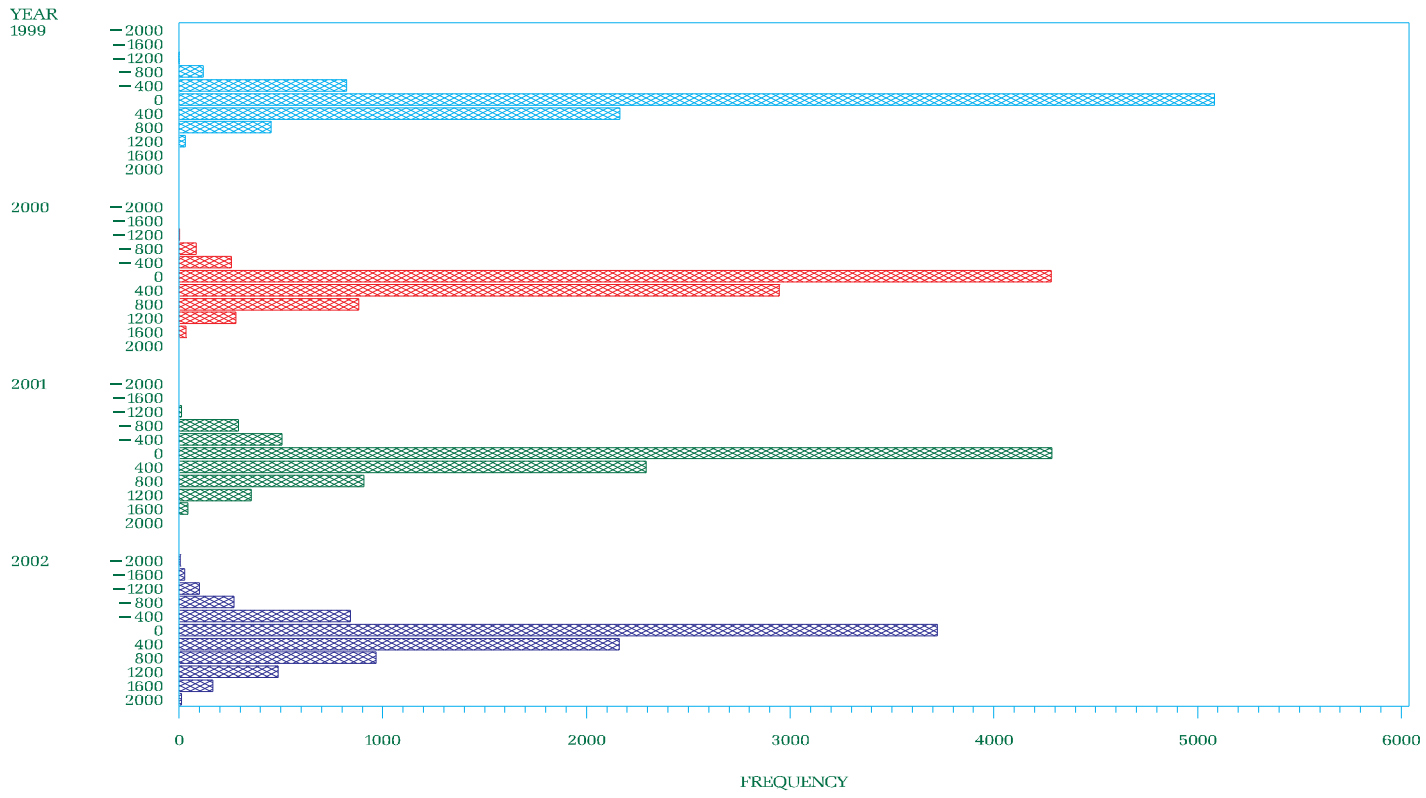
ONTARIO – NY SCHEDULE



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
−2000	5	5	0.06	0.06
−1600	29	34	0.33	0.39
−1200	101	135	1.15	1.54
−800	269	404	3.07	4.61
−400	840	1244	9.59	14.20
0	3723	4967	42.50	56.70
400	2162	7129	24.68	81.38
800	966	8095	11.03	92.41
1200	488	8583	5.57	97.98
1600	166	8749	1.89	99.87
2000	11	8760	0.13	100.00

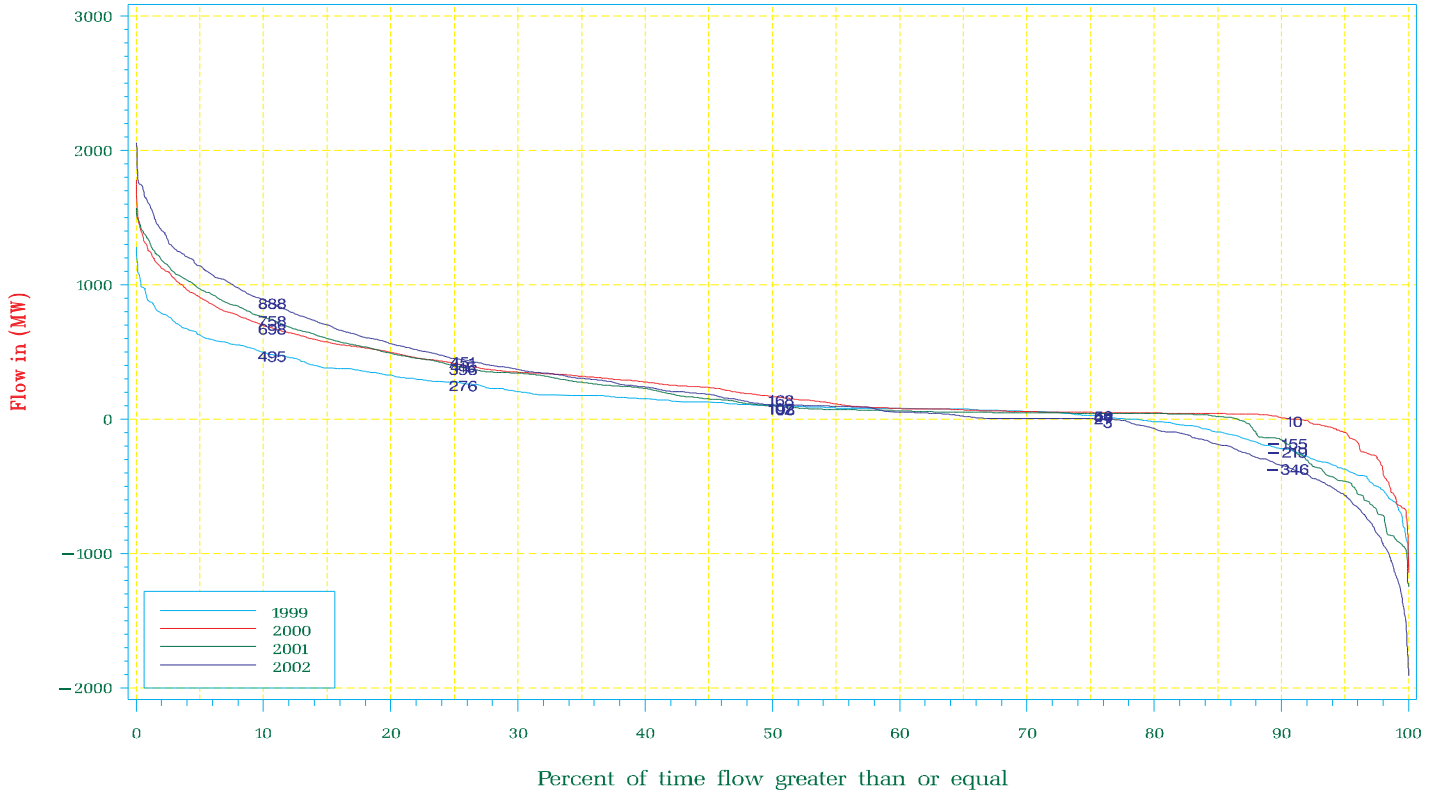
NYISO Frequency Interface Flow For January 1999 – December 2002

ONTARIO – NY SCHEDULE



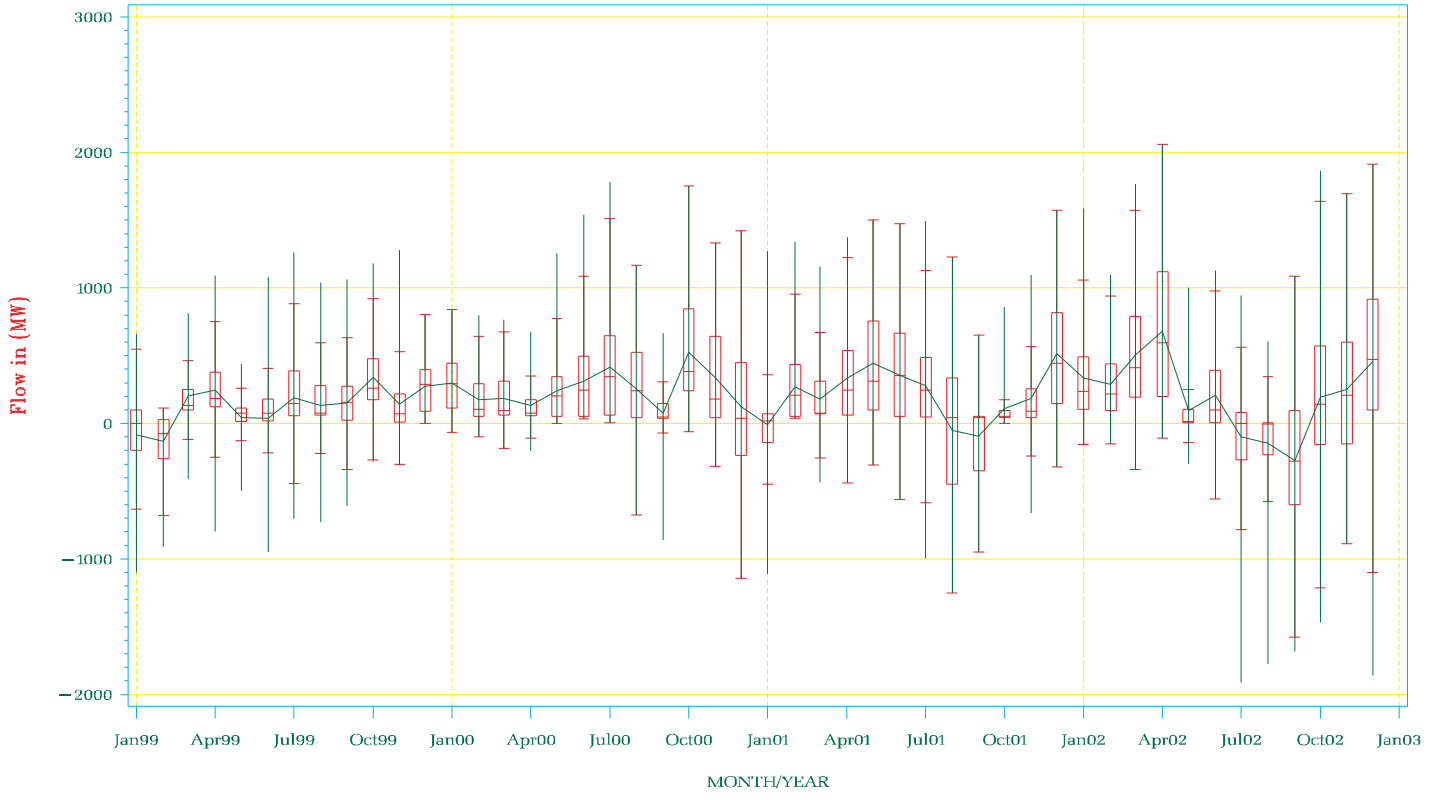
NYISO Percent of time Interface Flow For January 1999 – December 2002

ONTARIO – NY SCHEDULE



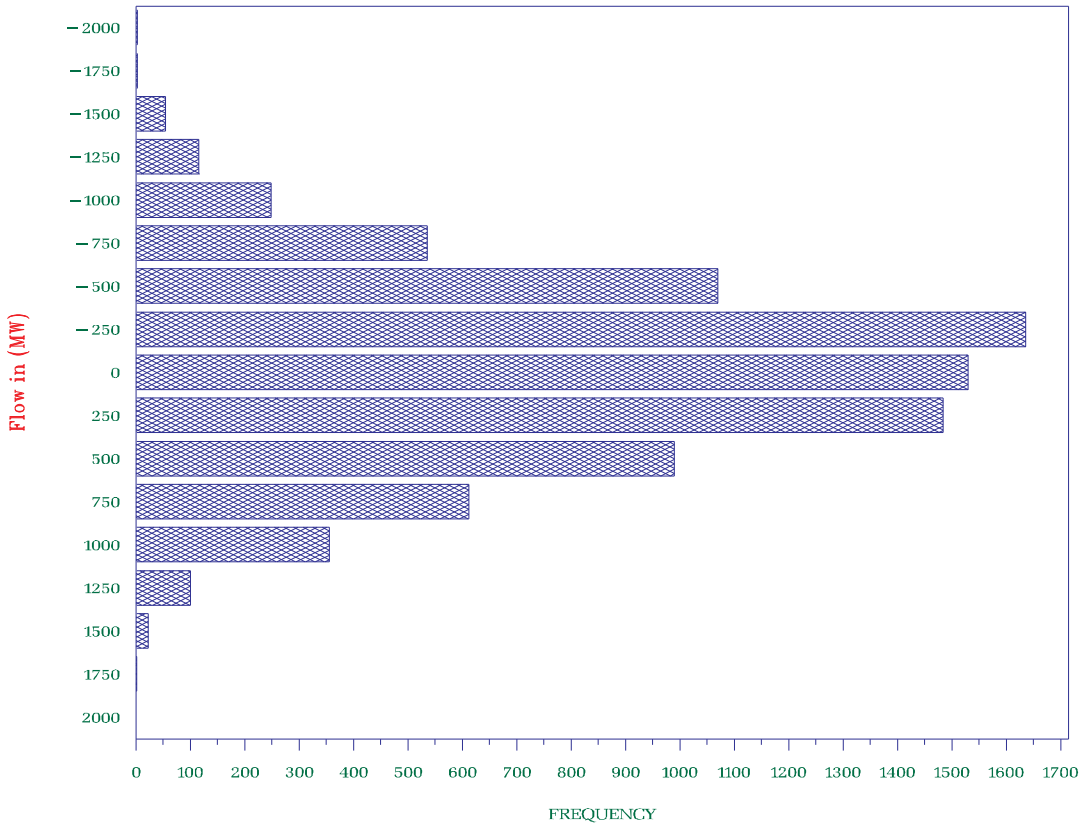
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

ONTARIO – NY SCHEDULE



NYISO Frequency Interface Flow For January – December 2002

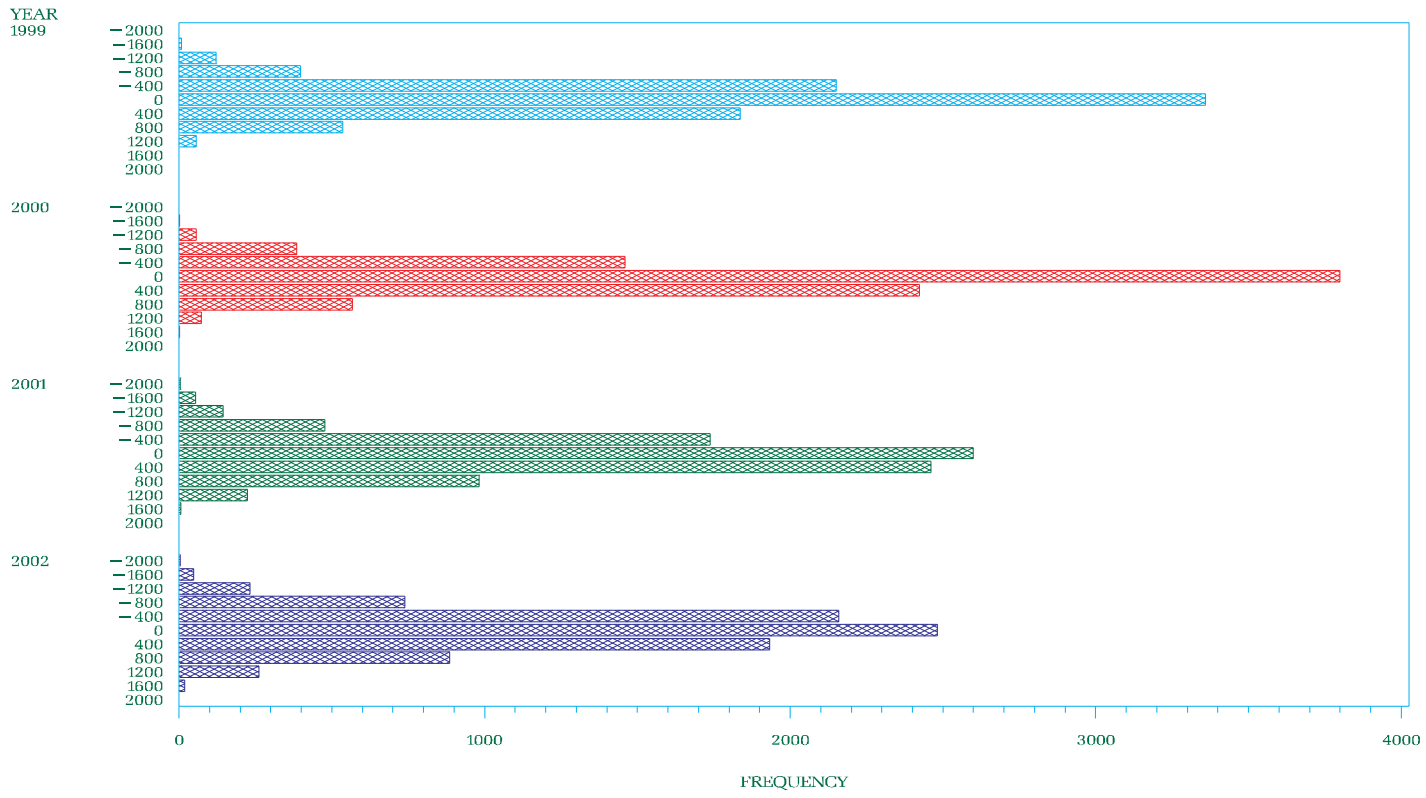
ONTARIO – NY



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-2000	2	2	0.02	0.02
-1750	3	5	0.03	0.06
-1500	54	59	0.62	0.67
-1250	116	175	1.32	2.00
-1000	248	423	2.83	4.83
-750	536	959	6.12	10.95
-500	1070	2029	12.21	23.16
-250	1636	3665	18.68	41.84
0	1530	5195	17.47	59.30
250	1484	6679	16.94	76.24
500	990	7669	11.30	87.55
750	612	8281	6.99	94.53
1000	355	8636	4.05	98.58
1250	100	8736	1.14	99.73
1500	23	8759	0.26	99.99
1750	1	8760	0.01	100.00
2000	0	8760	0.00	100.00

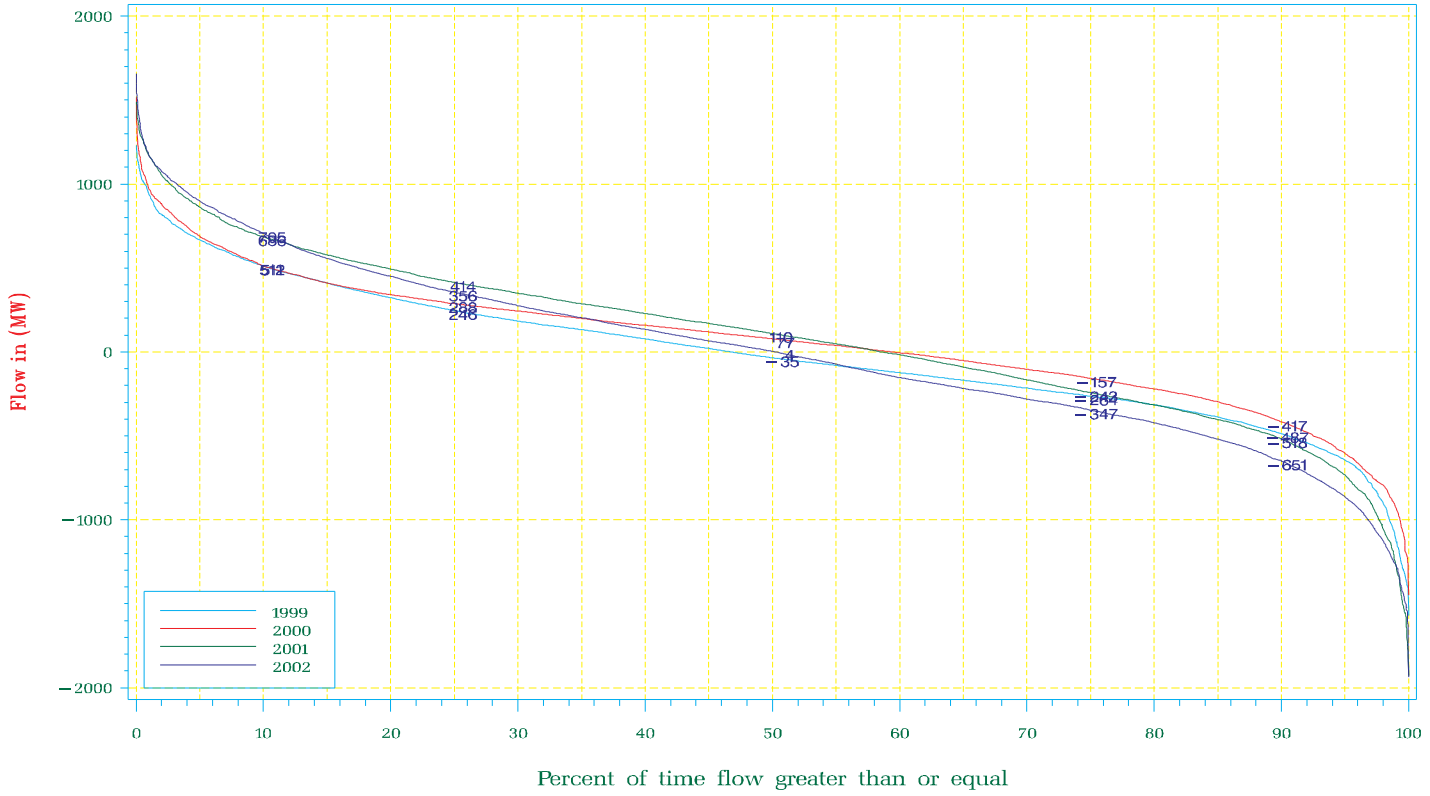
NYISO Frequency Interface Flow For January 1999 – December 2002

ONTARIO – NY



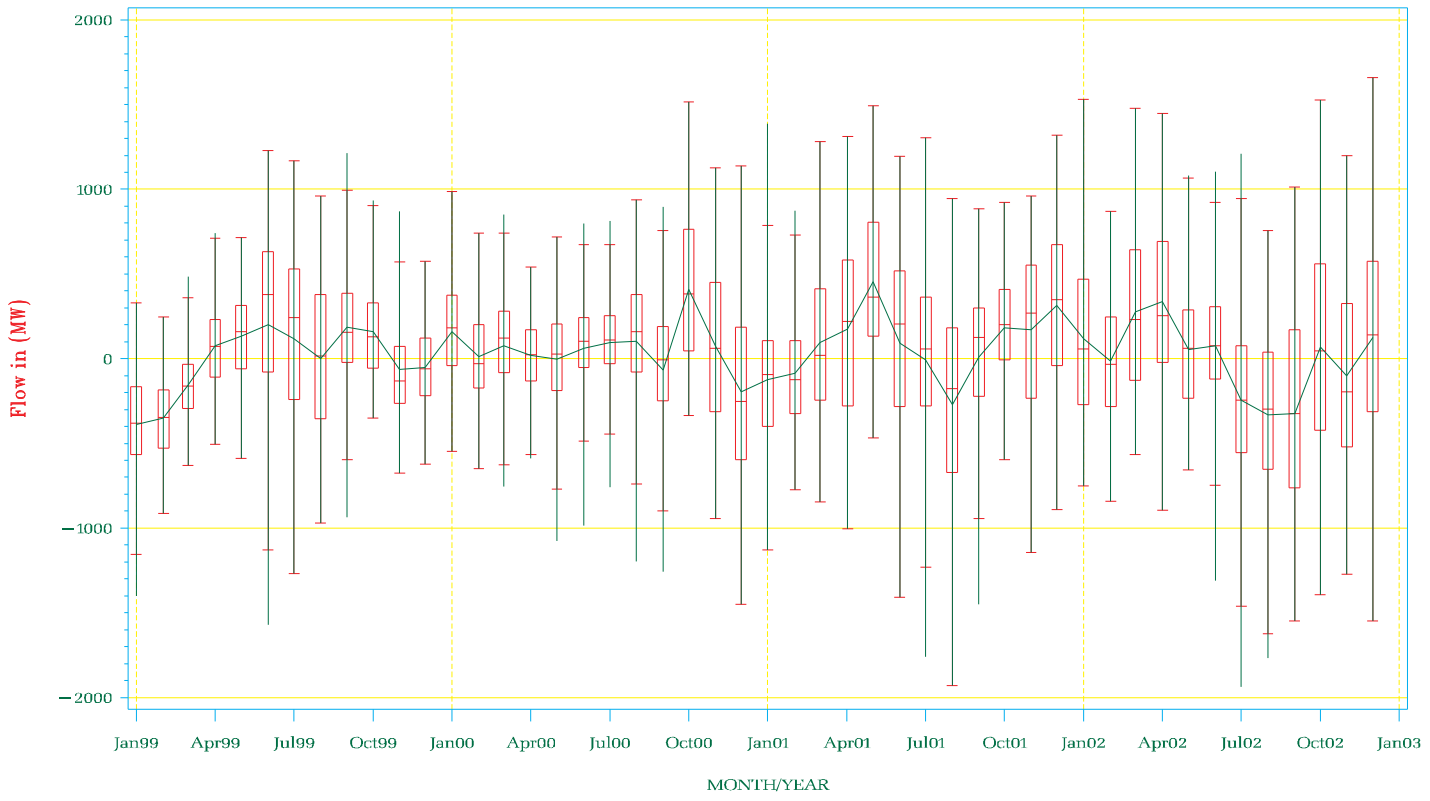
NYISO Percent of time Interface Flow For January 1999 – December 2002

ONTARIO – NY



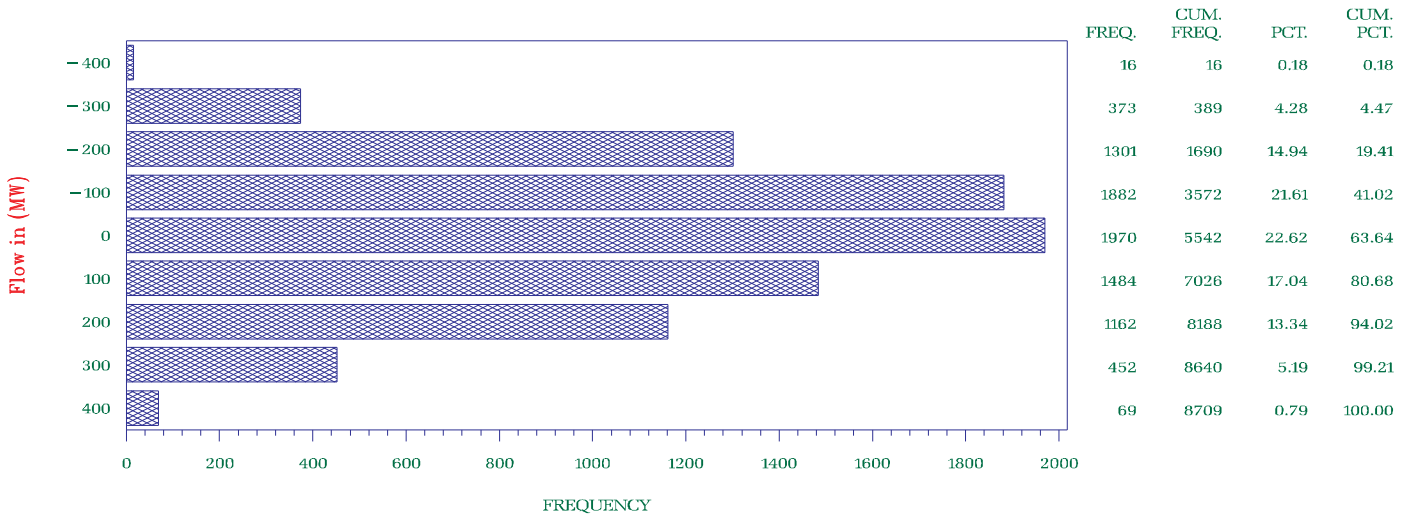
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

ONTARIO – NY



NYISO Frequency Interface Flow For January – December 2002

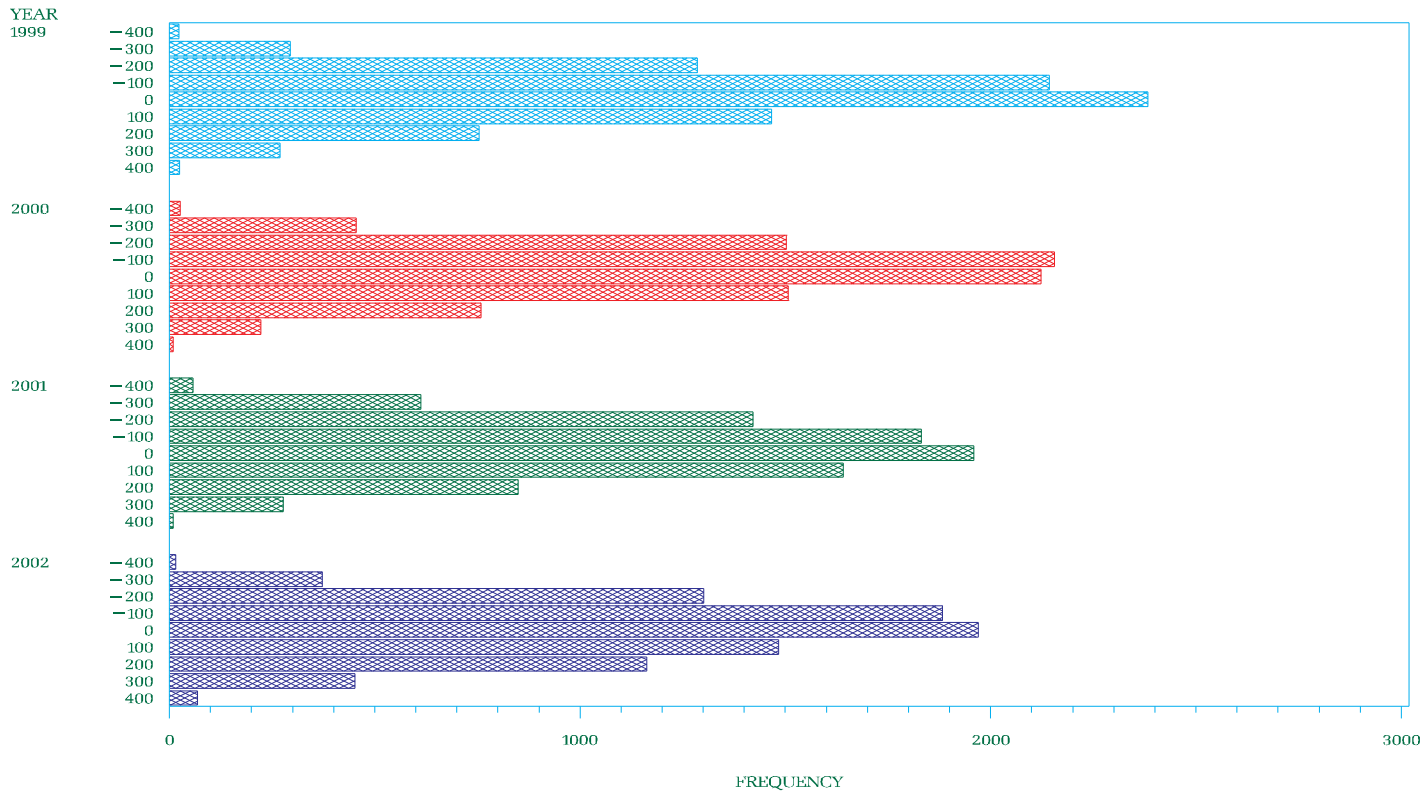
Ontario East – Adirondack



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-400	16	16	0.18	0.18
-300	373	389	4.28	4.47
-200	1301	1690	14.94	19.41
-100	1882	3572	21.61	41.02
0	1970	5542	22.62	63.64
100	1484	7026	17.04	80.68
200	1162	8188	13.34	94.02
300	452	8640	5.19	99.21
400	69	8709	0.79	100.00

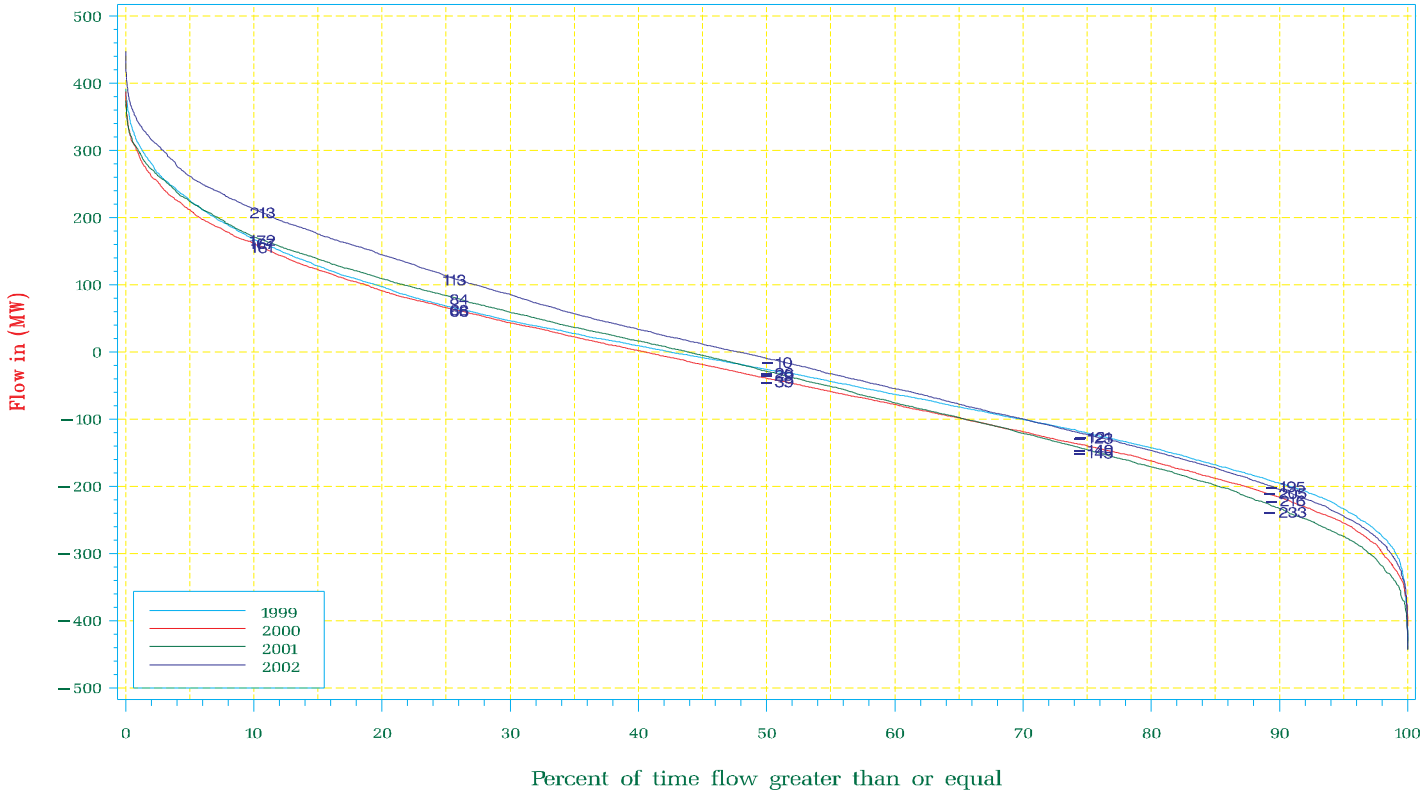
NYISO Frequency Interface Flow For January 1999 – December 2002

Ontario East – Adirondack



NYISO Percent of time Interface Flow For January 1999 – December 2002

Ontario East – Adirondack

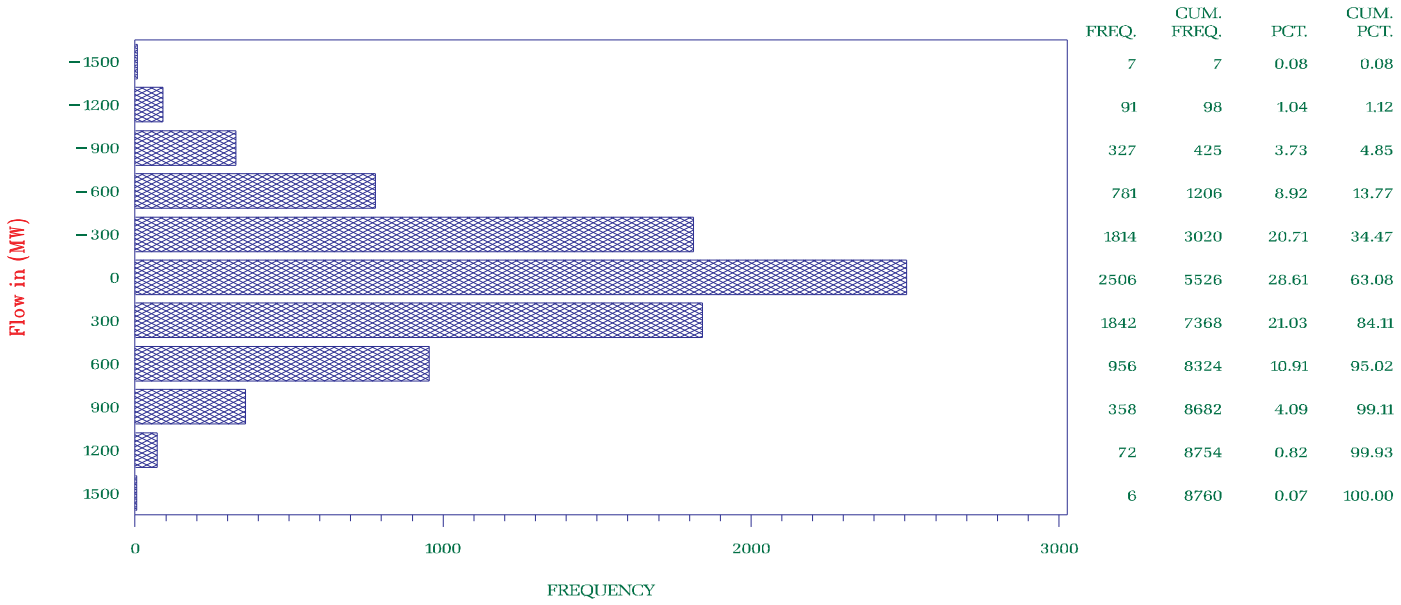


NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Ontario East – Adirondack

NYISO Frequency Interface Flow For January – December 2002

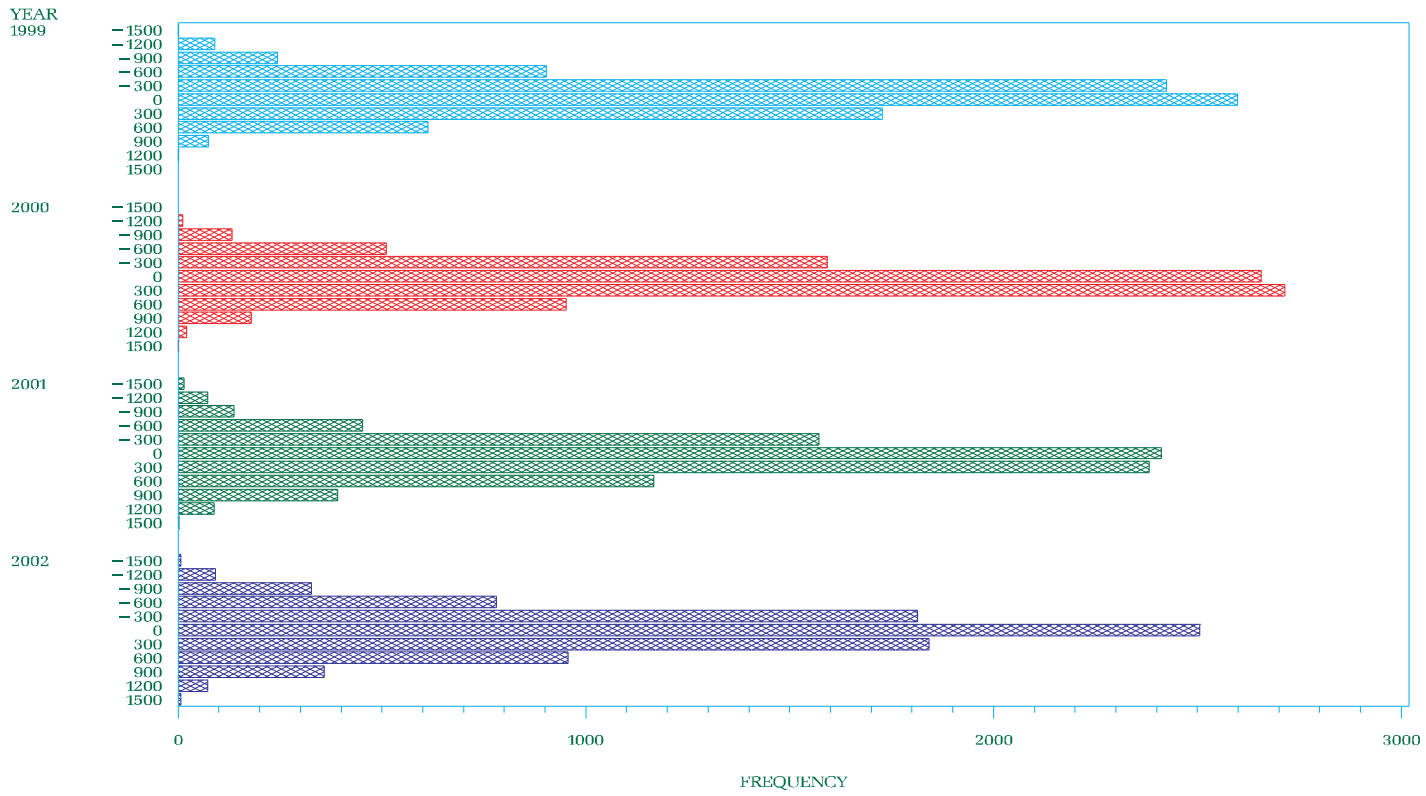
Ontario South – Frontier



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-1500	7	7	0.08	0.08
-1200	91	98	1.04	1.12
-900	327	425	3.73	4.85
-600	781	1206	8.92	13.77
-300	1814	3020	20.71	34.47
0	2506	5526	28.61	63.08
300	1842	7368	21.03	84.11
600	956	8324	10.91	95.02
900	358	8682	4.09	99.11
1200	72	8754	0.82	99.93
1500	6	8760	0.07	100.00

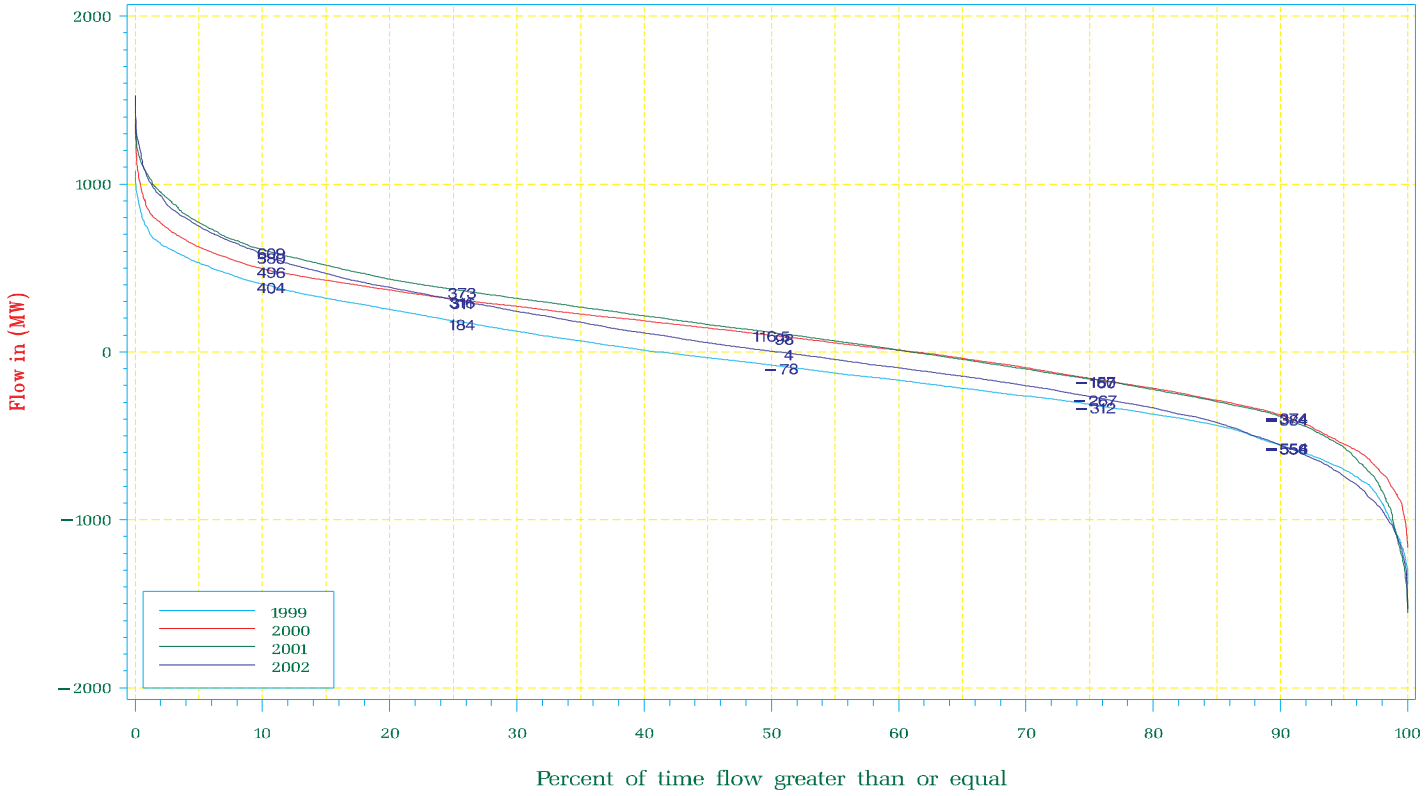
NYISO Frequency Interface Flow For January 1999 – December 2002

Ontario South – Frontier



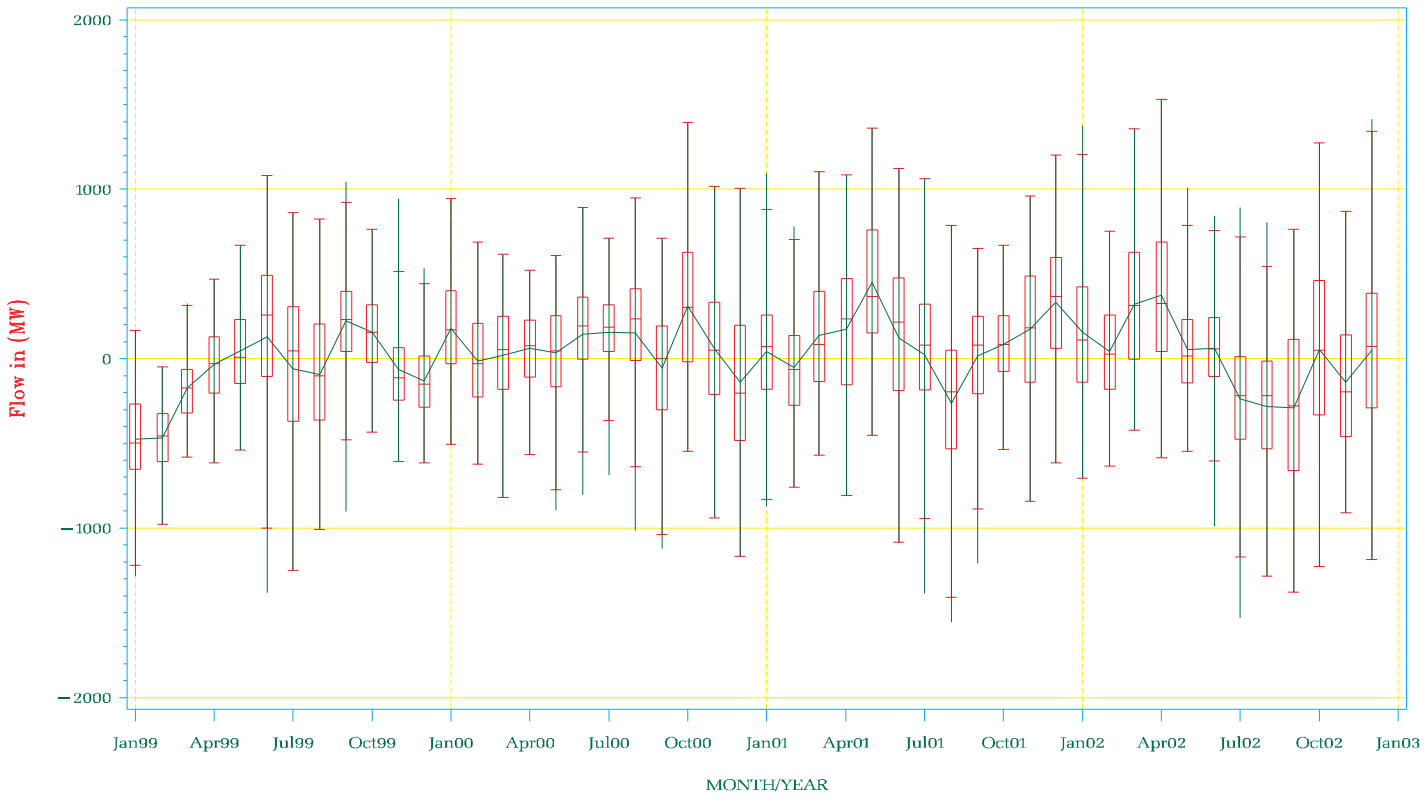
NYISO Percent of time Interface Flow For January 1999 – December 2002

Ontario South – Frontier



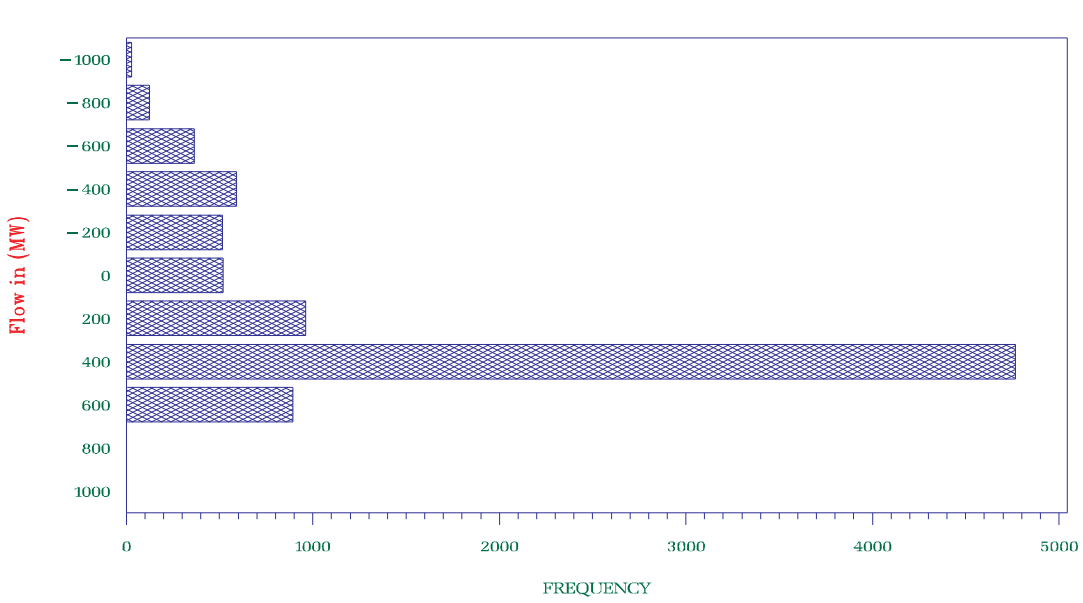
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Ontario South – Frontier



NYISO Frequency Interface Flow For January – December 2002

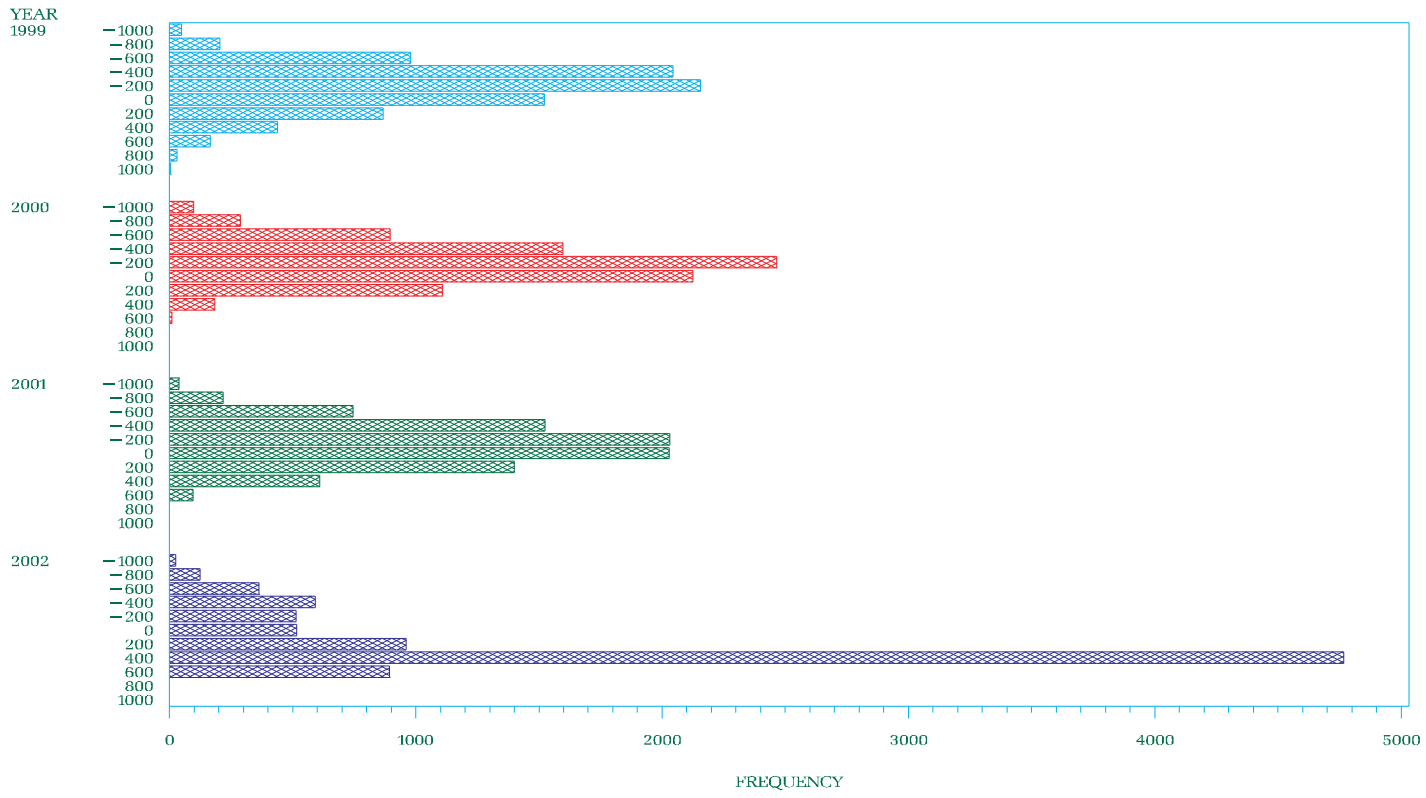
NY – ONTARIO COUNTER CLOCKWISE CIRCULATION



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-1000	27	27	0.31	0.31
-800	124	151	1.42	1.72
-600	363	514	4.14	5.87
-400	592	1106	6.76	12.63
-200	514	1620	5.87	18.49
0	518	2138	5.91	24.41
200	962	3100	10.98	35.39
400	4766	7866	54.41	89.79
600	894	8760	10.21	100.00
800	0	8760	0.00	100.00
1000	0	8760	0.00	100.00

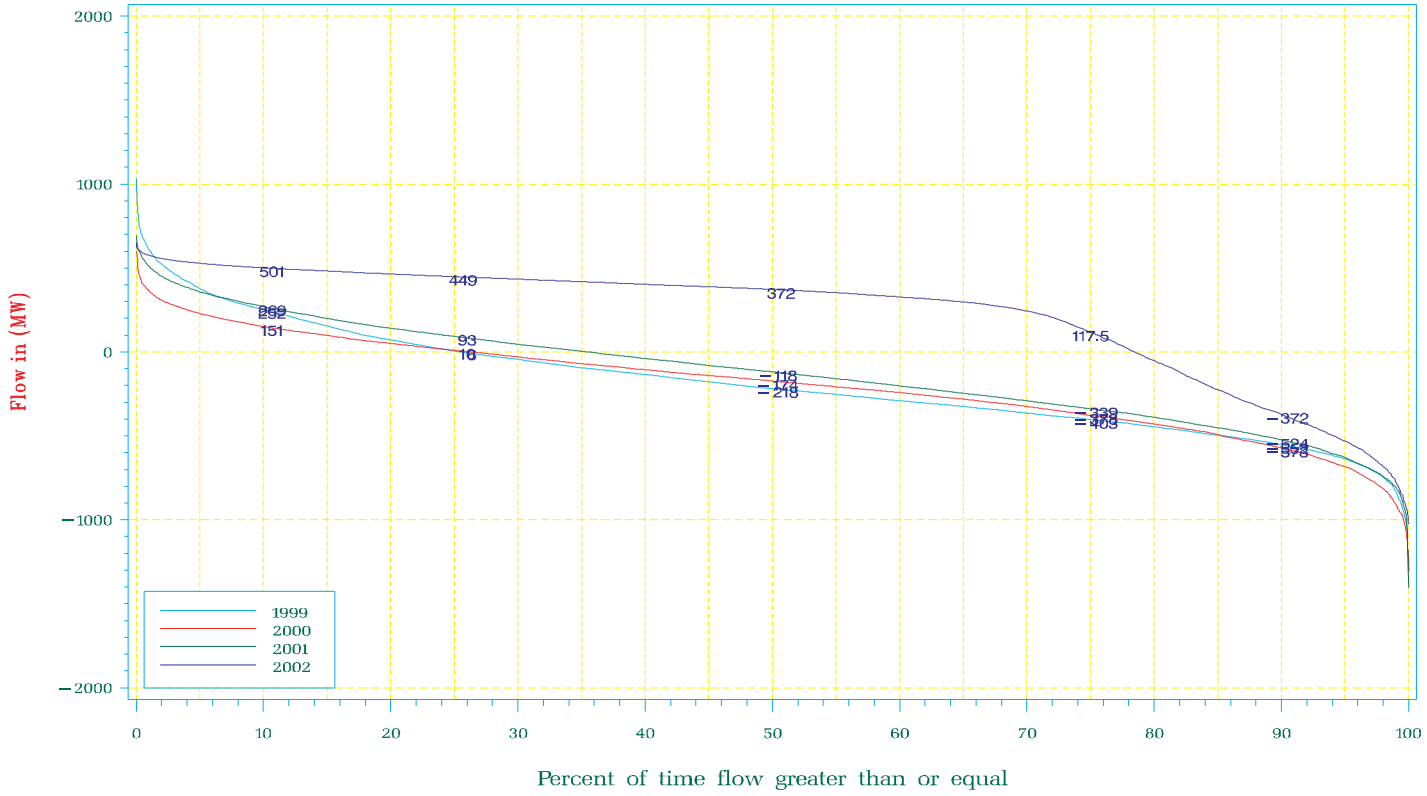
NYISO Frequency Interface Flow For January 1999 – December 2002

NY – ONTARIO COUNTER CLOCKWISE CIRCULATION



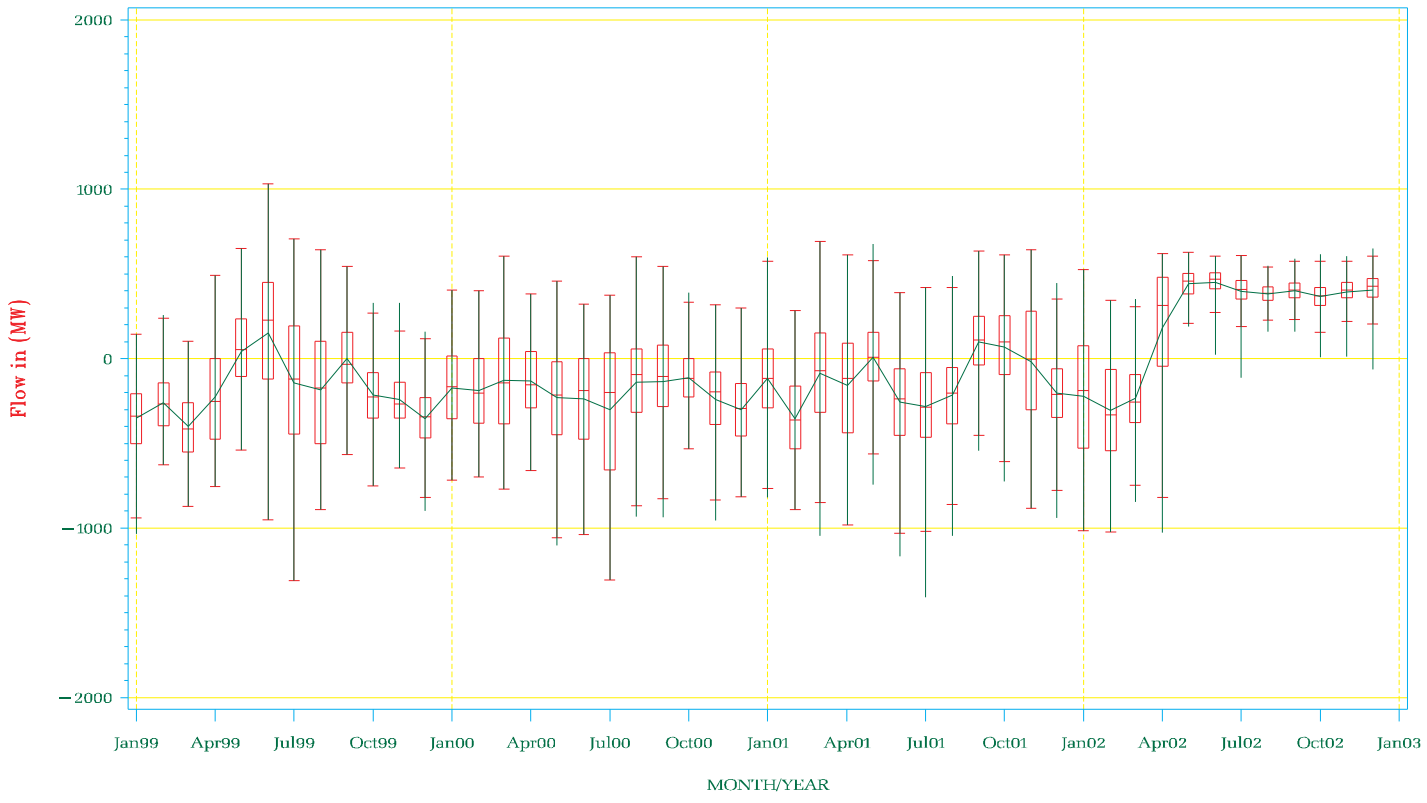
NYISO Percent of time Interface Flow For January 1999 – December 2002

NY – ONTARIO COUNTER CLOCKWISE CIRCULATION



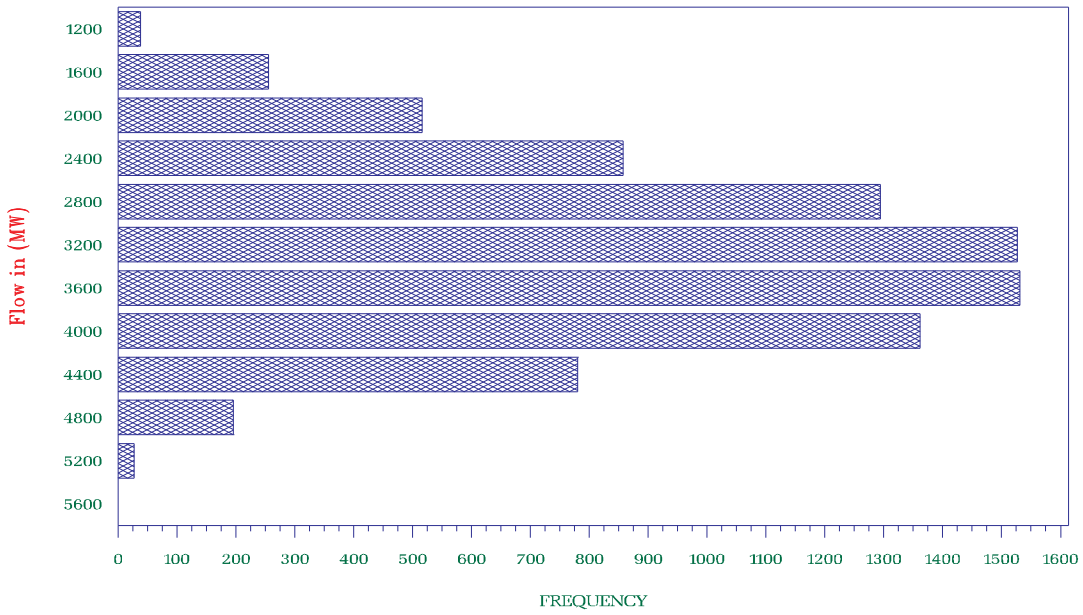
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

NY – ONTARIO COUNTER CLOCKWISE CIRCULATION



NYISO Frequency Interface Flow For January – December 2002

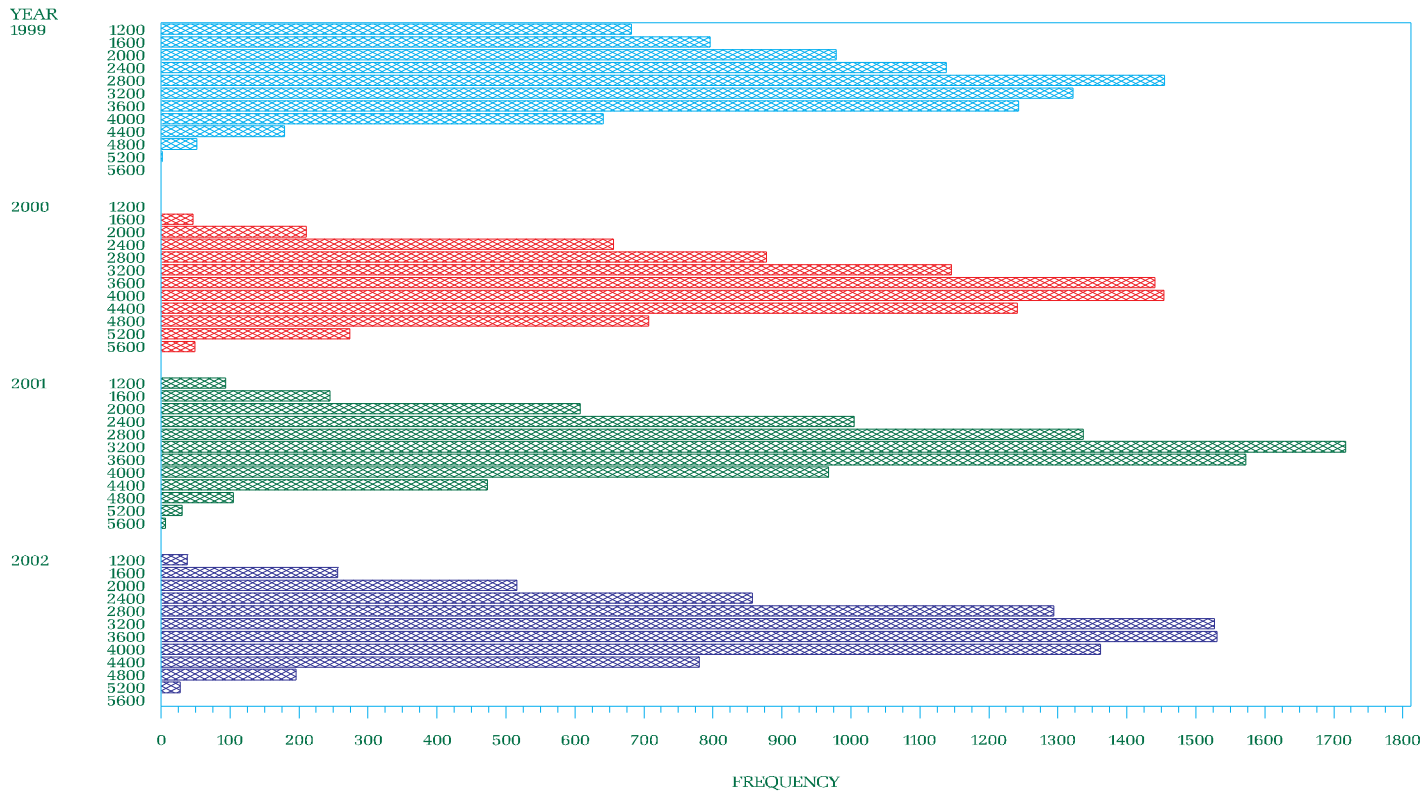
UPNY – SENY (OPEN)



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1200	38	38	0.45	0.45
1600	256	294	3.05	3.51
2000	516	810	6.15	9.66
2400	857	1667	10.22	19.88
2800	1294	2961	15.43	35.31
3200	1527	4488	18.21	53.52
3600	1531	6019	18.26	71.78
4000	1362	7381	16.24	88.03
4400	780	8161	9.30	97.33
4800	196	8357	2.34	99.67
5200	28	8385	0.33	100.00
5600	0	8385	0.00	100.00

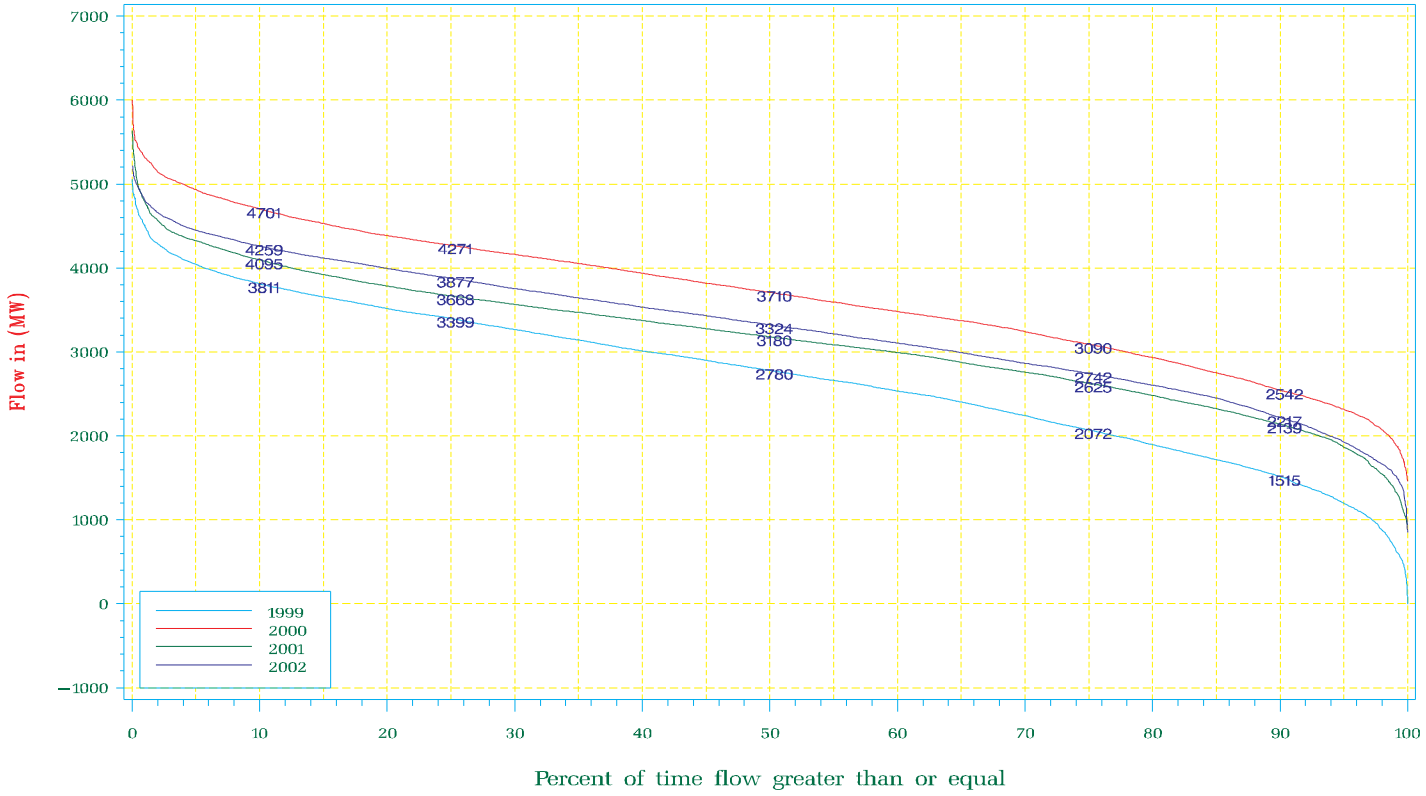
NYISO Frequency Interface Flow For January 1999 – December 2002

UPNY – SENY (OPEN)



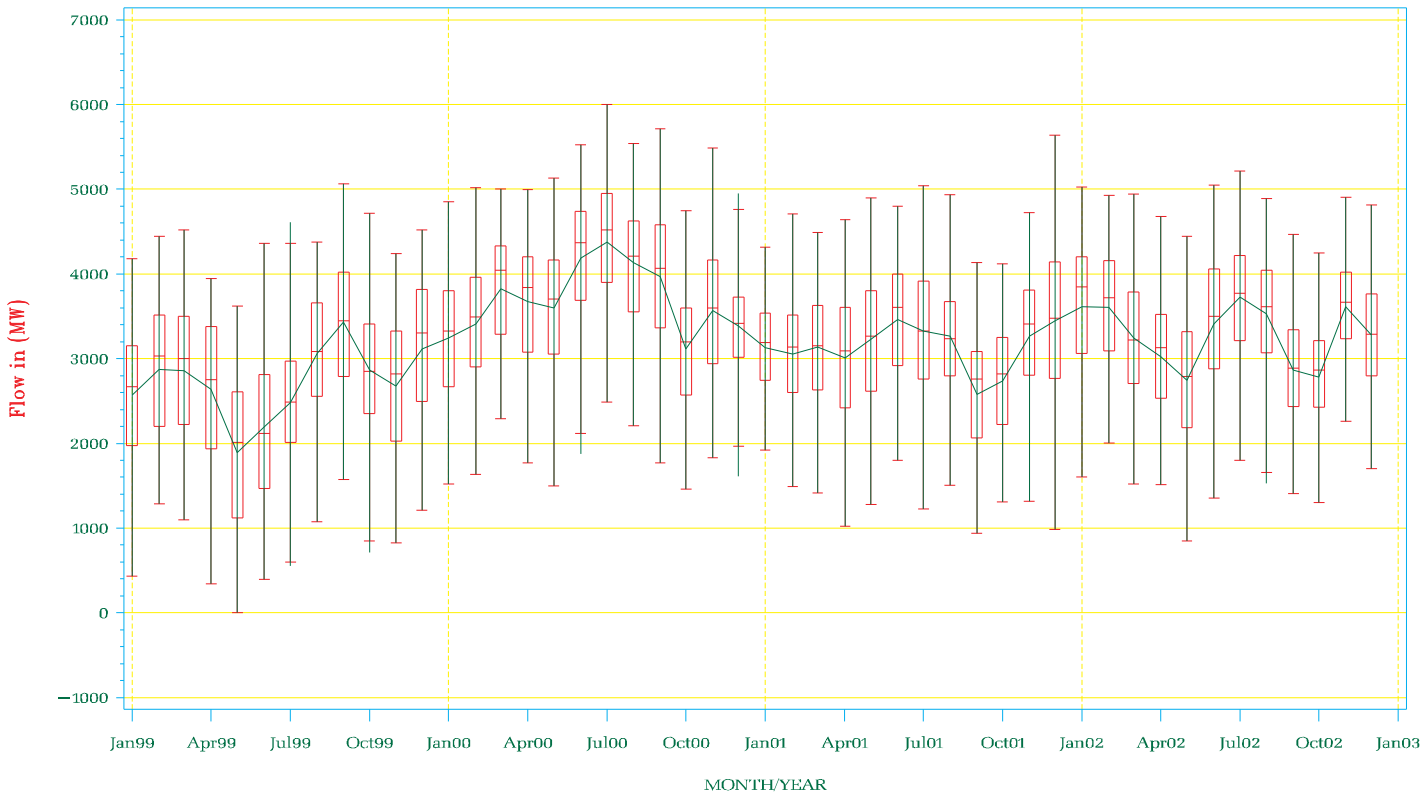
NYISO Percent of time Interface Flow For January 1999 – December 2002

UPNY – SENY (OPEN)



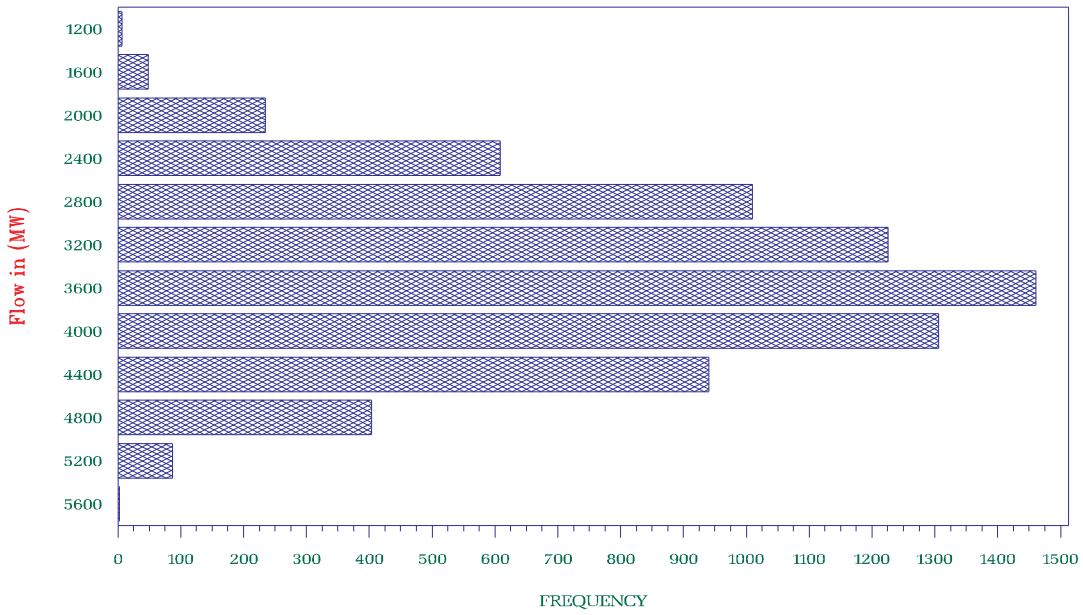
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

UPNY – SENY (OPEN)



NYISO Frequency Interface Flow For January – December 2002

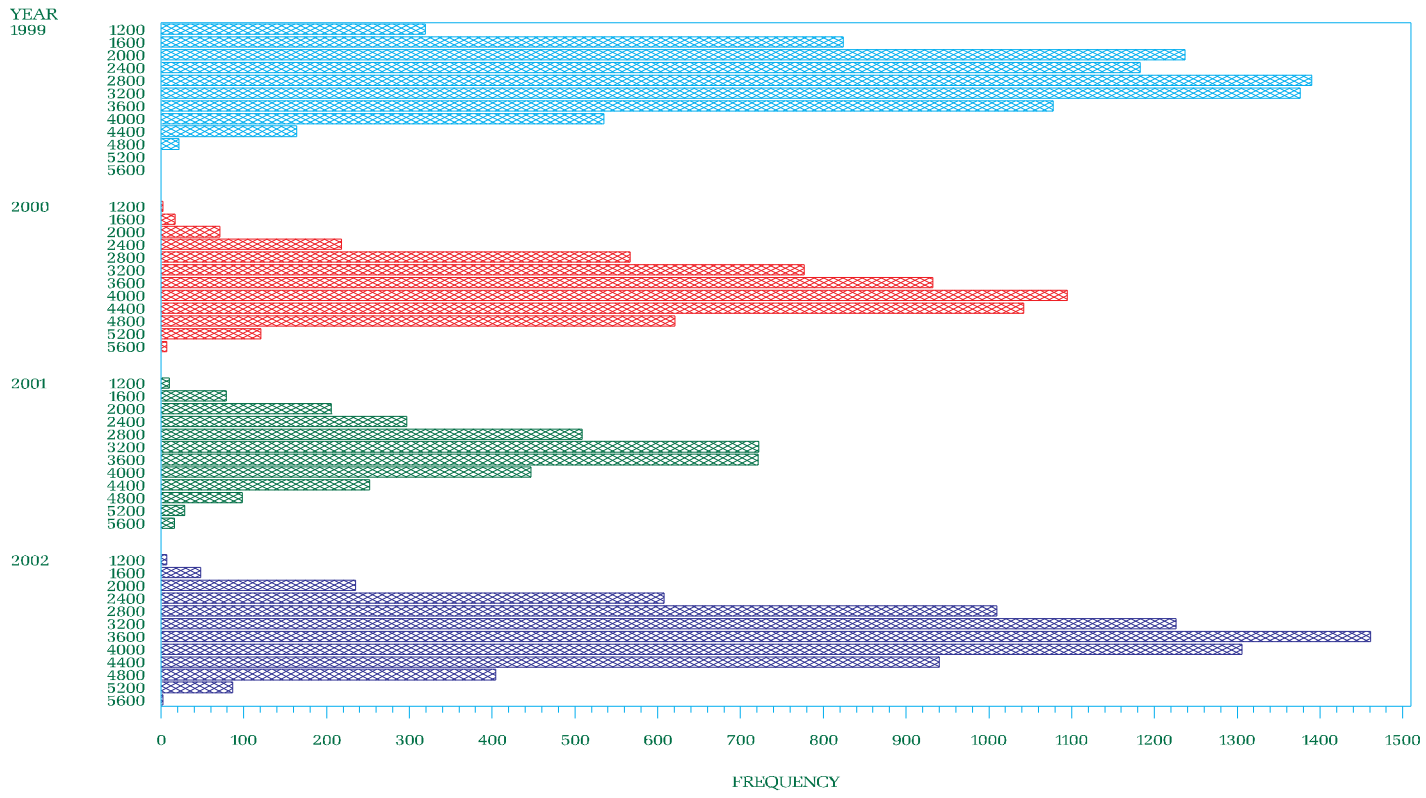
UPNY – SENY (CLOSED)



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1200	7	7	0.10	0.10
1600	48	55	0.65	0.75
2000	235	290	3.20	3.95
2400	608	898	8.29	12.24
2800	1010	1908	13.77	26.02
3200	1226	3134	16.72	42.73
3600	1461	4595	19.92	62.65
4000	1306	5901	17.81	80.46
4400	940	6841	12.82	93.28
4800	404	7245	5.51	98.79
5200	87	7332	1.19	99.97
5600	2	7334	0.03	100.00

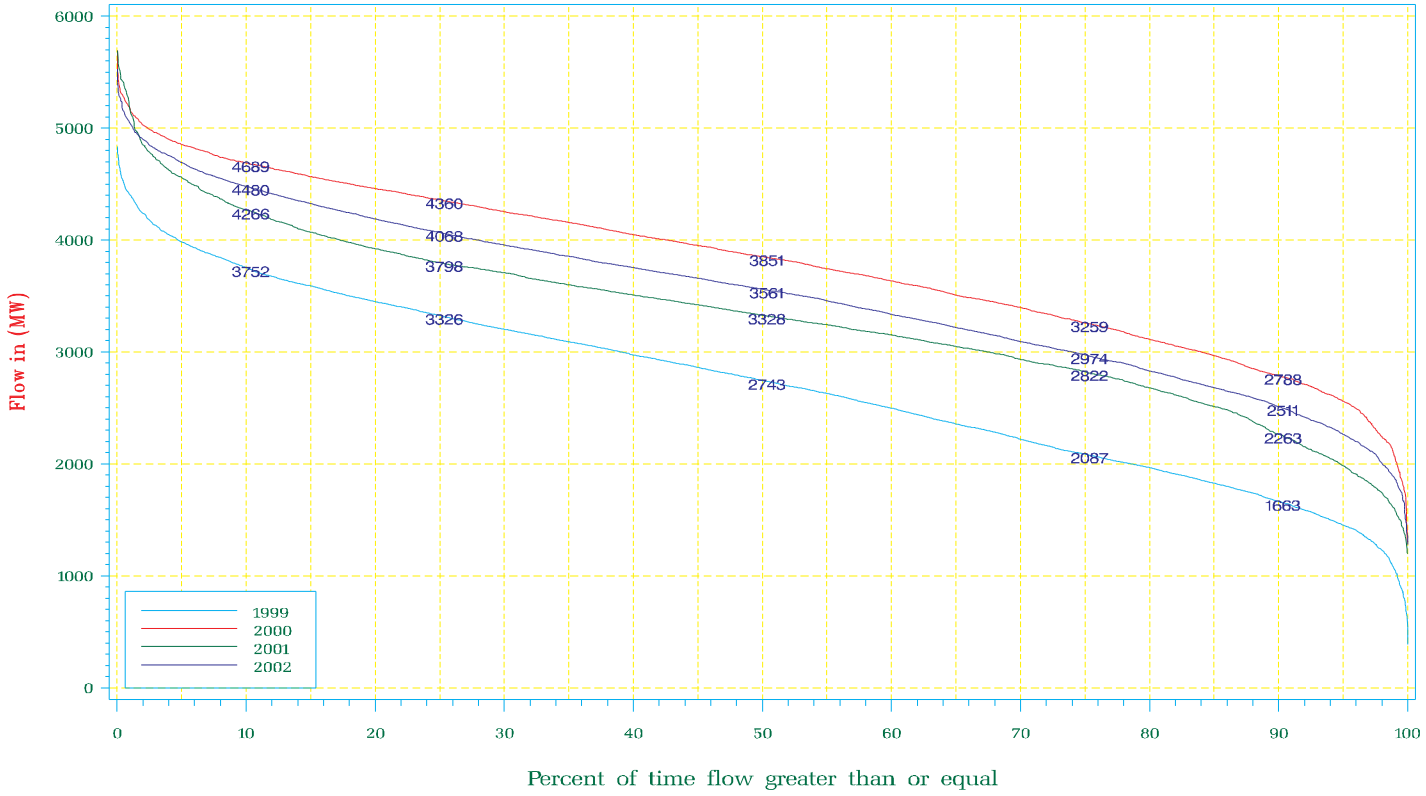
NYISO Frequency Interface Flow For January 1999 – December 2002

UPNY – SENY (CLOSED)



NYISO Percent of time Interface Flow For January 1999 – December 2002

UPNY – SENY (CLOSED)

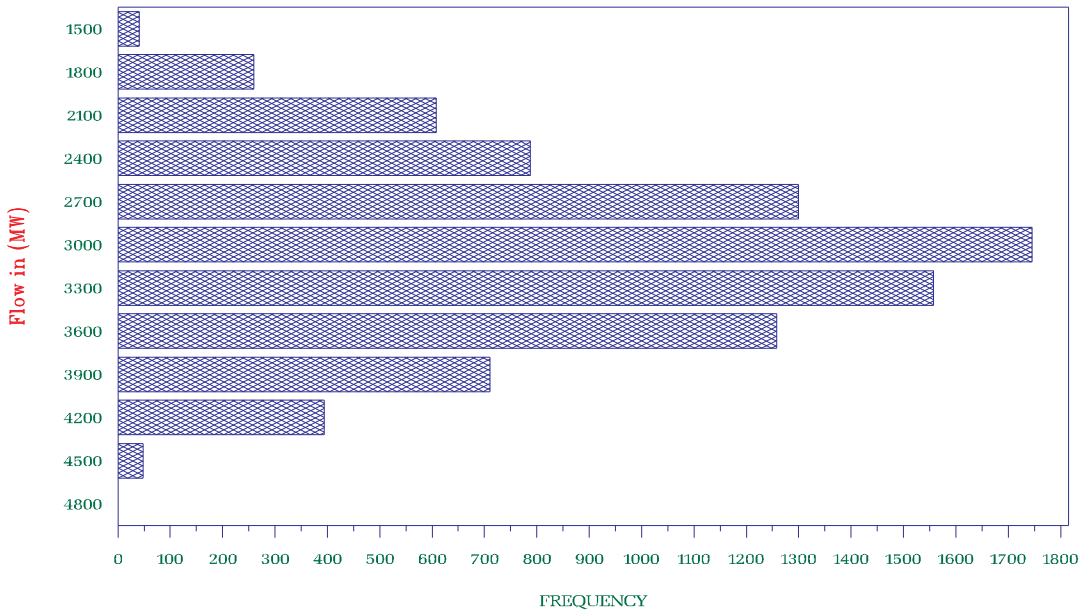


NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

UPNY – SENY (CLOSED)

NYISO Frequency Interface Flow For January – December 2002

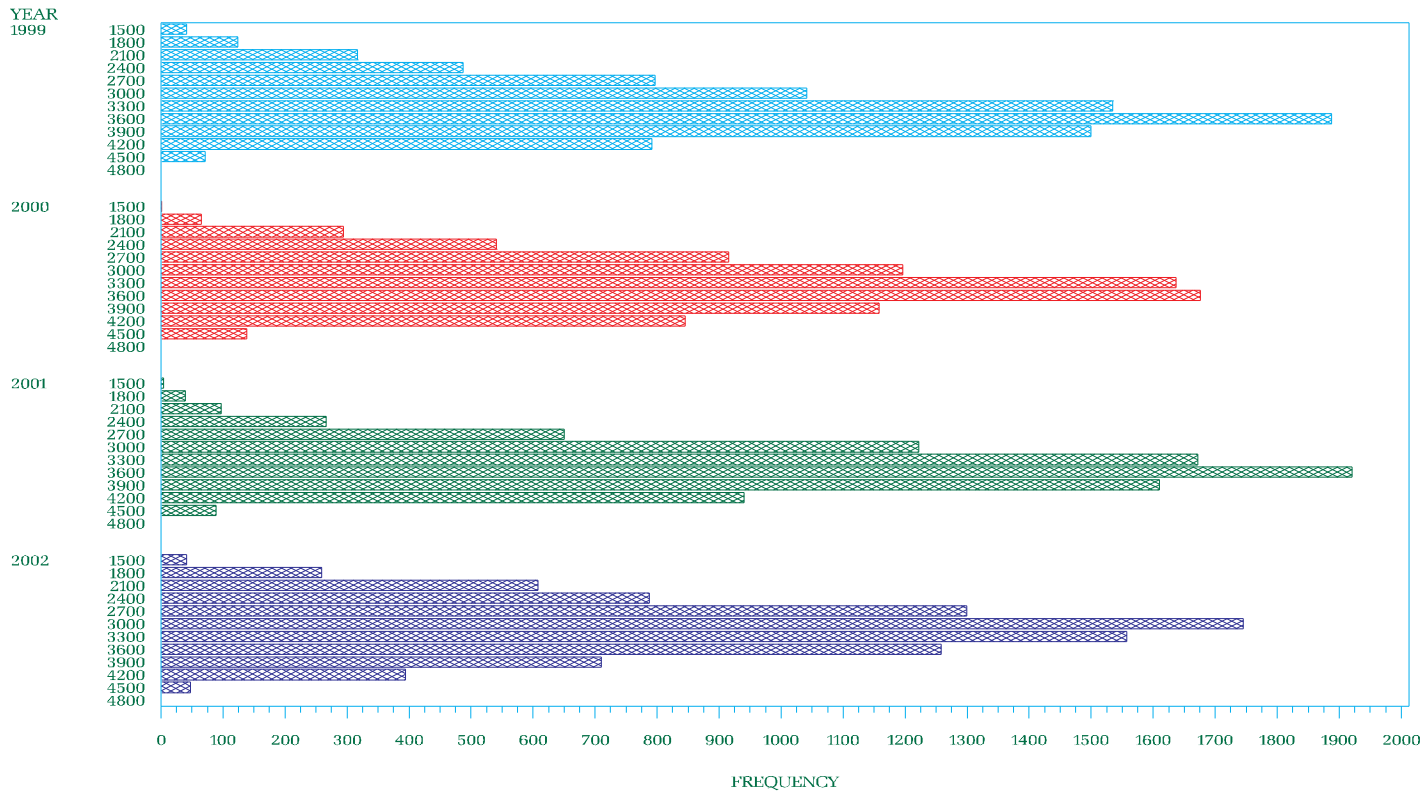
Volney – East (OPEN)



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1500	41	41	0.47	0.47
1800	259	300	2.97	3.45
2100	608	908	6.98	10.43
2400	788	1696	9.05	19.48
2700	1299	2995	14.92	34.40
3000	1745	4740	20.04	54.44
3300	1557	6297	17.88	72.32
3600	1258	7555	14.45	86.77
3900	710	8265	8.15	94.92
4200	394	8659	4.53	99.45
4500	48	8707	0.55	100.00
4800	0	8707	0.00	100.00

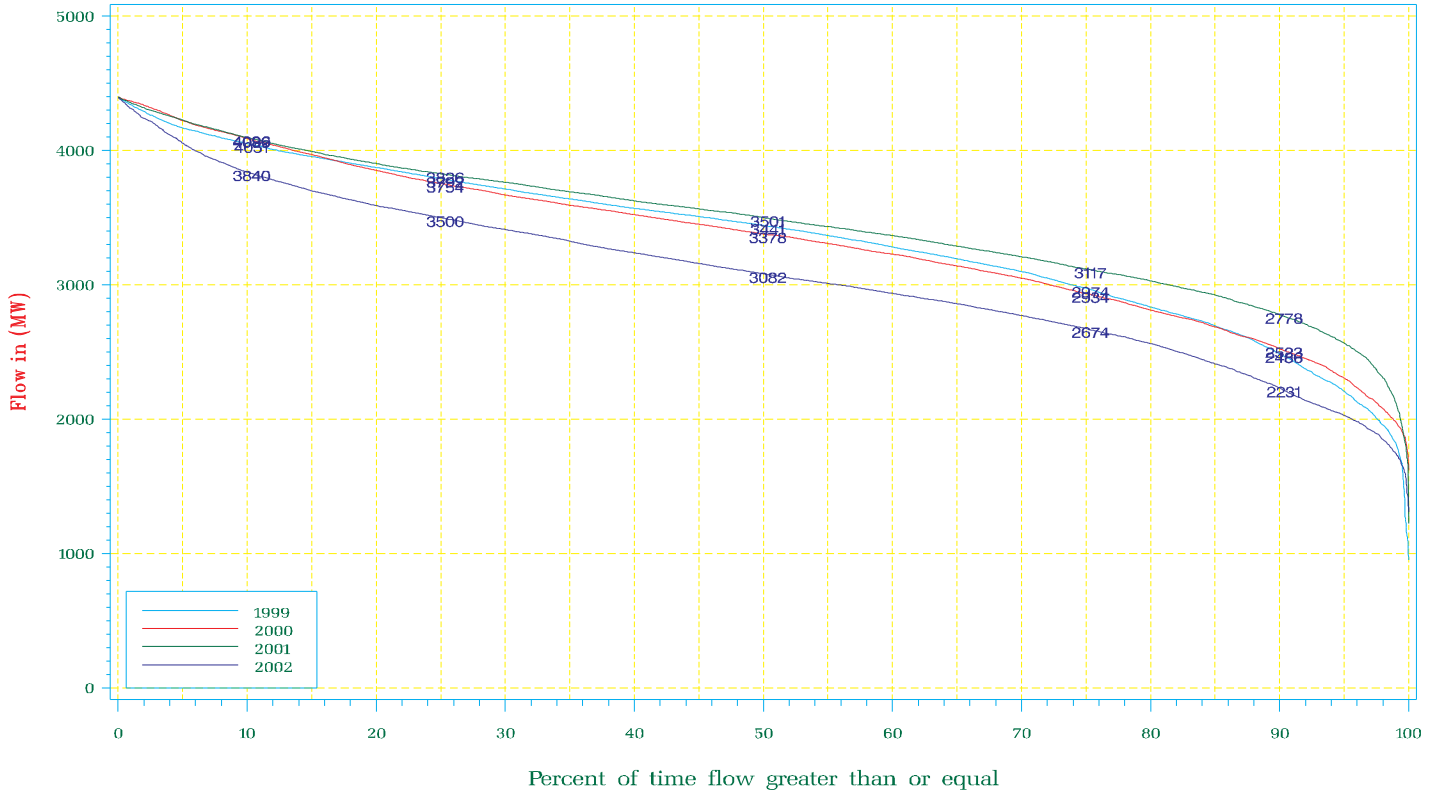
NYISO Frequency Interface Flow For January 1999 – December 2002

Volney – East (OPEN)



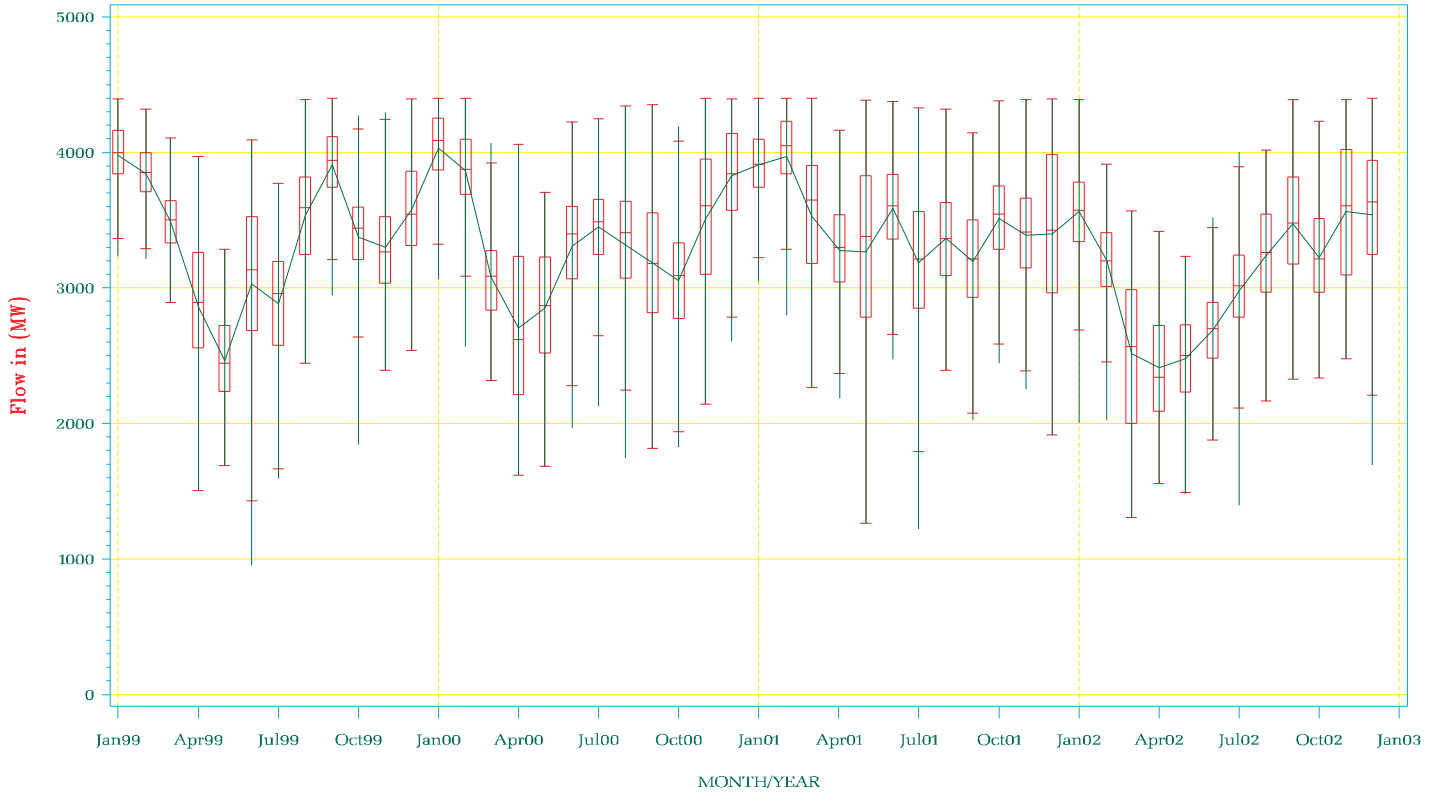
NYISO Percent of time Interface Flow For January 1999 – December 2002

Volney – East (OPEN)



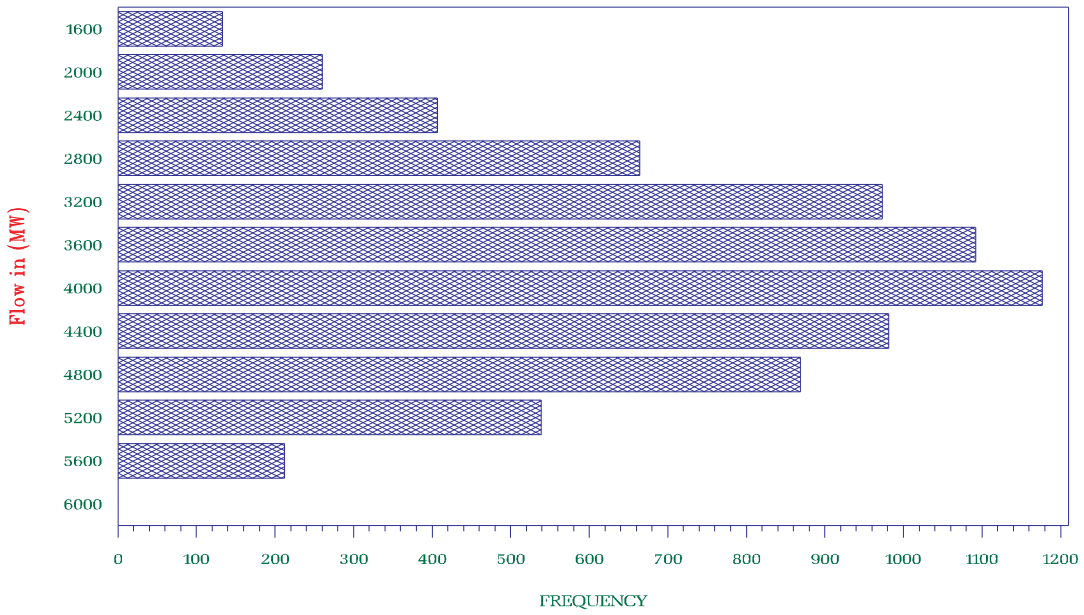
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Volney – East (OPEN)



NYISO Frequency Interface Flow For January – December 2002

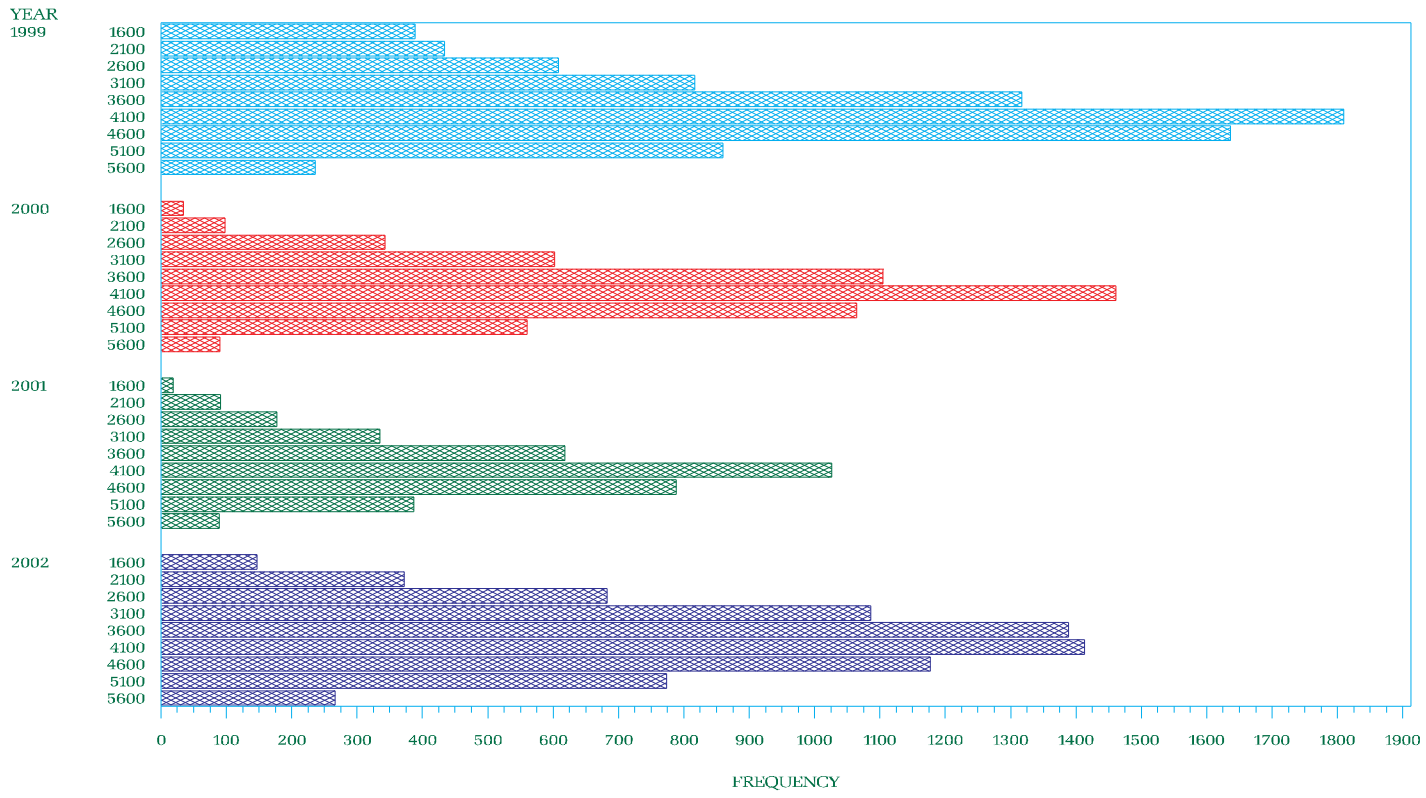
Volney – East (CLOSED)



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1600	133	133	1.82	1.82
2000	260	393	3.56	5.38
2400	407	800	5.57	10.95
2800	664	1464	9.09	20.04
3200	973	2437	13.32	33.35
3600	1092	3529	14.94	48.30
4000	1177	4706	16.11	64.40
4400	981	5687	13.43	77.83
4800	869	6556	11.89	89.72
5200	539	7095	7.38	97.10
5600	212	7307	2.90	100.00
6000	0	7307	0.00	100.00

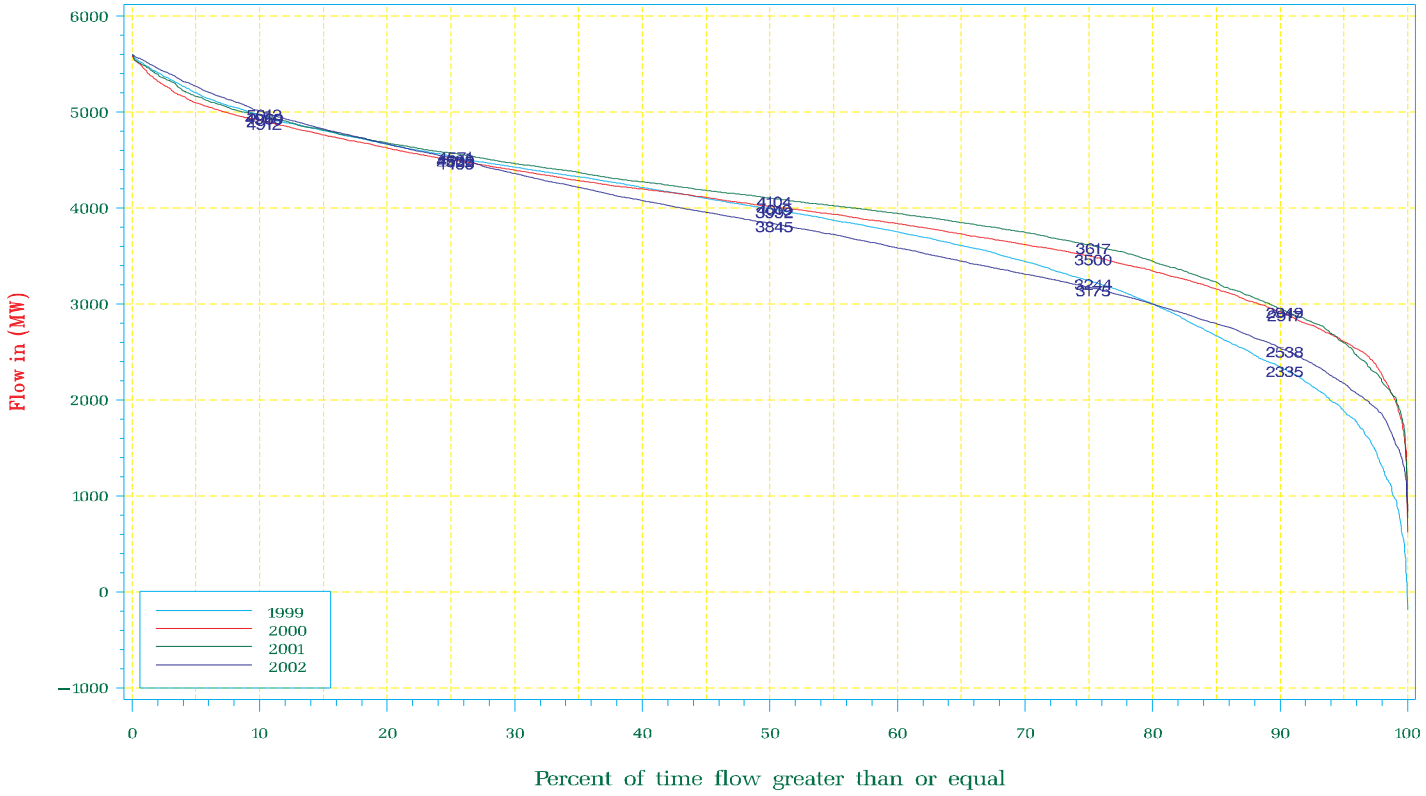
NYISO Frequency Interface Flow For January 1999 – December 2002

Volney – East (CLOSED)



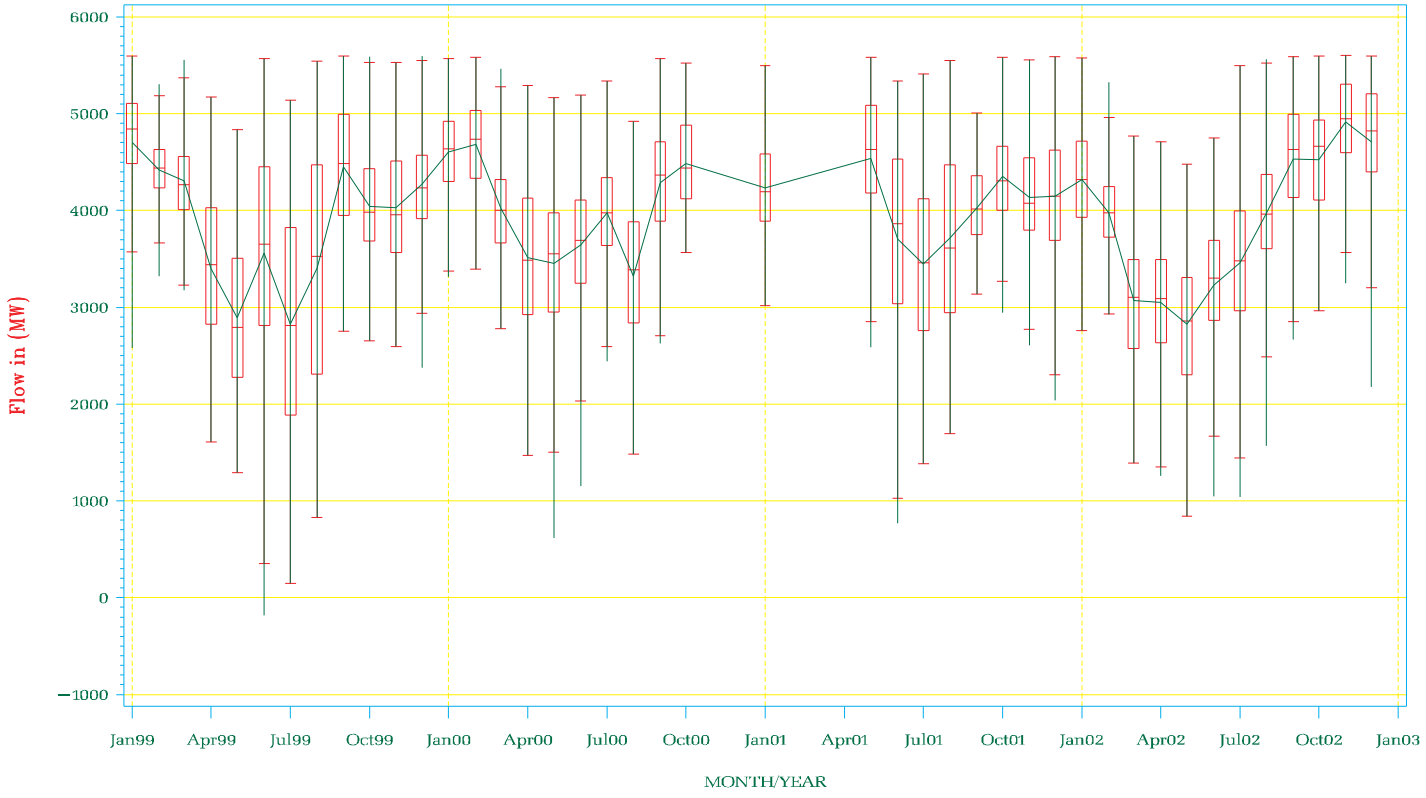
NYISO Percent of time Interface Flow For January 1999 – December 2002

Volney – East (CLOSED)



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

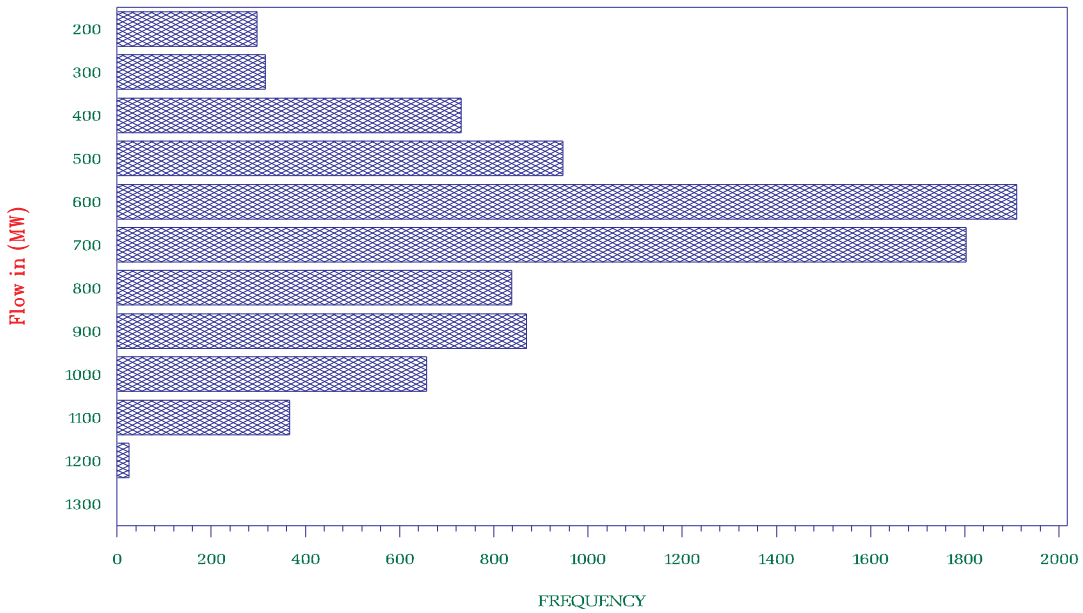
Volney – East (CLOSED)



NYISO Frequency Interface Flow For January – December 2002

Westchester – Long Island

Y49 + Y50

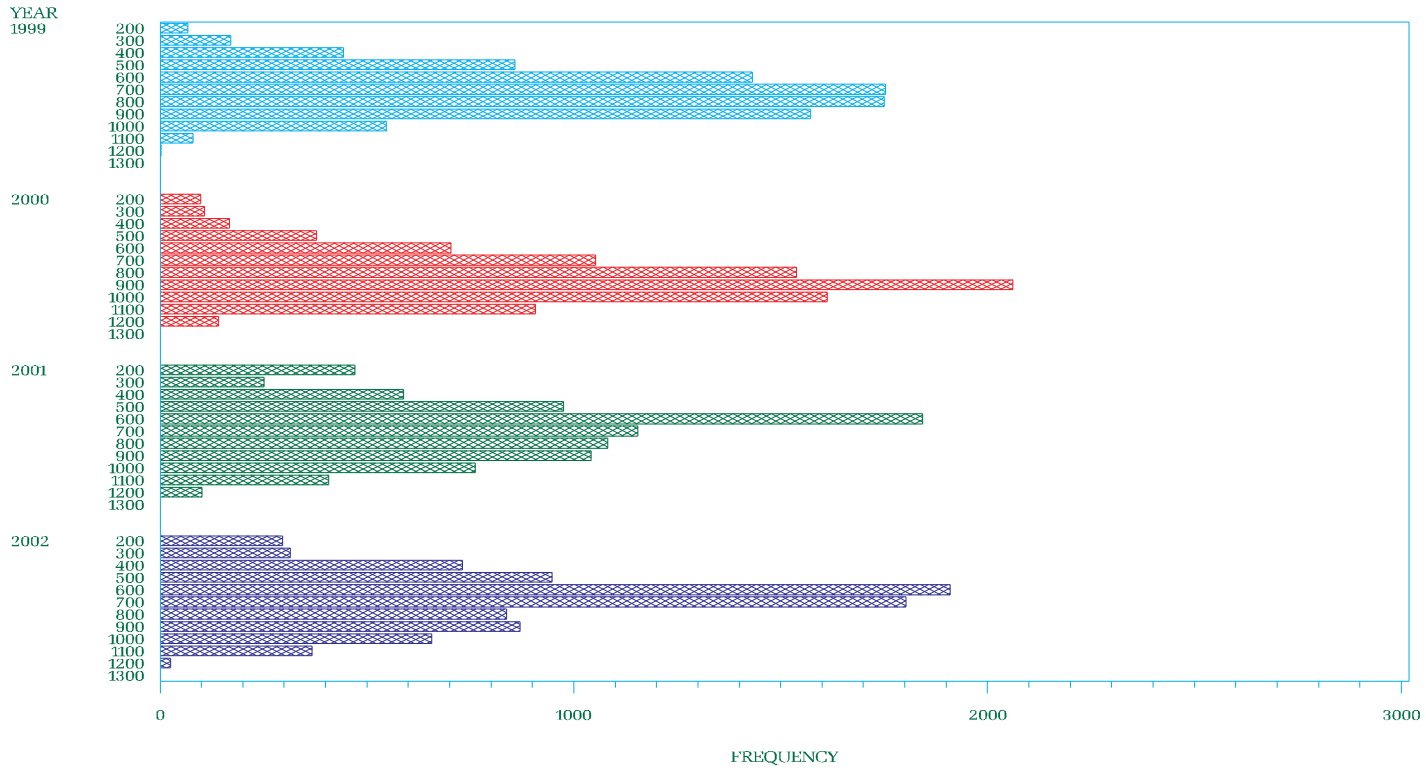


	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
200	297	297	3.39	3.39
300	315	612	3.60	6.99
400	731	1343	8.34	15.33
500	947	2290	10.81	26.14
600	1910	4200	21.80	47.95
700	1803	6003	20.58	68.53
800	838	6841	9.57	78.09
900	870	7711	9.93	88.03
1000	657	8368	7.50	95.53
1100	367	8735	4.19	99.71
1200	25	8760	0.29	100.00
1300	0	8760	0.00	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

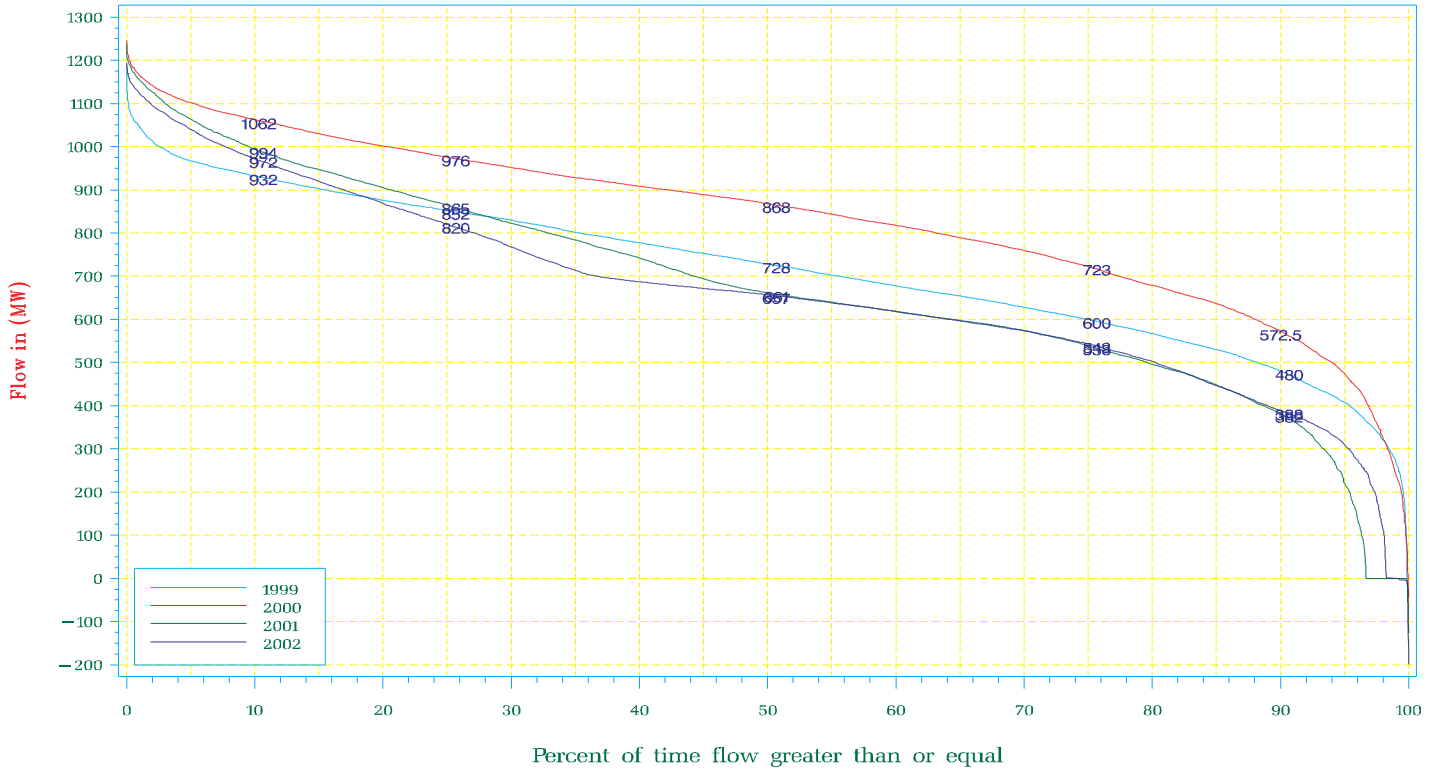
Westchester – Long Island

Y49 + Y50



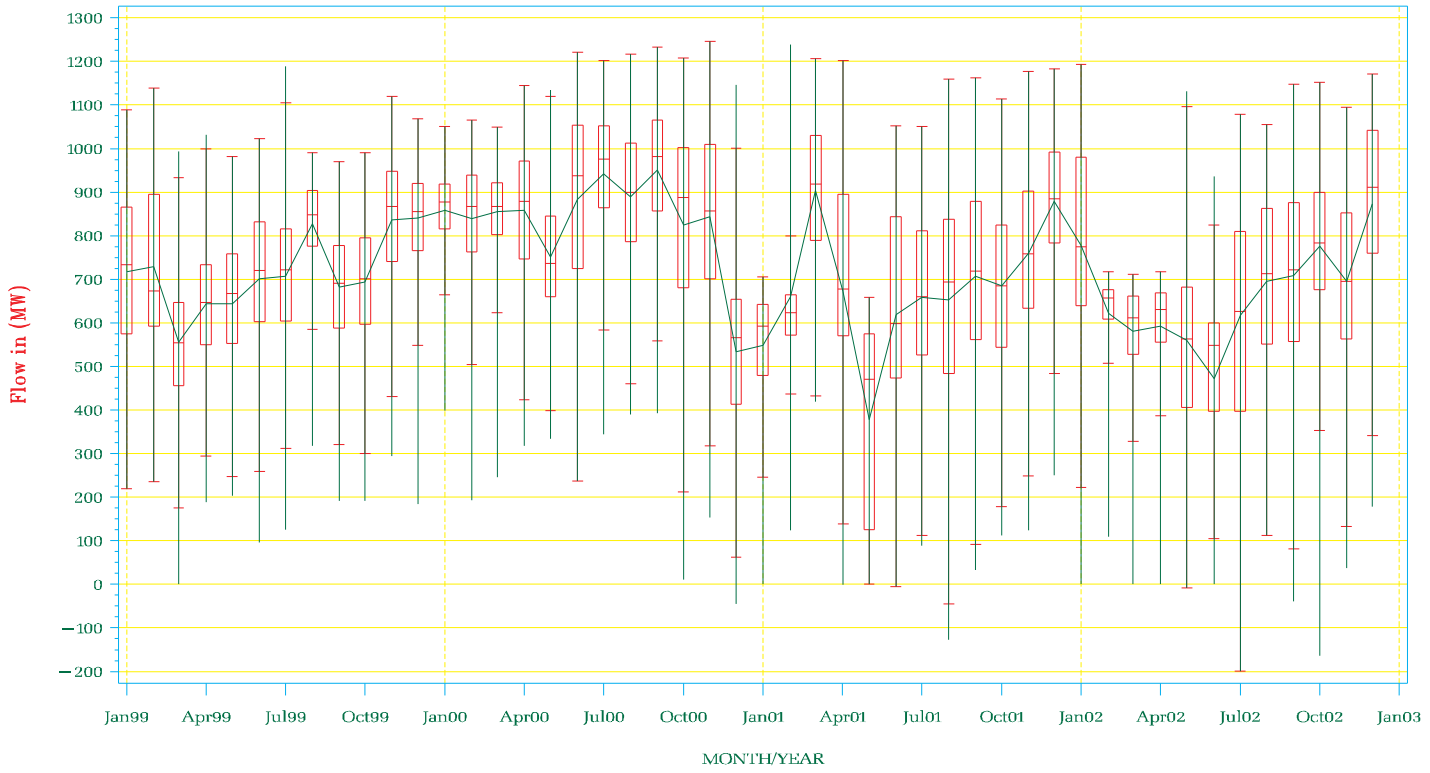
NYISO Percent of time Interface Flow For January 1999 – December 2002

Westchester – Long Island
Y49 + Y50



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

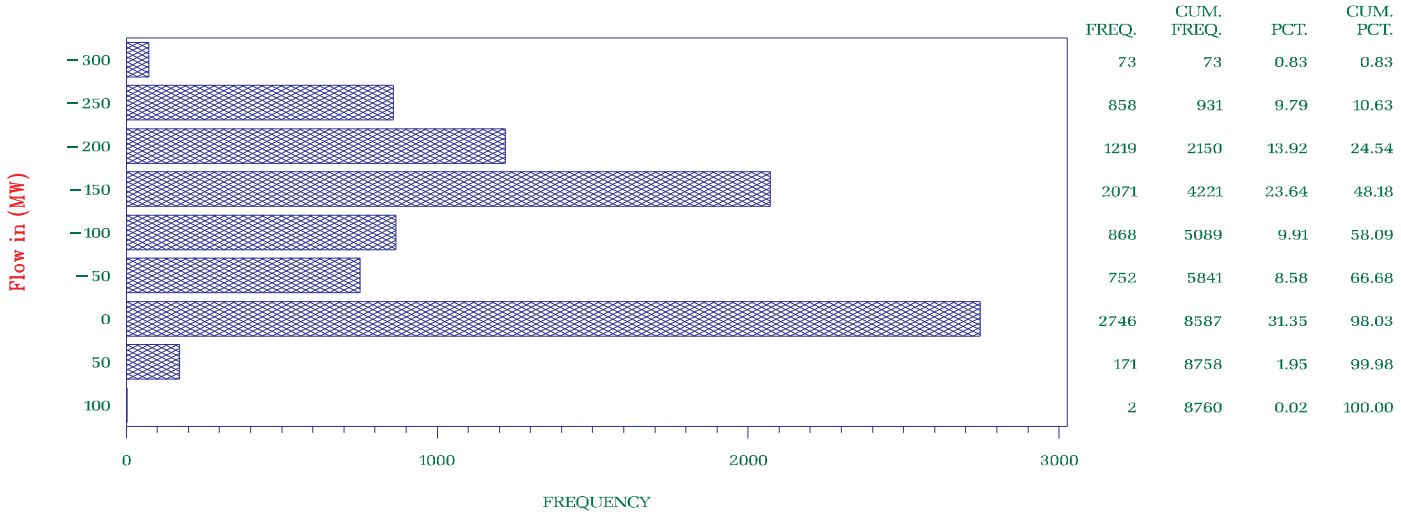
Westchester – Long Island
Y49 + Y50



NYISO Frequency Interface Flow For January – December 2002

New York City – Long Island

901 + 903

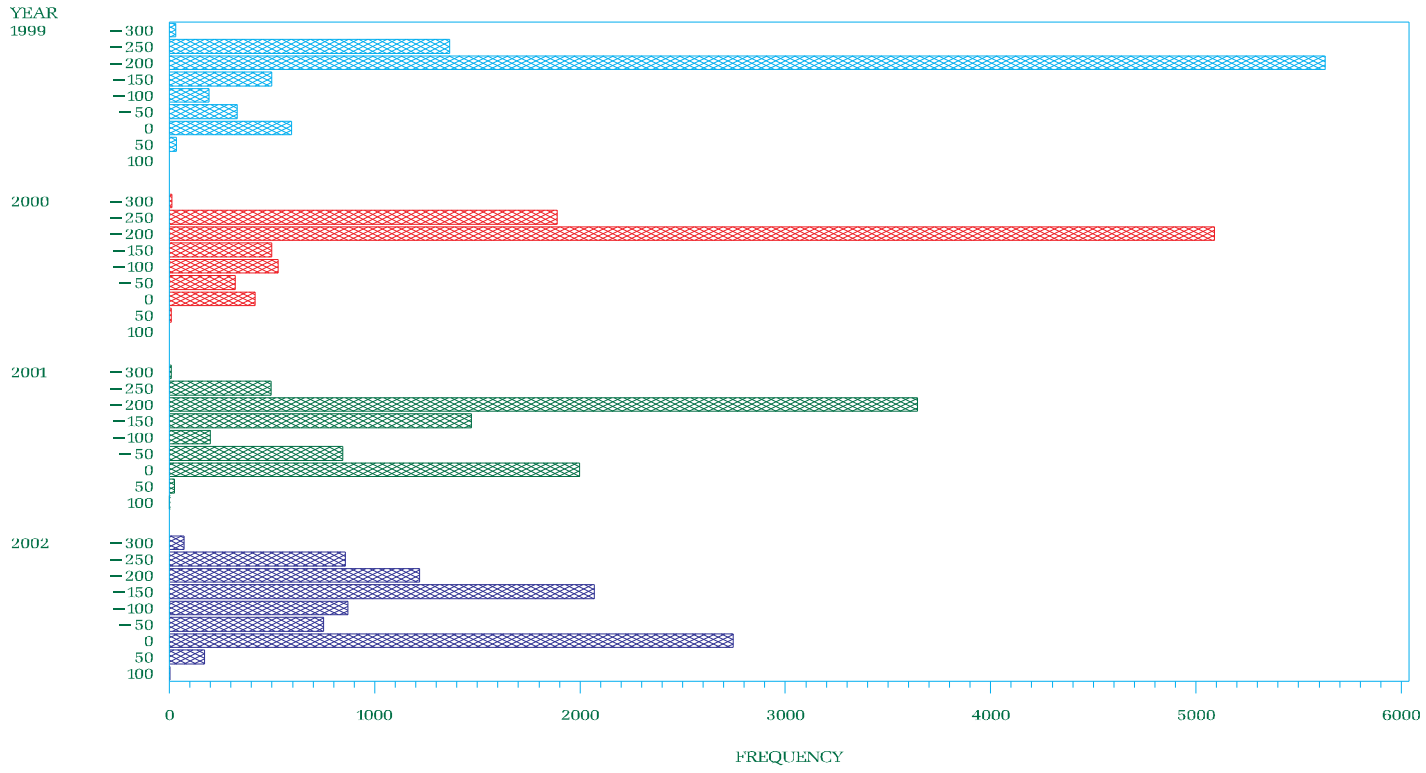


	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
−300	73	73	0.83	0.83
−250	858	931	9.79	10.63
−200	1219	2150	13.92	24.54
−150	2071	4221	23.64	48.18
−100	868	5089	9.91	58.09
−50	752	5841	8.58	66.68
0	2746	8587	31.35	98.03
50	171	8758	1.95	99.98
100	2	8760	0.02	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

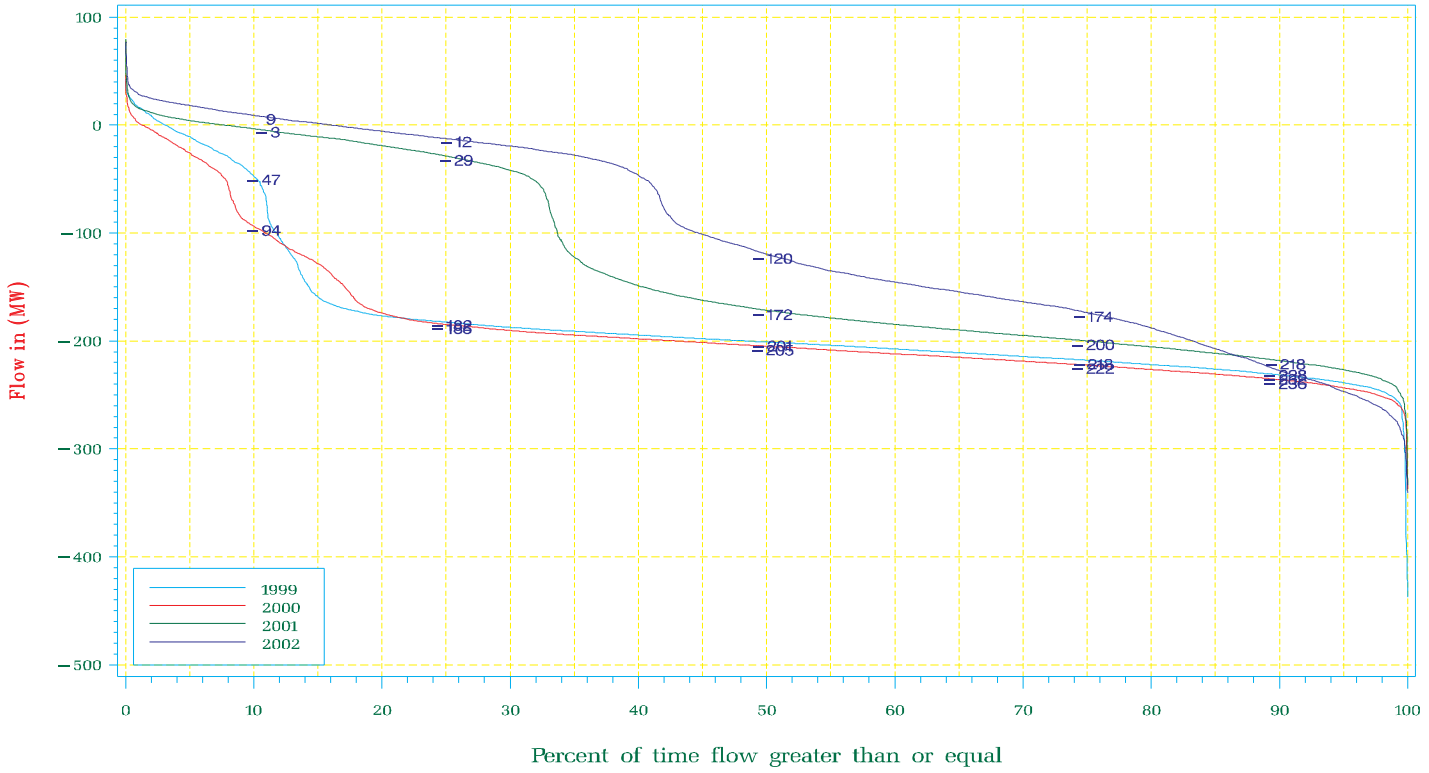
New York City – Long Island

901 + 903



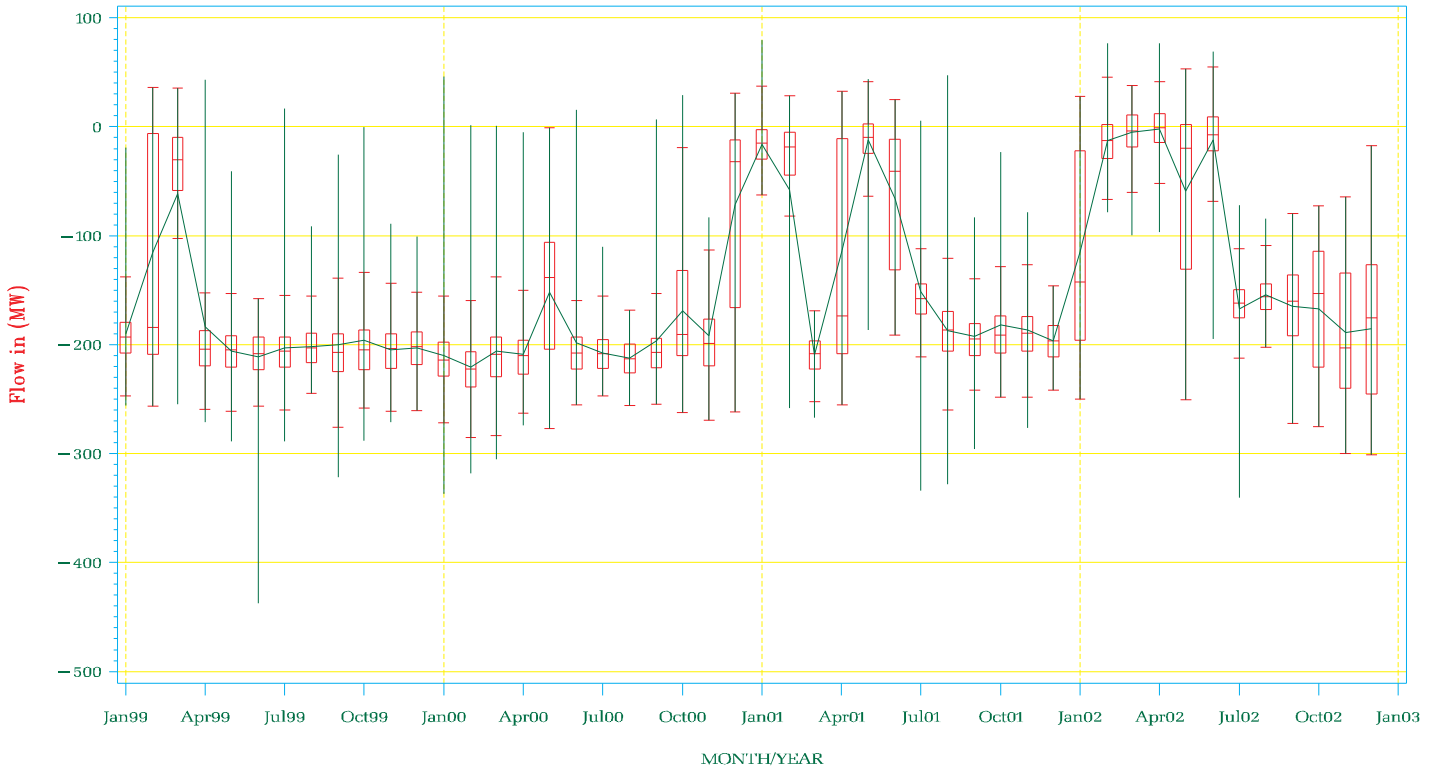
NYISO Percent of time Interface Flow For January 1999 – December 2002

New York City – Long Island
901 + 903



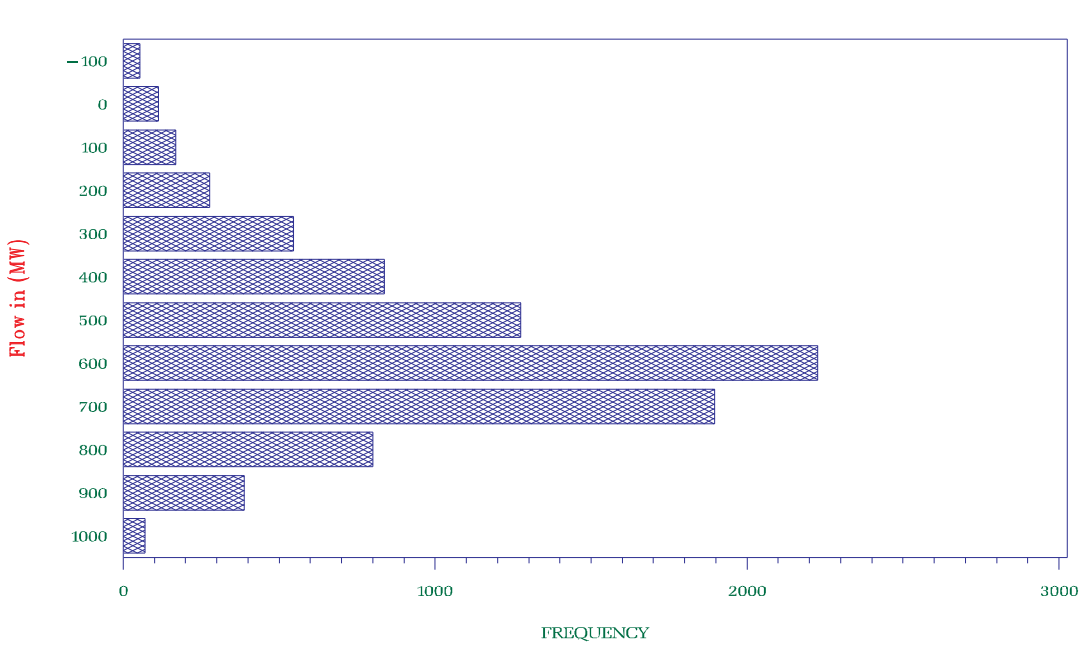
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

New York City – Long Island
901 + 903



NYISO Frequency Interface Flow For January – December 2002

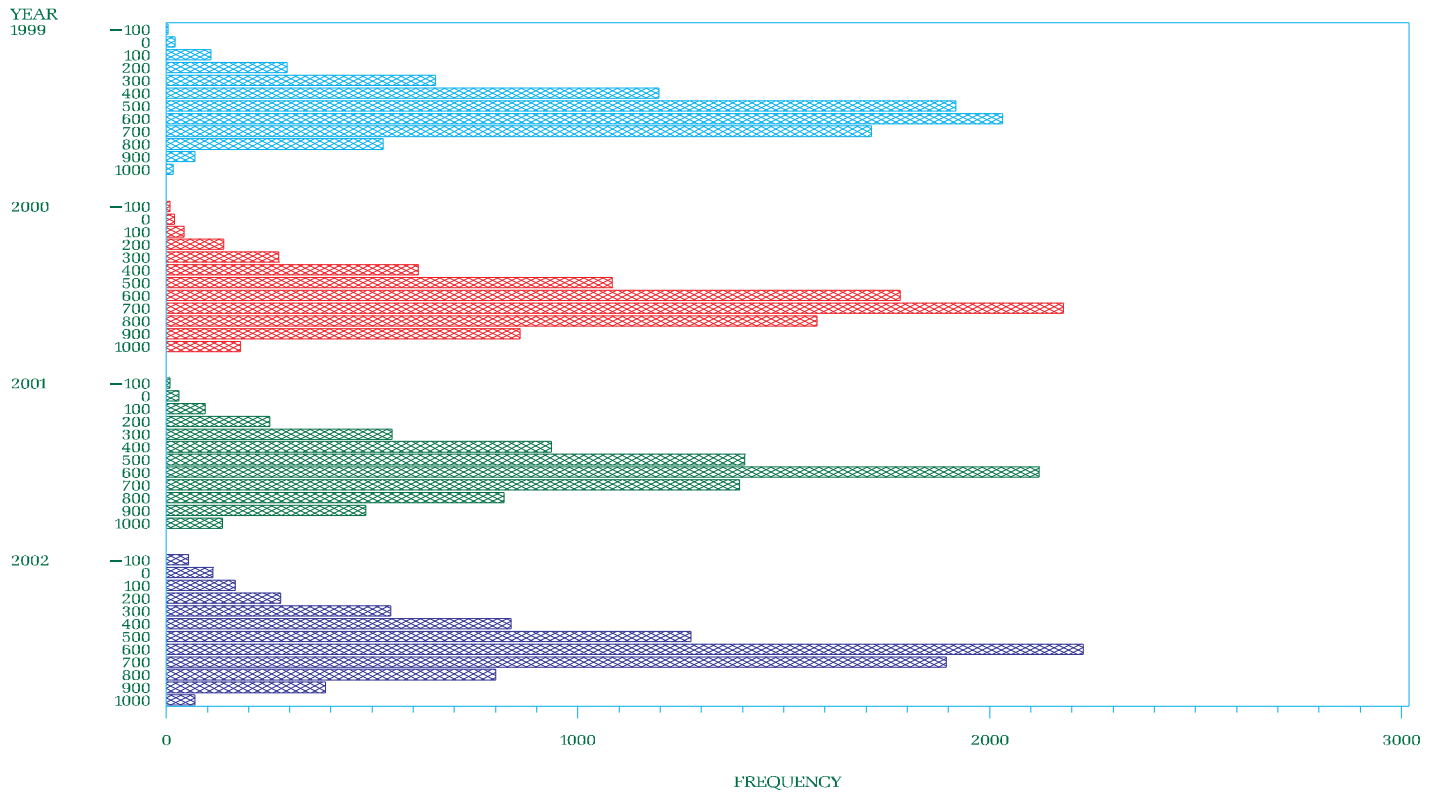
LIPA Import



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
−100	54	54	0.62	0.62
0	113	167	1.31	1.93
100	168	335	1.94	3.87
200	278	613	3.21	7.09
300	545	1158	6.30	13.39
400	838	1996	9.69	23.08
500	1274	3270	14.73	37.81
600	2227	5497	25.75	63.56
700	1895	7392	21.91	85.48
800	800	8192	9.25	94.73
900	387	8579	4.48	99.20
1000	69	8648	0.80	100.00

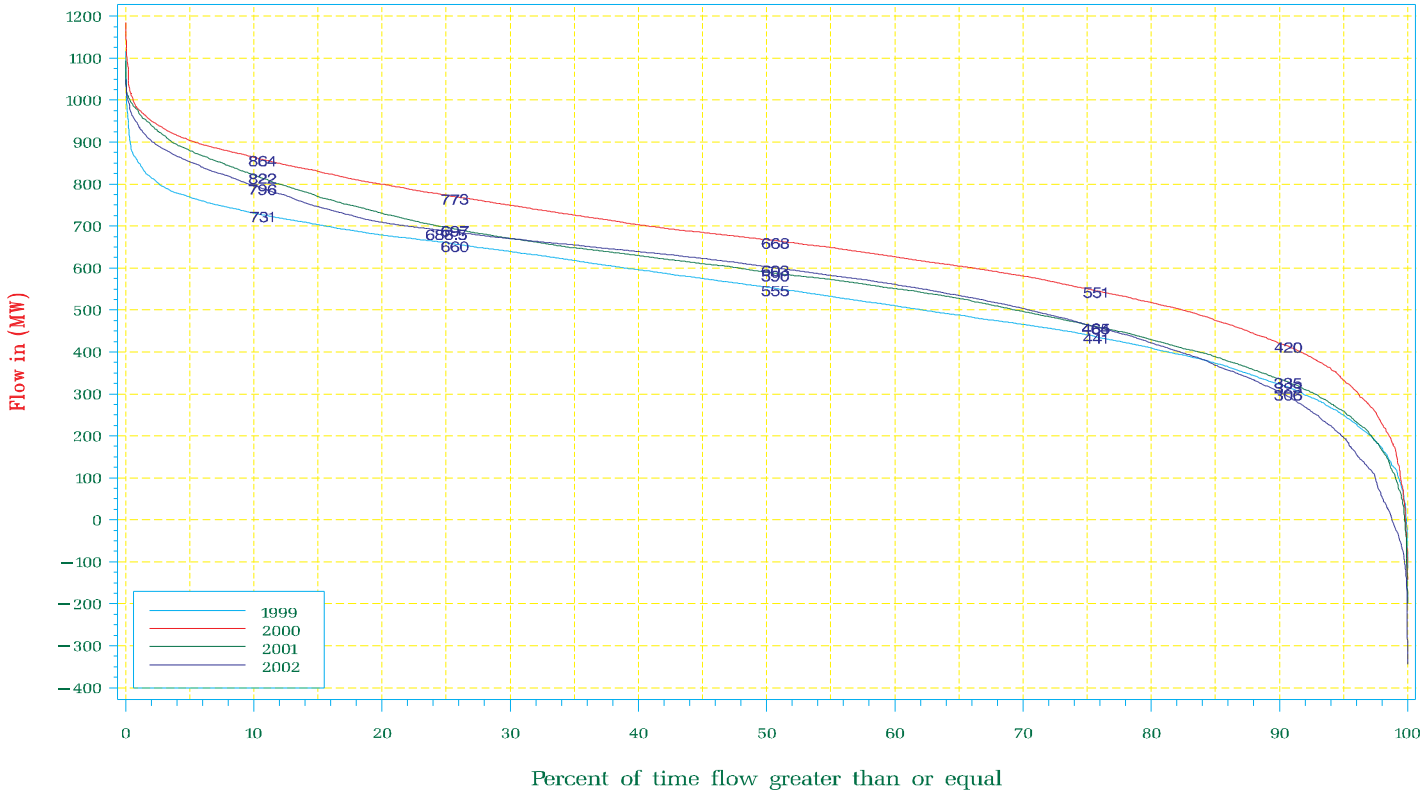
NYISO Frequency Interface Flow For January 1999 – December 2002

LIPA Import



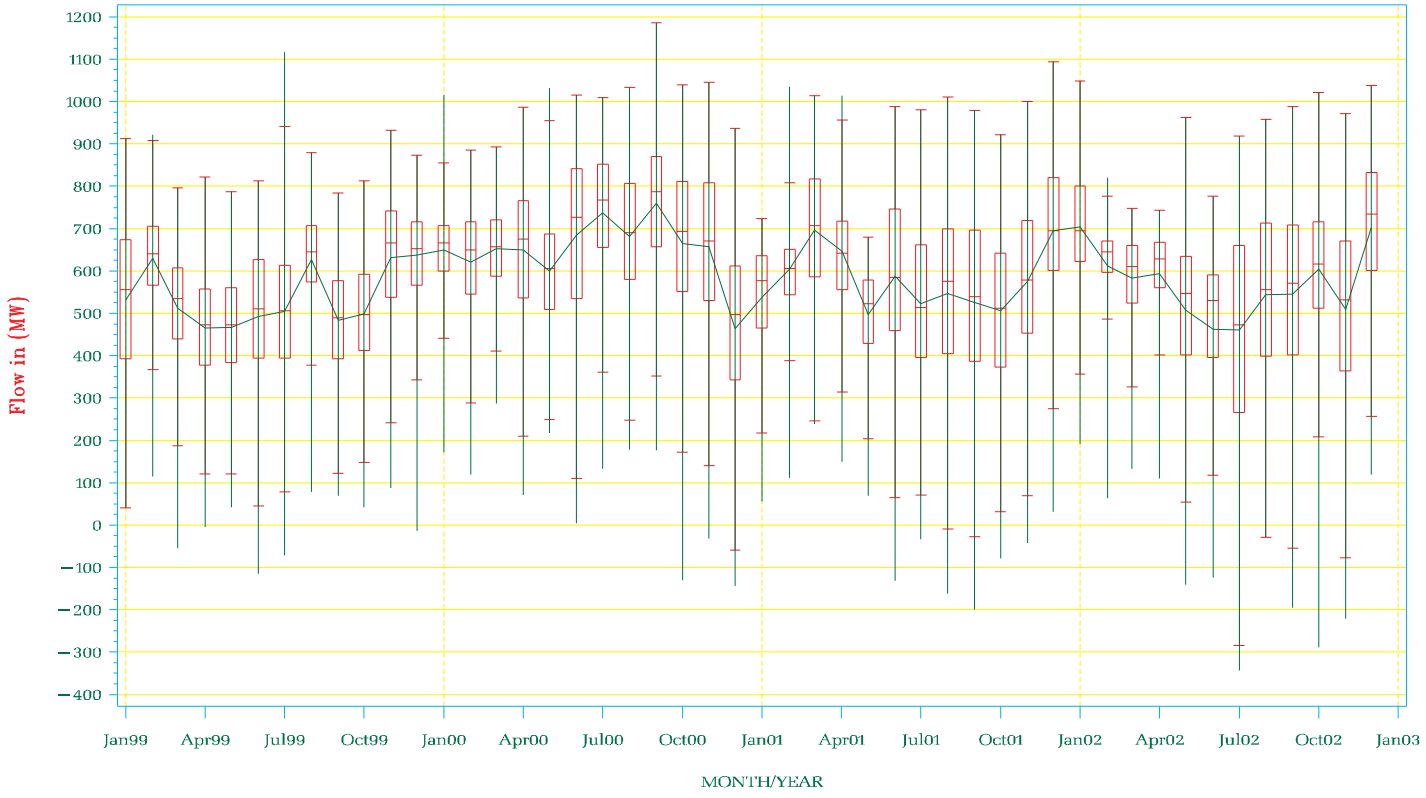
NYISO Percent of time Interface Flow For January 1999 – December 2002

LIPA Import



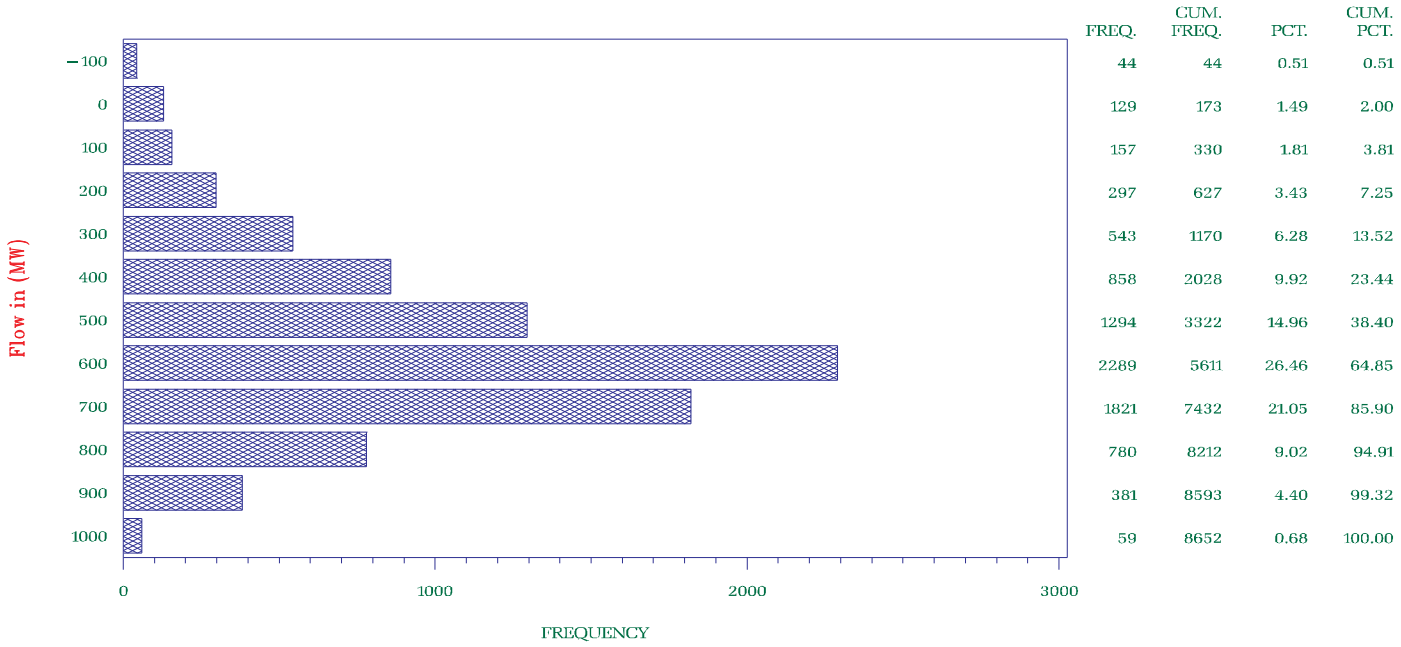
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

LIPA Import



NYISO Frequency Interface Flow For January – December 2002

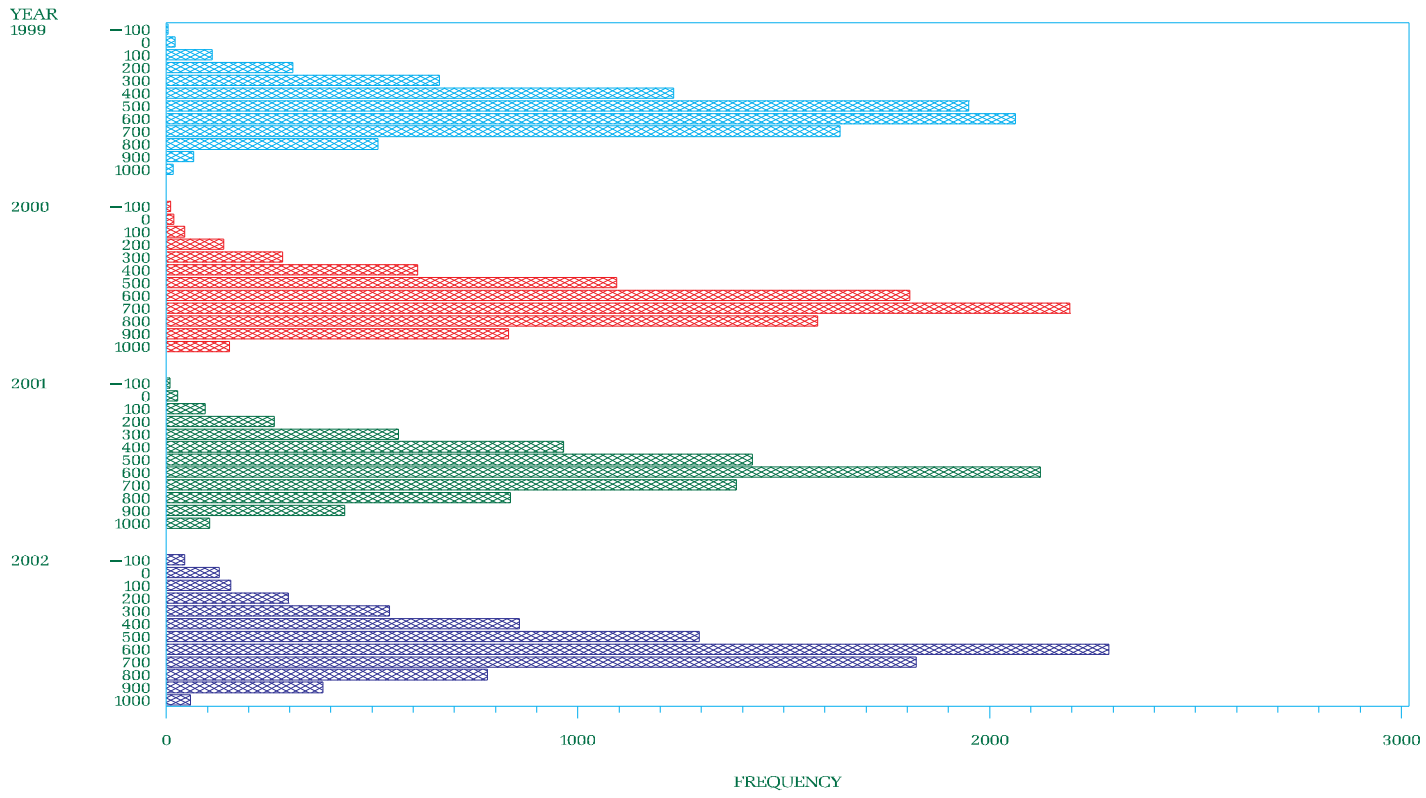
Con Ed – LIPA



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
–100	44	44	0.51	0.51
0	129	173	1.49	2.00
100	157	330	1.81	3.81
200	297	627	3.43	7.25
300	543	1170	6.28	13.52
400	858	2028	9.92	23.44
500	1294	3322	14.96	38.40
600	2289	5611	26.46	64.85
700	1821	7432	21.05	85.90
800	780	8212	9.02	94.91
900	381	8593	4.40	99.32
1000	59	8652	0.68	100.00

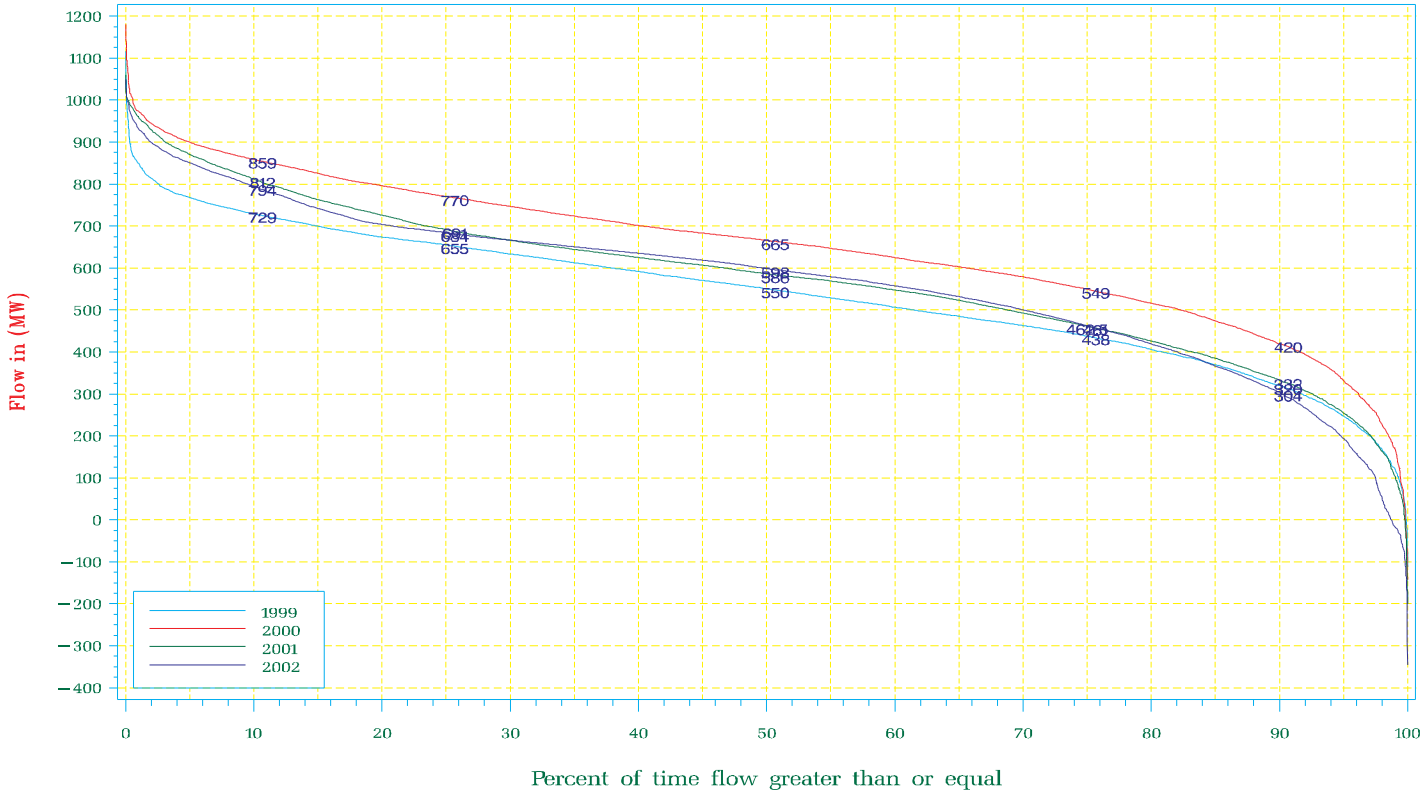
NYISO Frequency Interface Flow For January 1999 – December 2002

Con Ed – LIPA



NYISO Percent of time Interface Flow For January 1999 – December 2002

Con Ed – LIPA

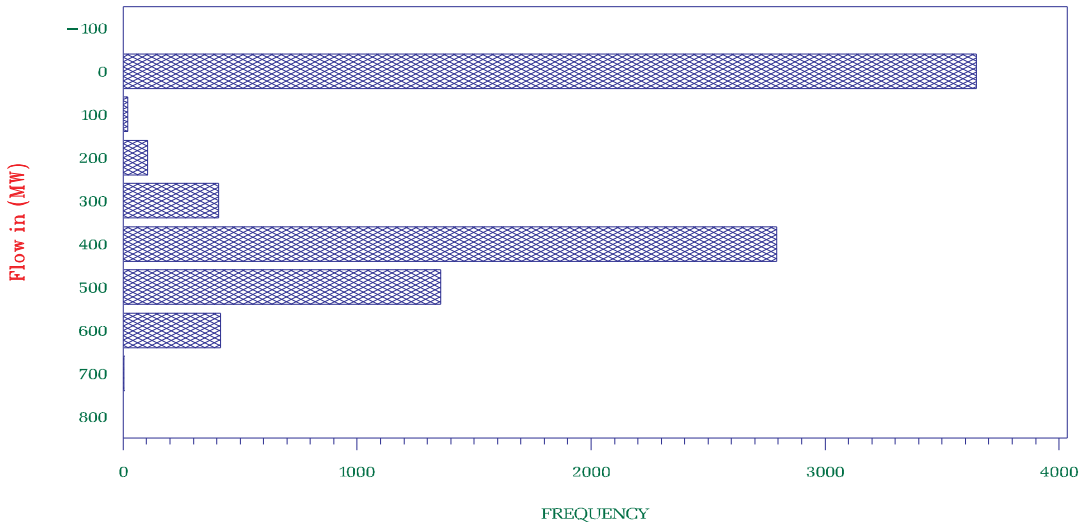


NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Con Ed – LIPA

NYISO Frequency Interface Flow For January – December 2002

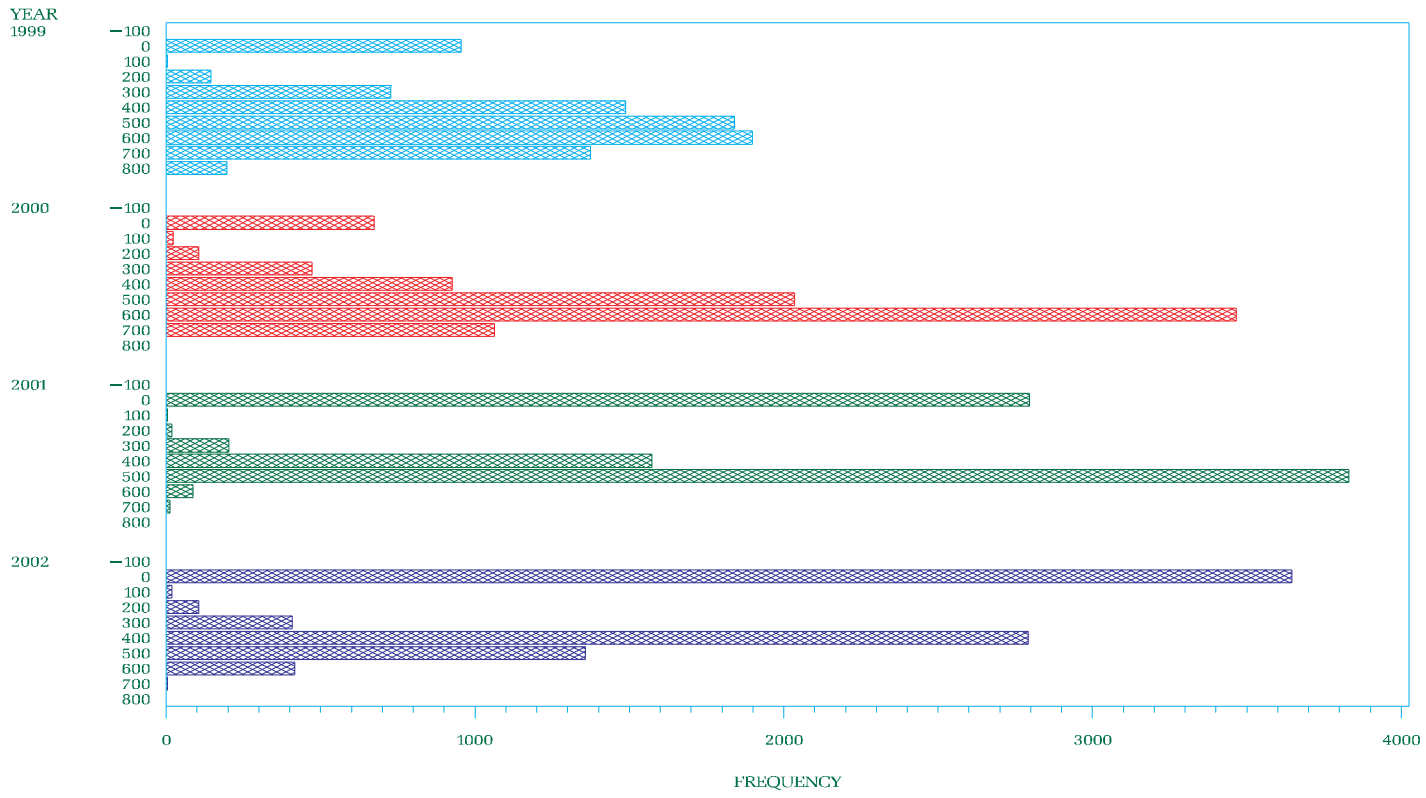
Y50:Dunwoodie – Shore Rd.



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-100	0	0	0.00	0.00
0	3646	3646	41.69	41.69
100	19	3665	0.22	41.90
200	105	3770	1.20	43.11
300	407	4177	4.65	47.76
400	2792	6969	31.92	79.68
500	1358	8327	15.53	95.21
600	416	8743	4.76	99.97
700	3	8746	0.03	100.00
800	0	8746	0.00	100.00

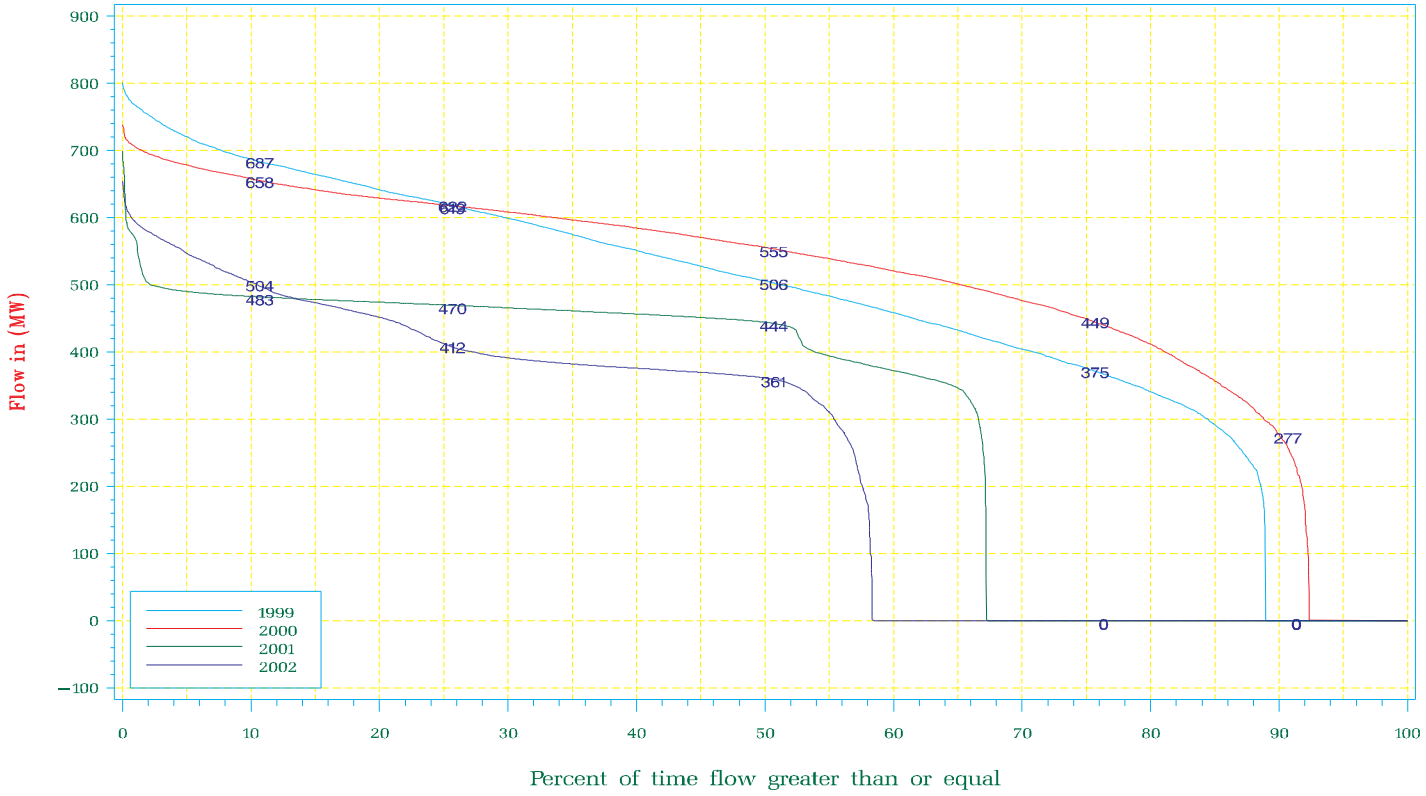
NYISO Frequency Interface Flow For January 1999 – December 2002

Y50:Dunwoodie – Shore Rd.



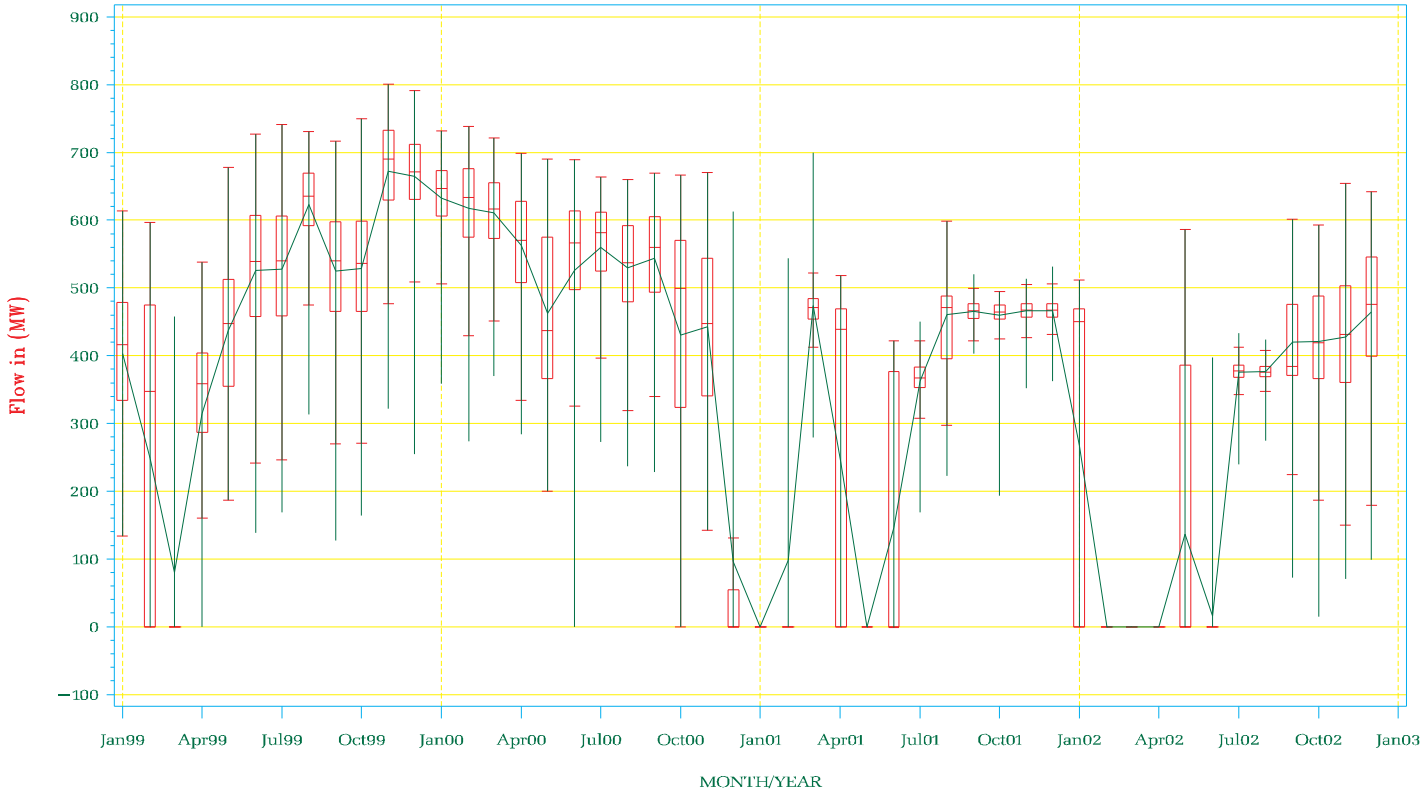
NYISO Percent of time Interface Flow For January 1999 – December 2002

Y50:Dunwoodie – Shore Rd.



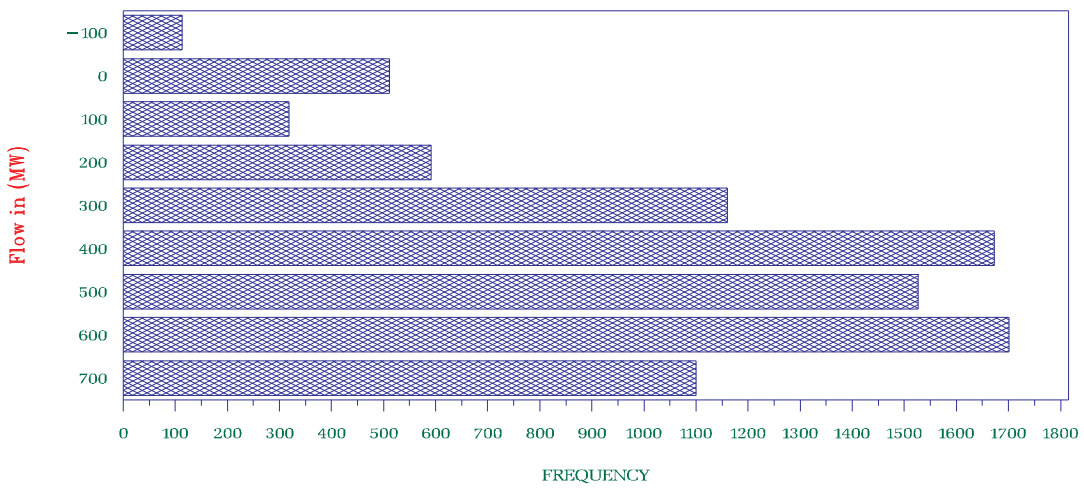
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Y50:Dunwoodie – Shore Rd.



NYISO Frequency Interface Flow For January – December 2002

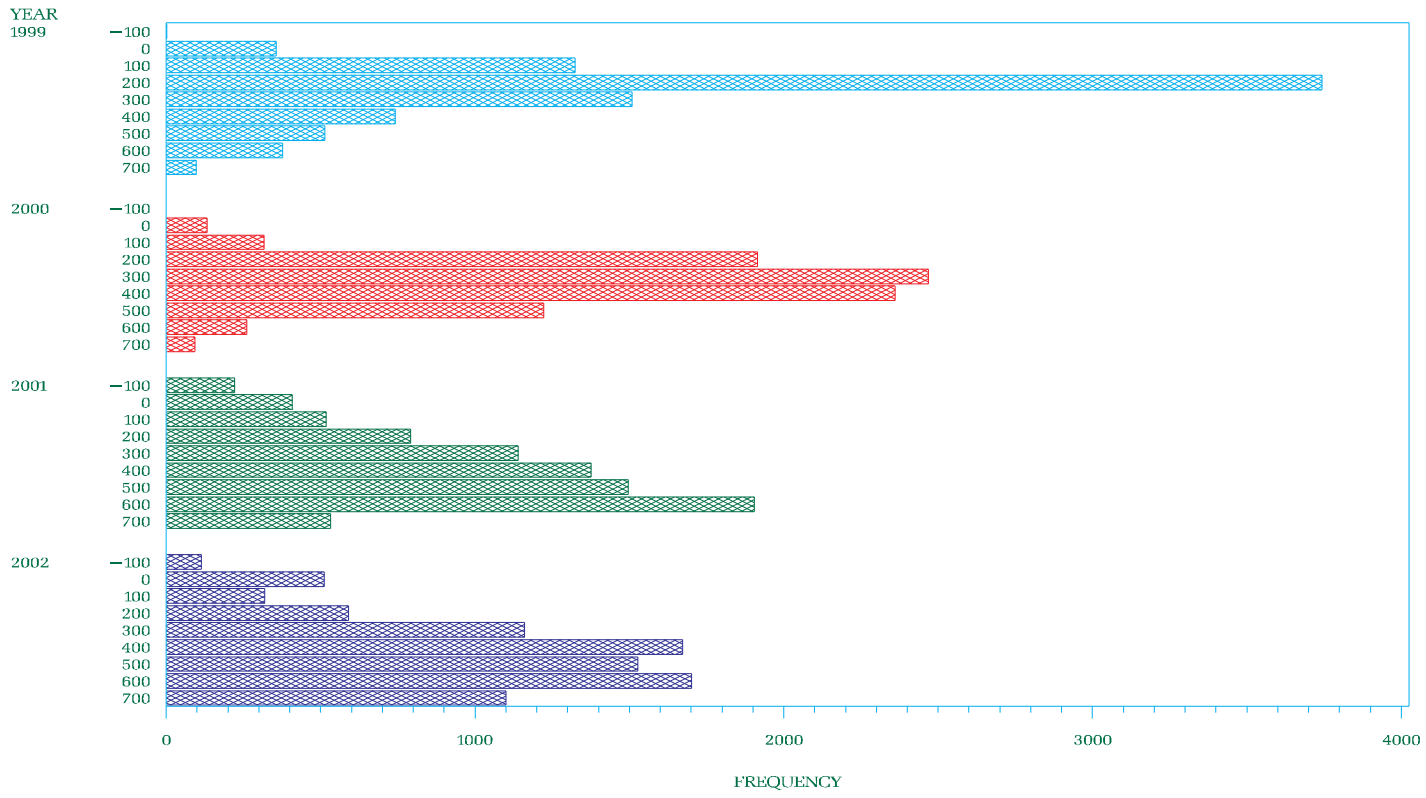
Y49:Sprainbrook – E.Garden City



Flow in (MW)	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-100	113	113	1.30	1.30
0	511	624	5.88	7.18
100	318	942	3.66	10.84
200	591	1533	6.80	17.63
300	1160	2693	13.34	30.98
400	1673	4366	19.24	50.22
500	1527	5893	17.56	67.78
600	1701	7594	19.57	87.35
700	1100	8694	12.65	100.00

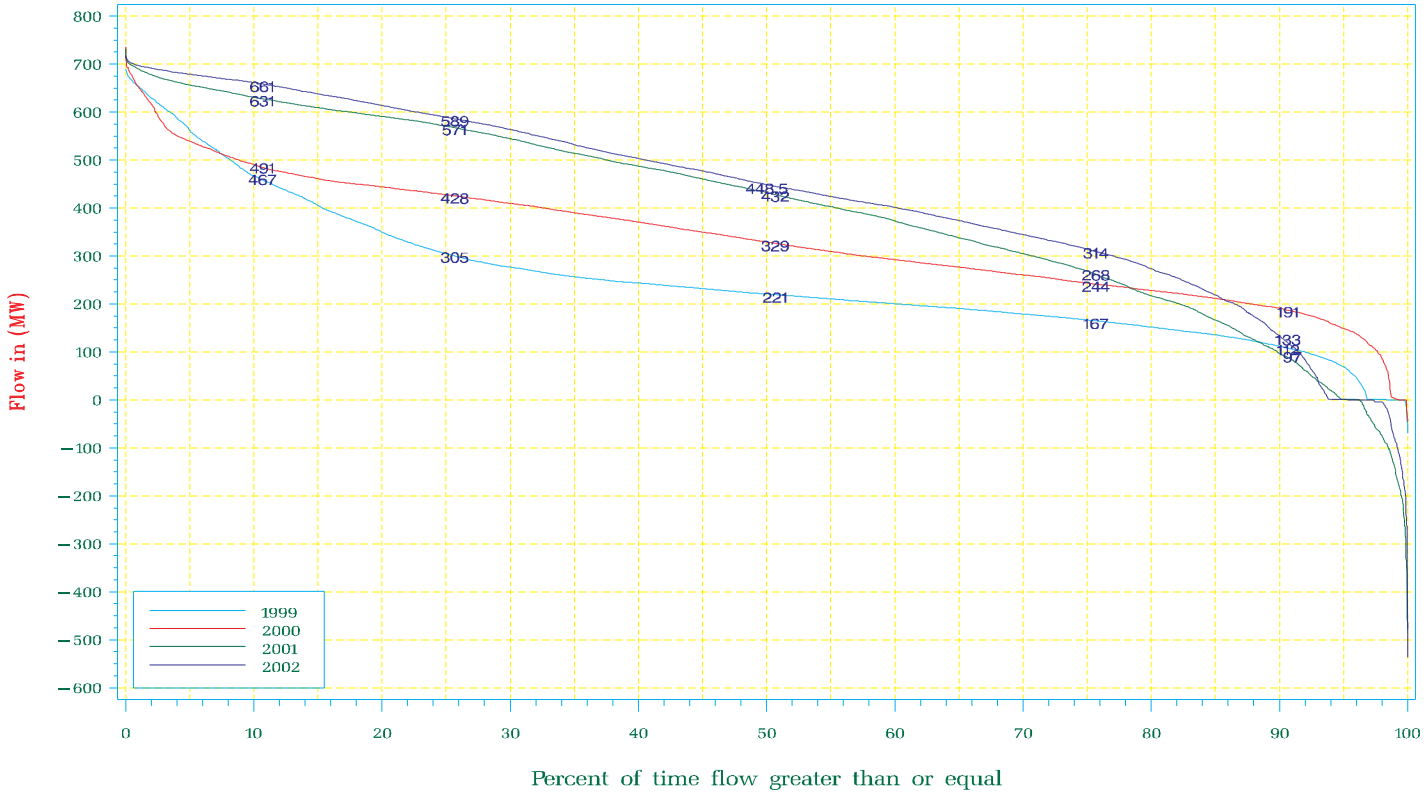
NYISO Frequency Interface Flow For January 1999 – December 2002

Y49:Sprainbrook – E.Garden City



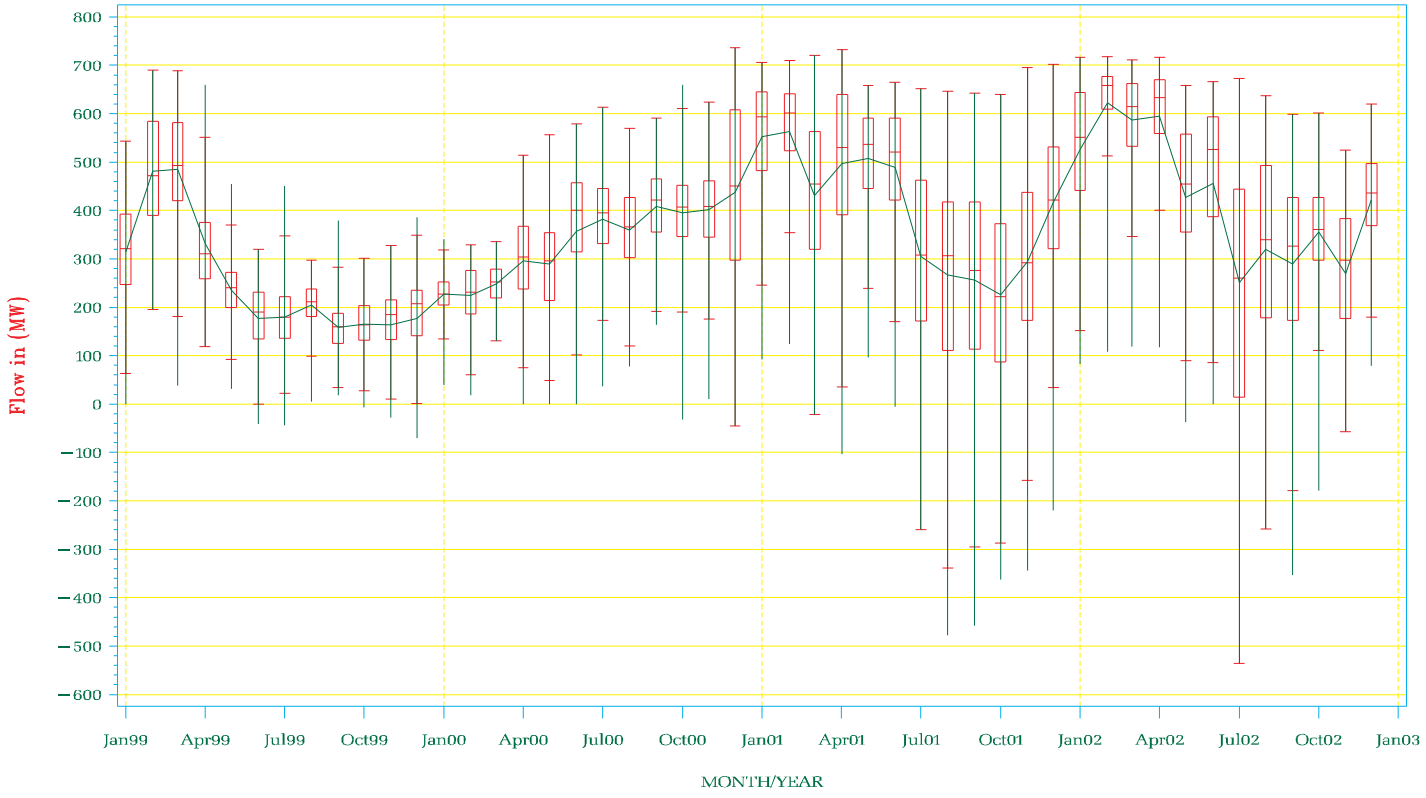
NYISO Percent of time Interface Flow For January 1999 – December 2002

Y49:Sprainbrook – E.Garden City



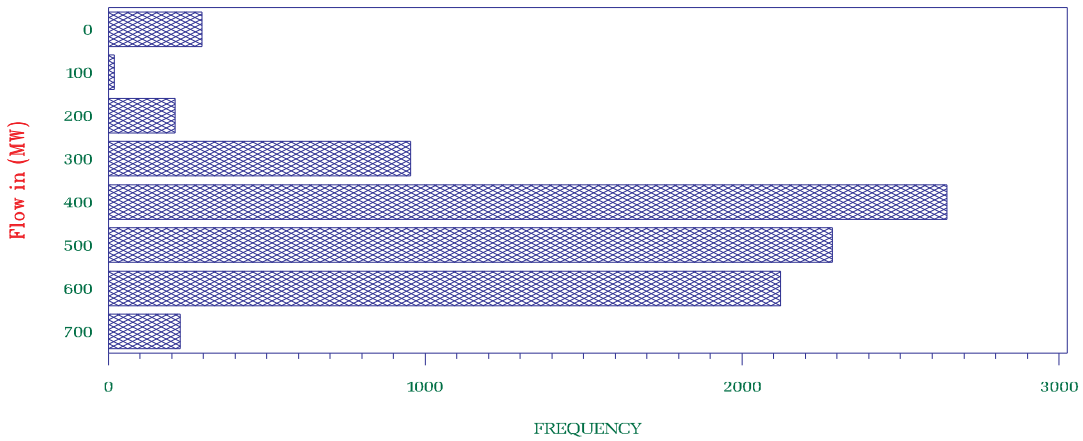
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Y49:Sprainbrook – E.Garden City



NYISO Frequency Interface Flow For January – December 2002

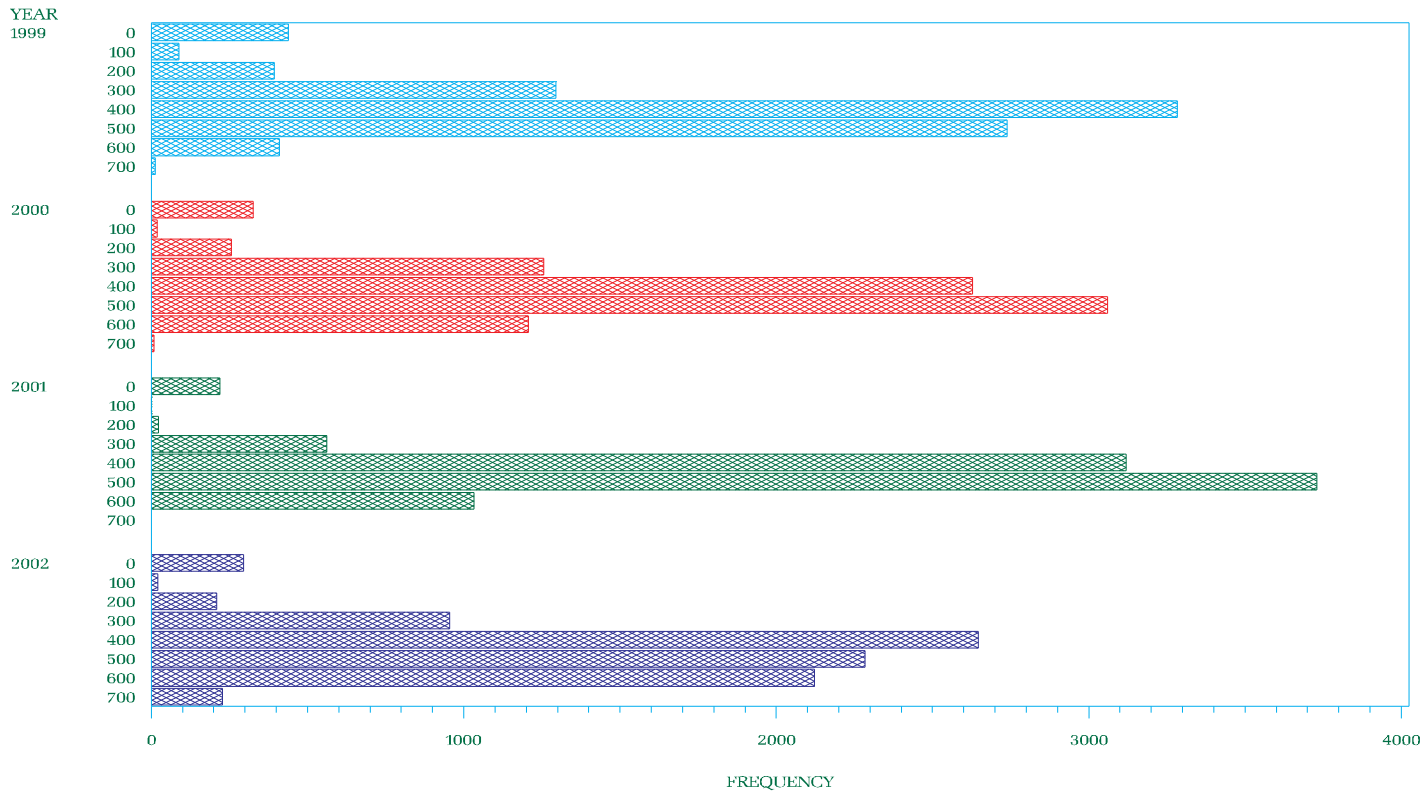
HOMER CITY – WATERCURE



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
0	295	295	3.37	3.37
100	20	315	0.23	3.60
200	210	525	2.40	5.99
300	955	1480	10.90	16.89
400	2646	4126	30.21	47.10
500	2284	6410	26.07	73.17
600	2122	8532	24.22	97.40
700	228	8760	2.60	100.00

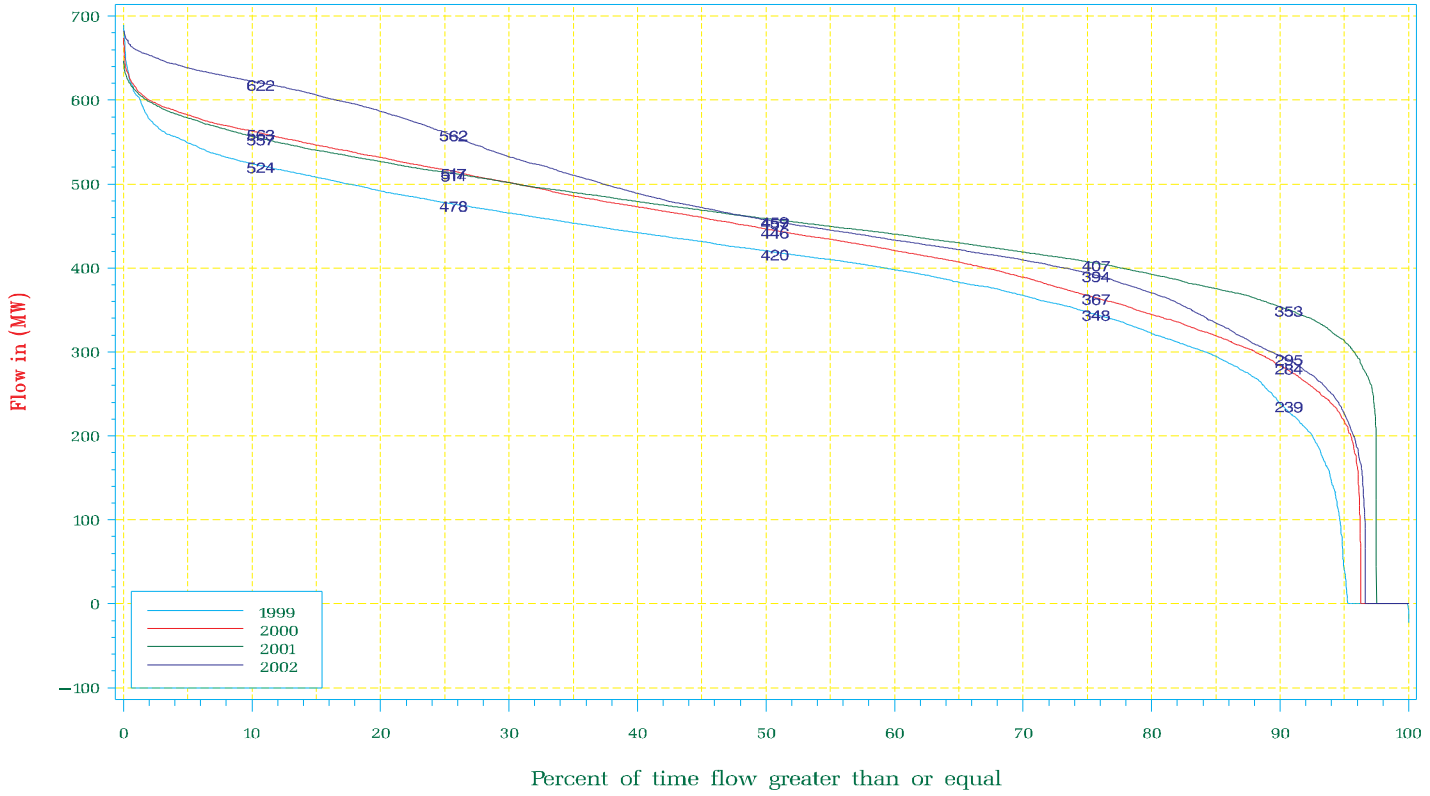
NYISO Frequency Interface Flow For January 1999 – December 2002

HOMER CITY – WATERCURE



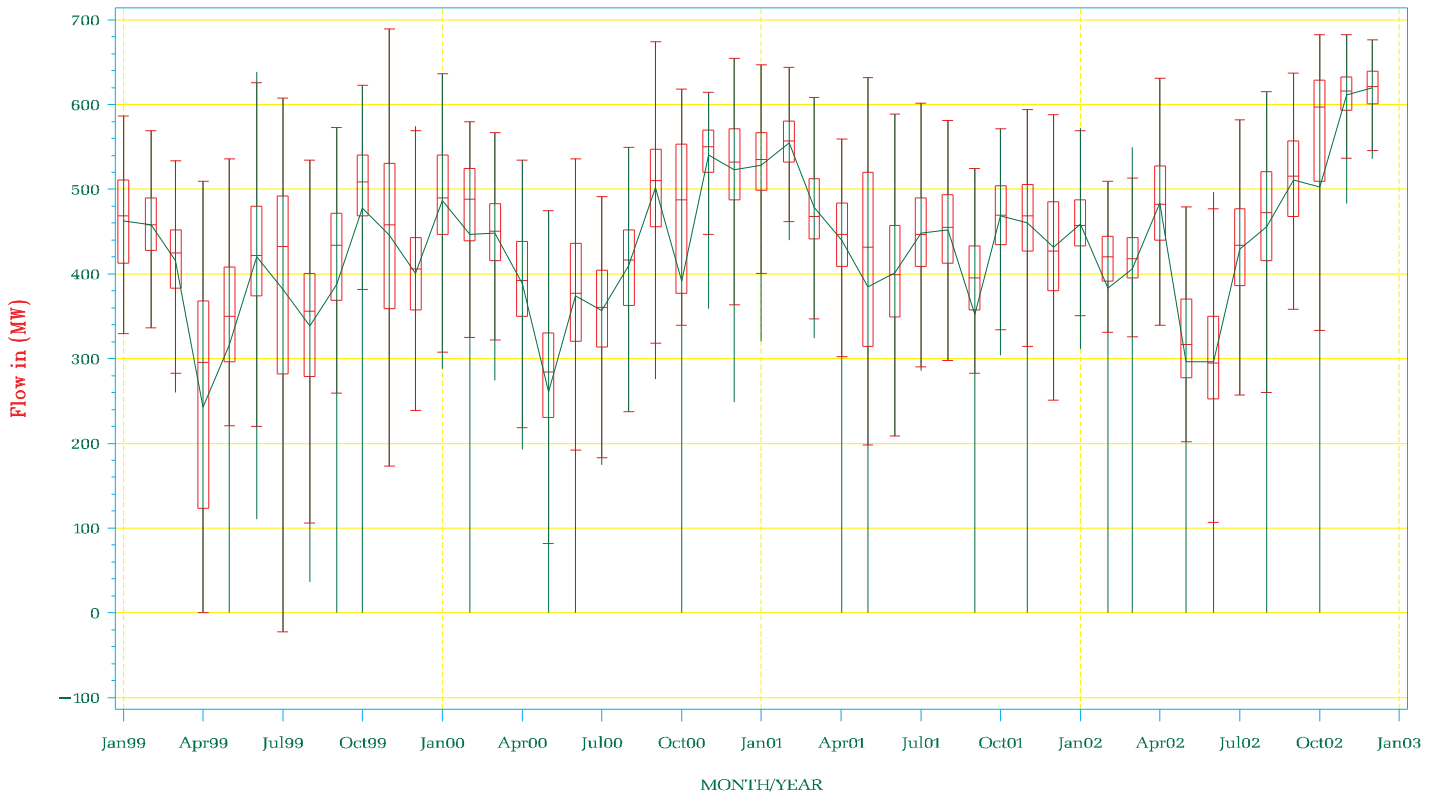
NYISO Percent of time Interface Flow For January 1999 – December 2002

HOMER CITY – WATERCURE



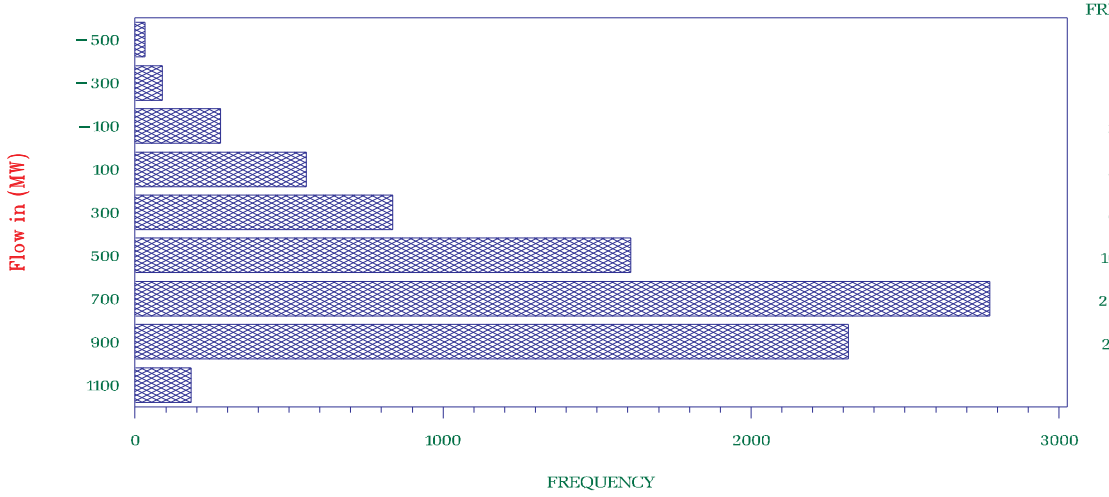
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

HOMER CITY – WATERCURE



NYISO Frequency Interface Flow For January – December 2002

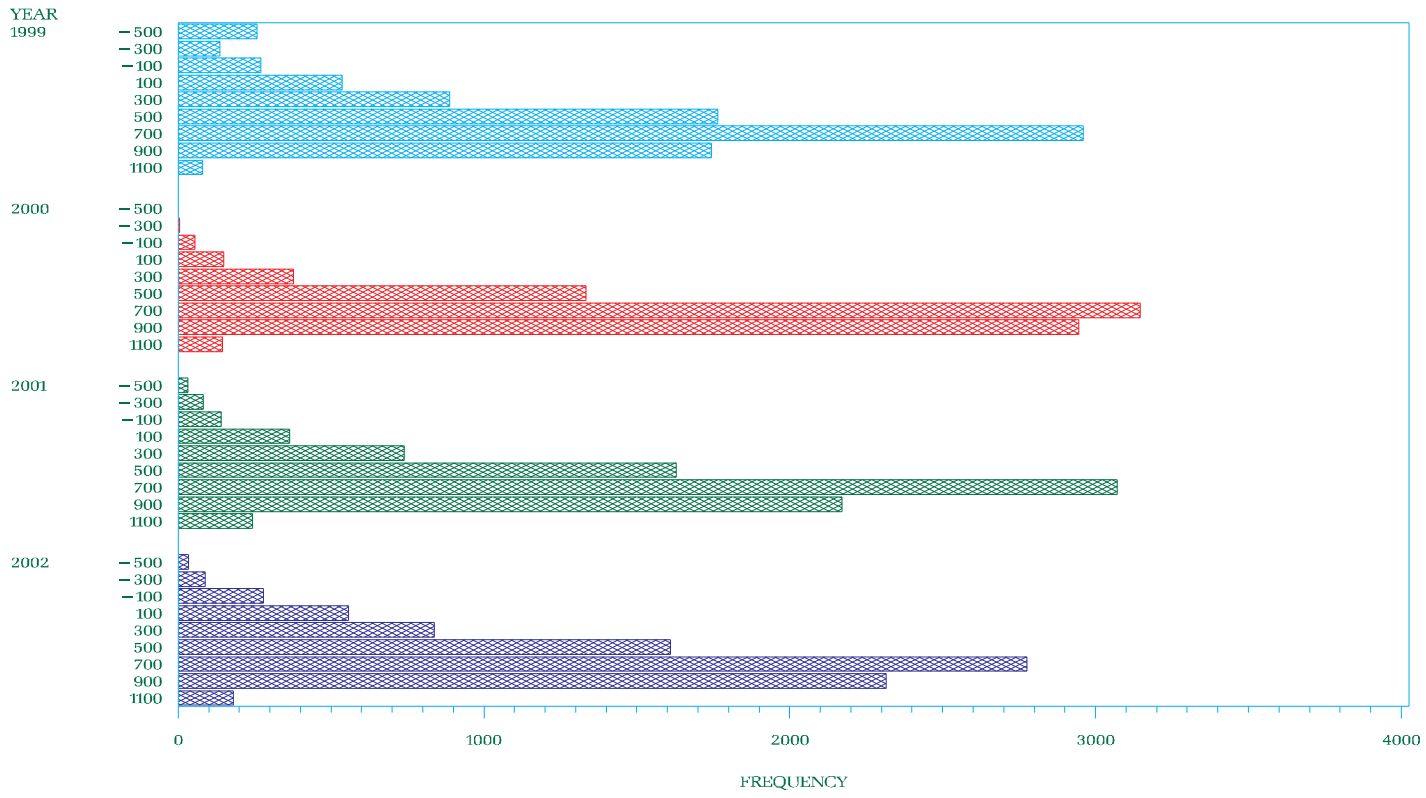
5018:BRANCHBURG – RAMAPO



Flow in (MW)	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-500	33	33	0.38	0.38
-300	88	121	1.01	1.39
-100	278	399	3.20	4.60
100	557	956	6.42	11.02
300	837	1793	9.65	20.67
500	1609	3402	18.55	39.22
700	2776	6178	32.00	71.22
900	2316	8494	26.70	97.91
1100	181	8675	2.09	100.00

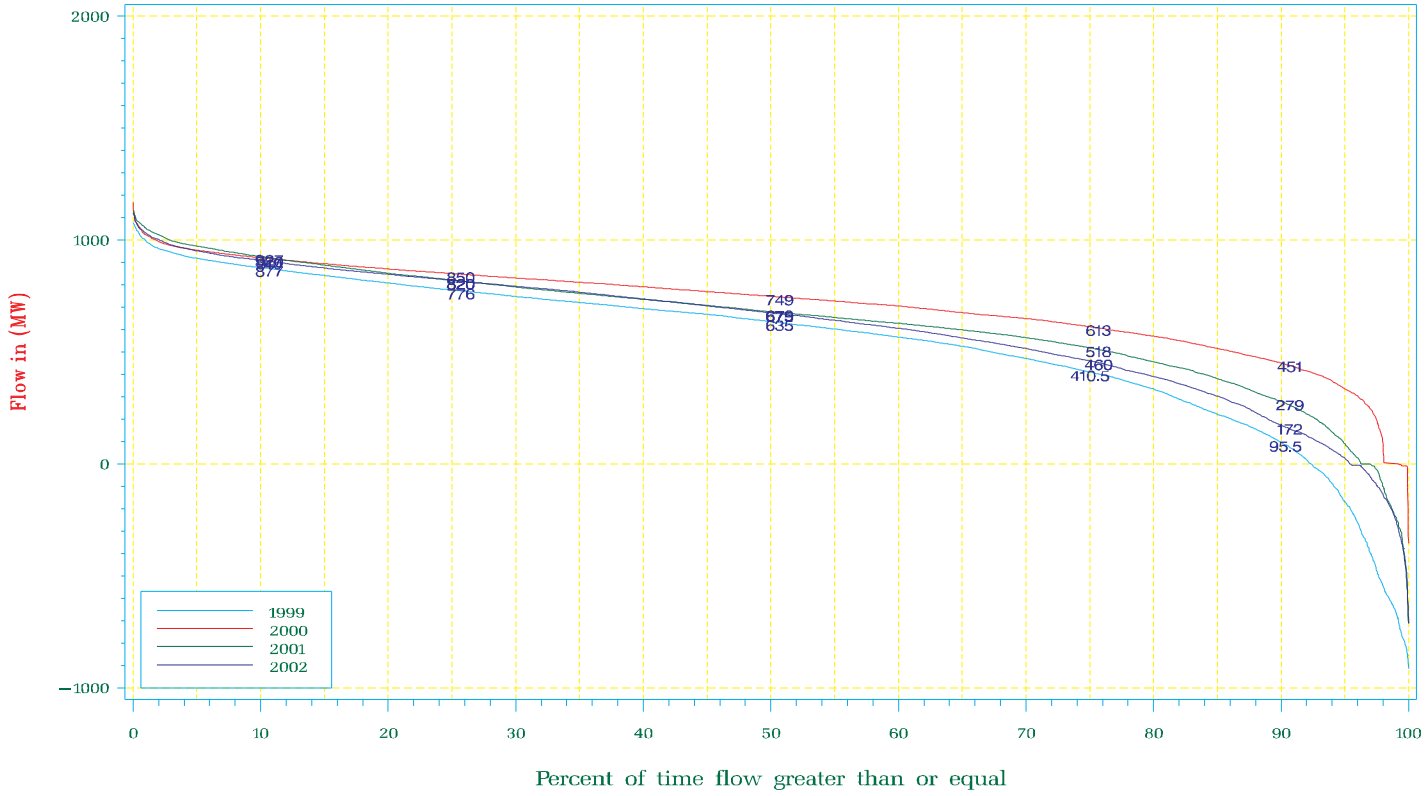
NYISO Frequency Interface Flow For January 1999 – December 2002

5018:BRANCHBURG – RAMAPO



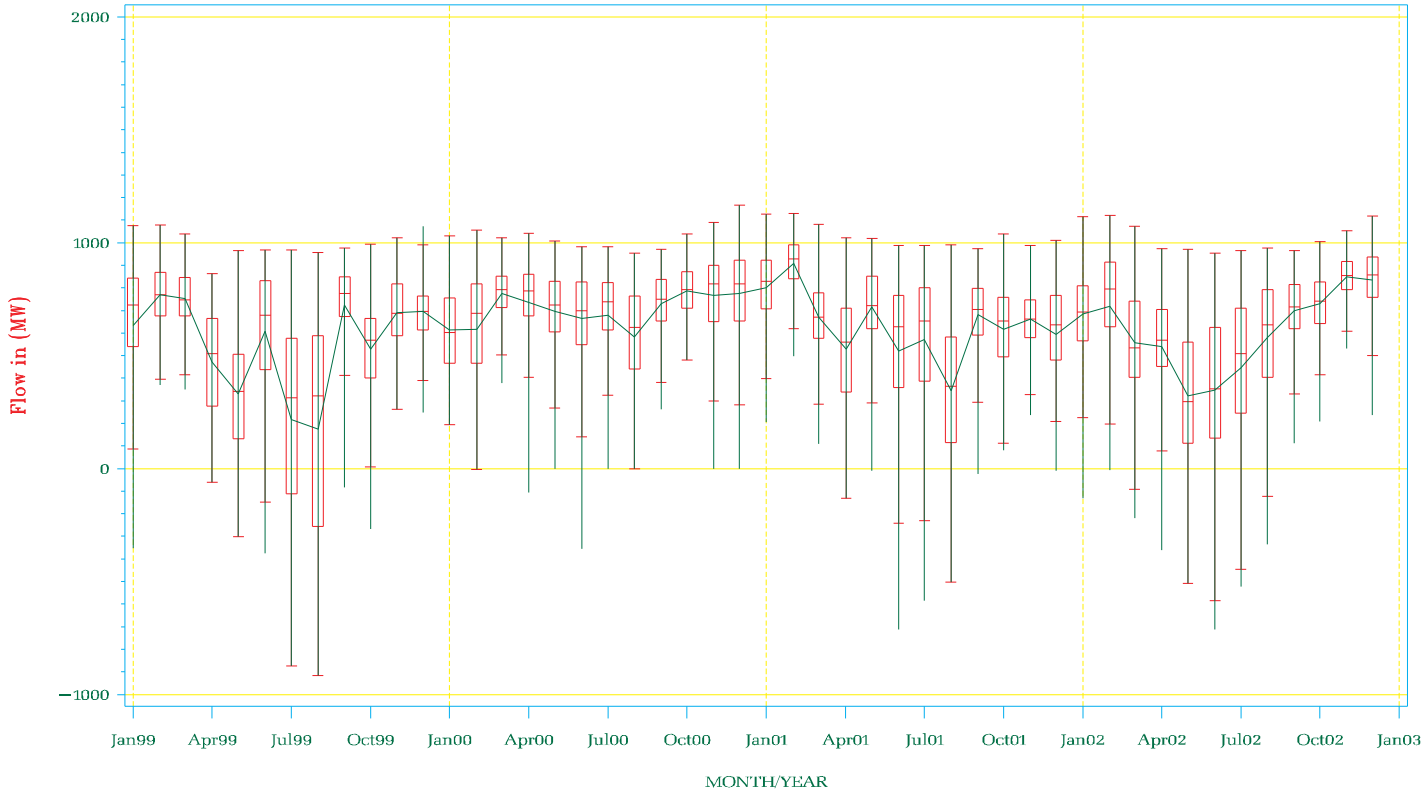
NYISO Percent of time Interface Flow For January 1999 – December 2002

5018:BRANCHBURG – RAMAPO



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

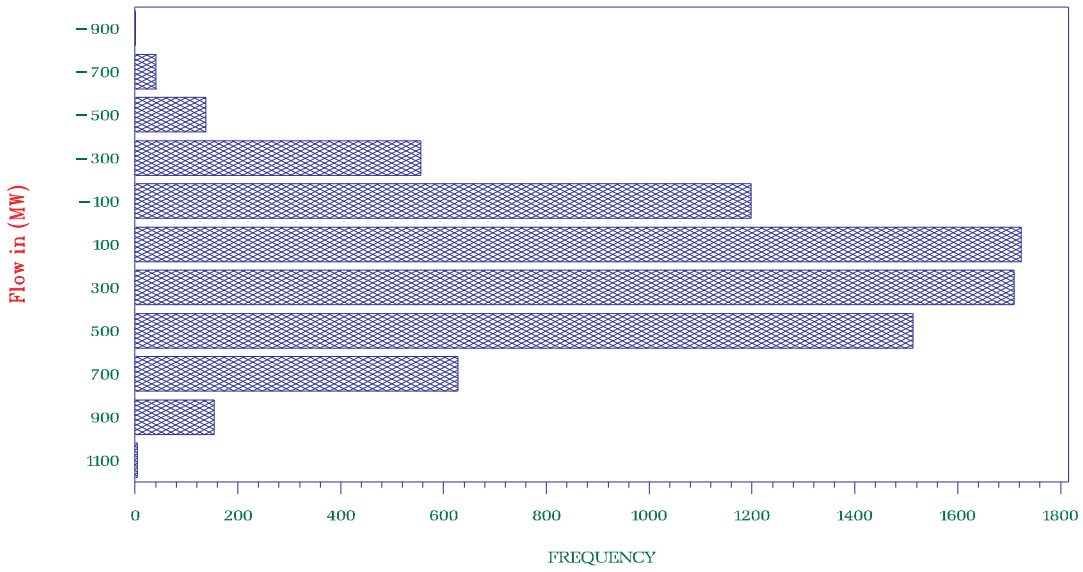
5018:BRANCHBURG – RAMAPO



NYISO Frequency Interface Flow For January – December 2002

Con Ed/PSEG PAR (JK/ABC) Imbalance

+ is toward PSEG

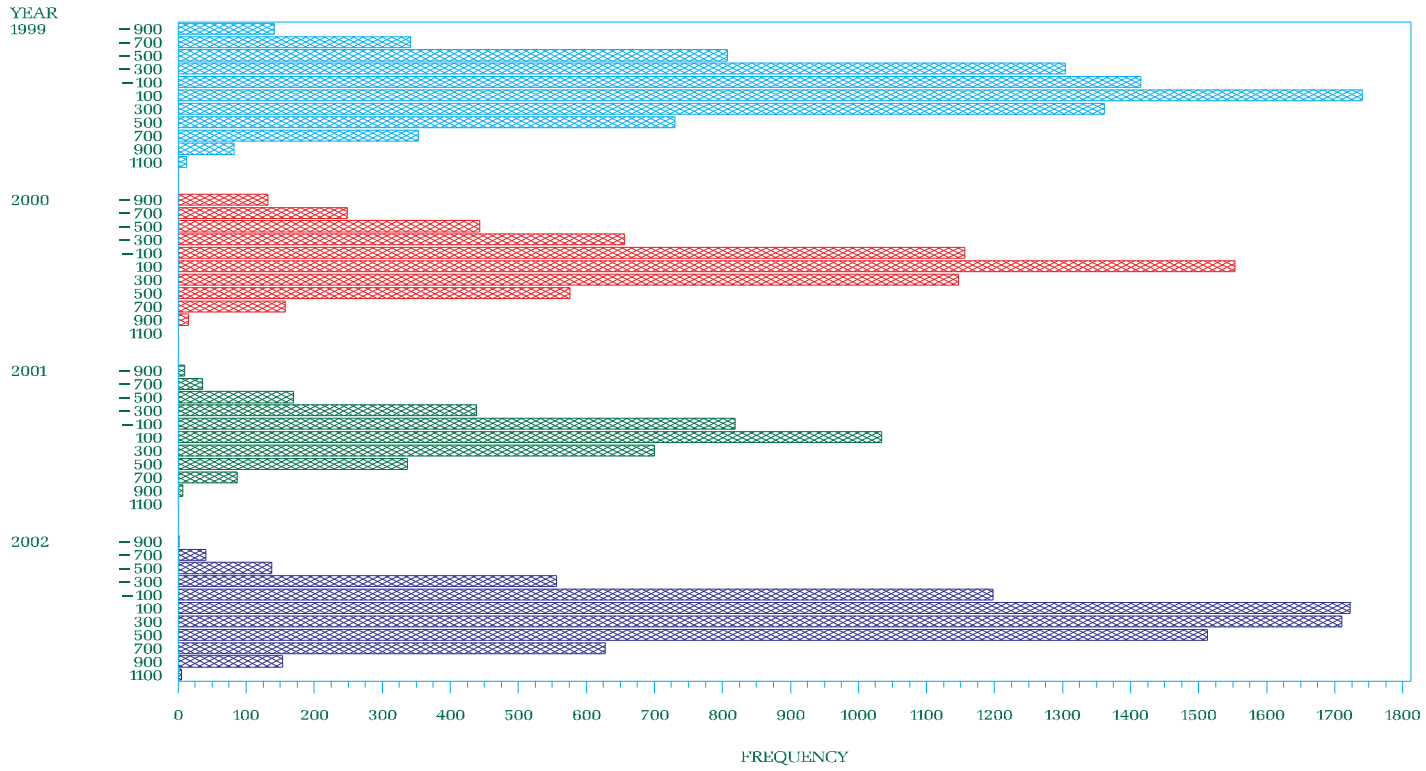


	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-900	1	1	0.01	0.01
-700	41	42	0.53	0.55
-500	138	180	1.80	2.35
-300	556	736	7.25	9.60
-100	1198	1934	15.63	25.22
100	1723	3657	22.47	47.70
300	1710	5367	22.30	70.00
500	1513	6880	19.73	89.74
700	628	7508	8.19	97.93
900	154	7662	2.01	99.93
1100	5	7667	0.07	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

Con Ed/PSEG PAR (JK/ABC) Imbalance

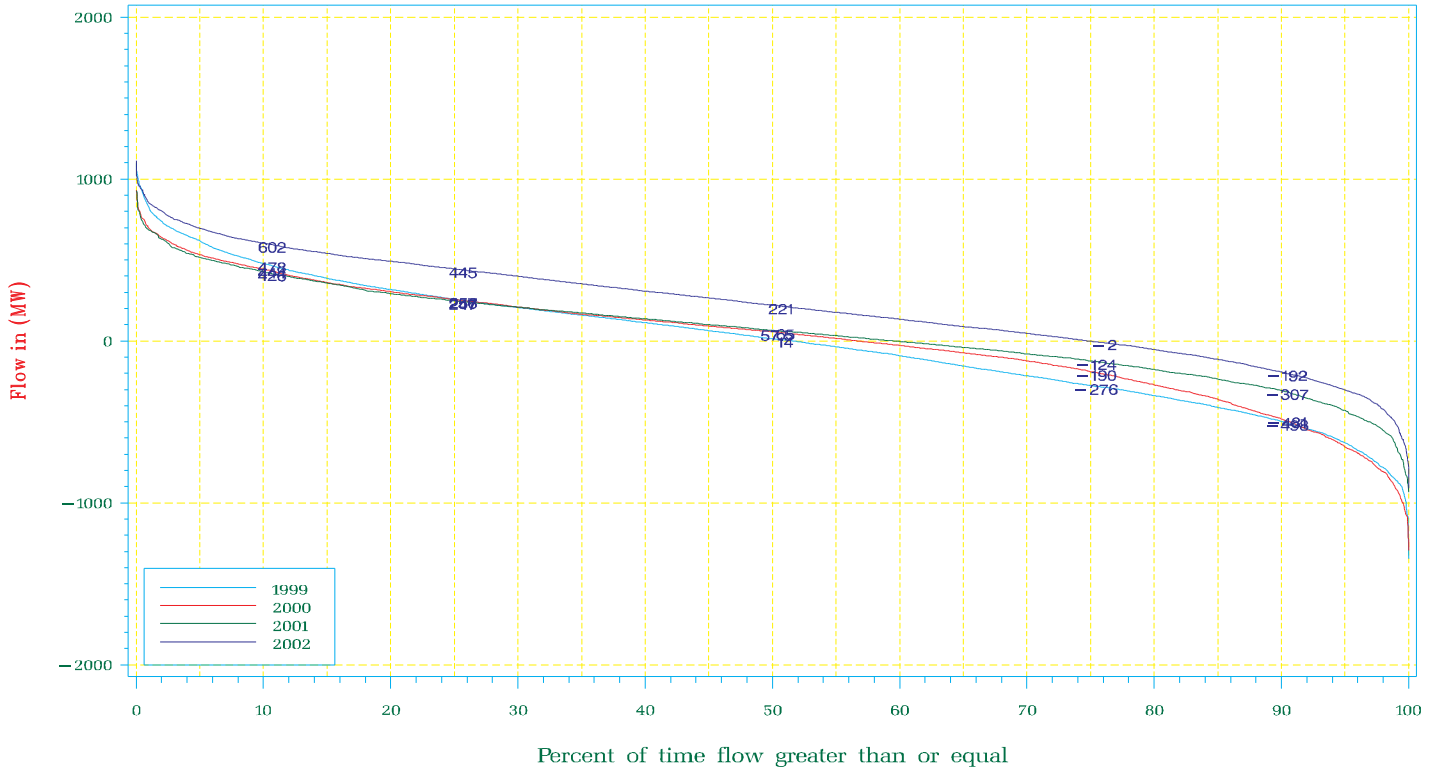
+ is toward PSEG



NYISO Percent of time Interface Flow For January 1999 – December 2002

Con Ed/PSEG PAR (JK/ABC) Imbalance

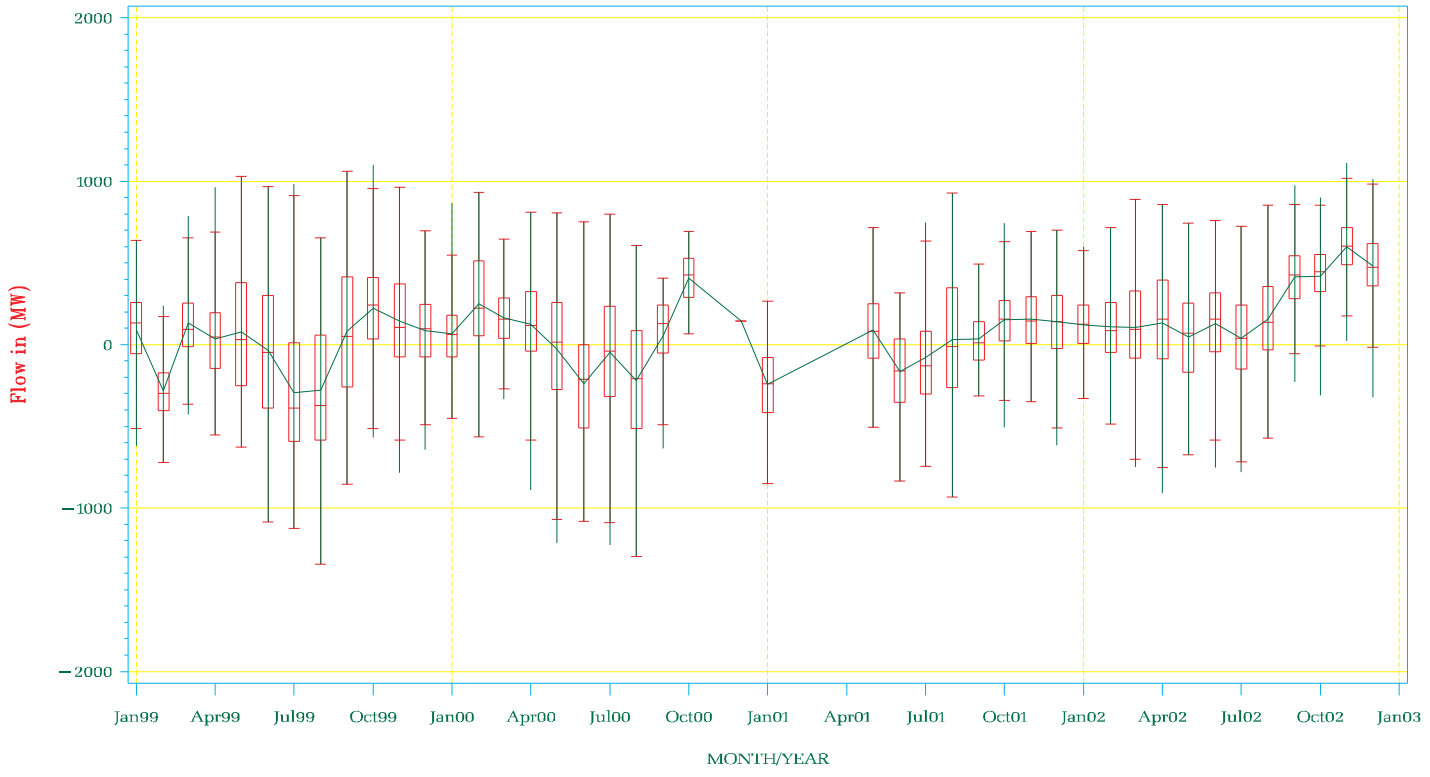
\+ is toward PSEG



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

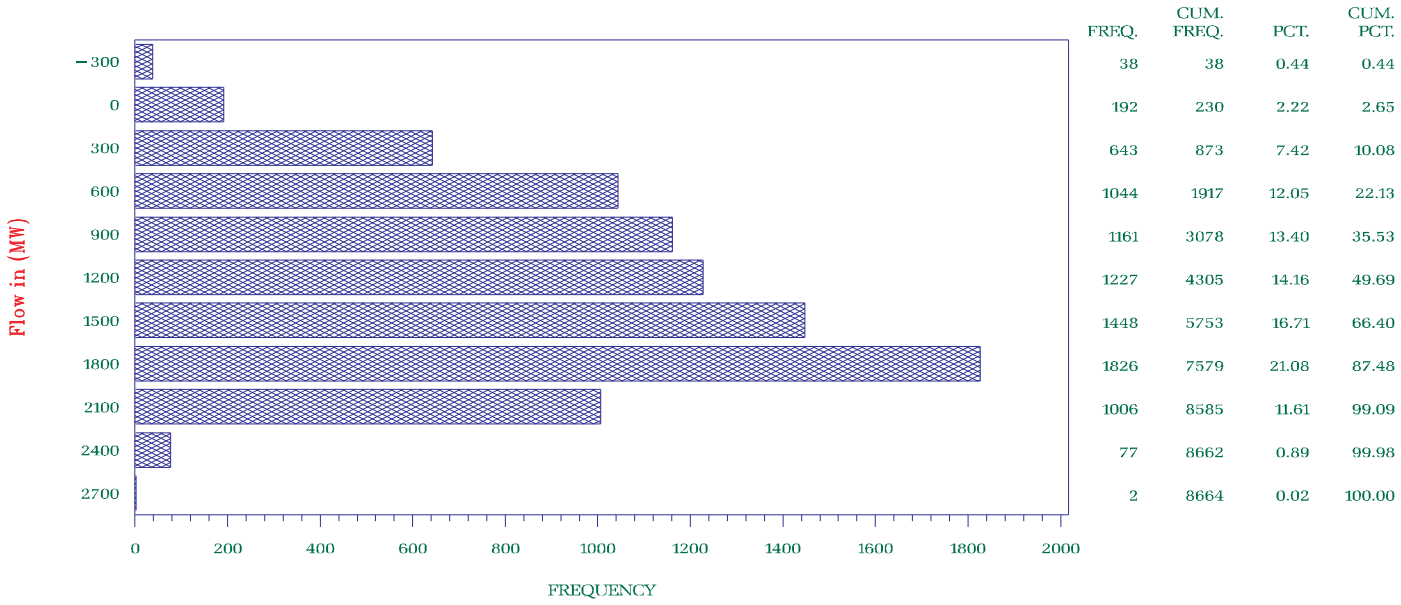
Con Ed/PSEG PAR (JK/ABC) Imbalance

\+ is toward PSEG



NYISO Frequency Interface Flow For January – December 2002

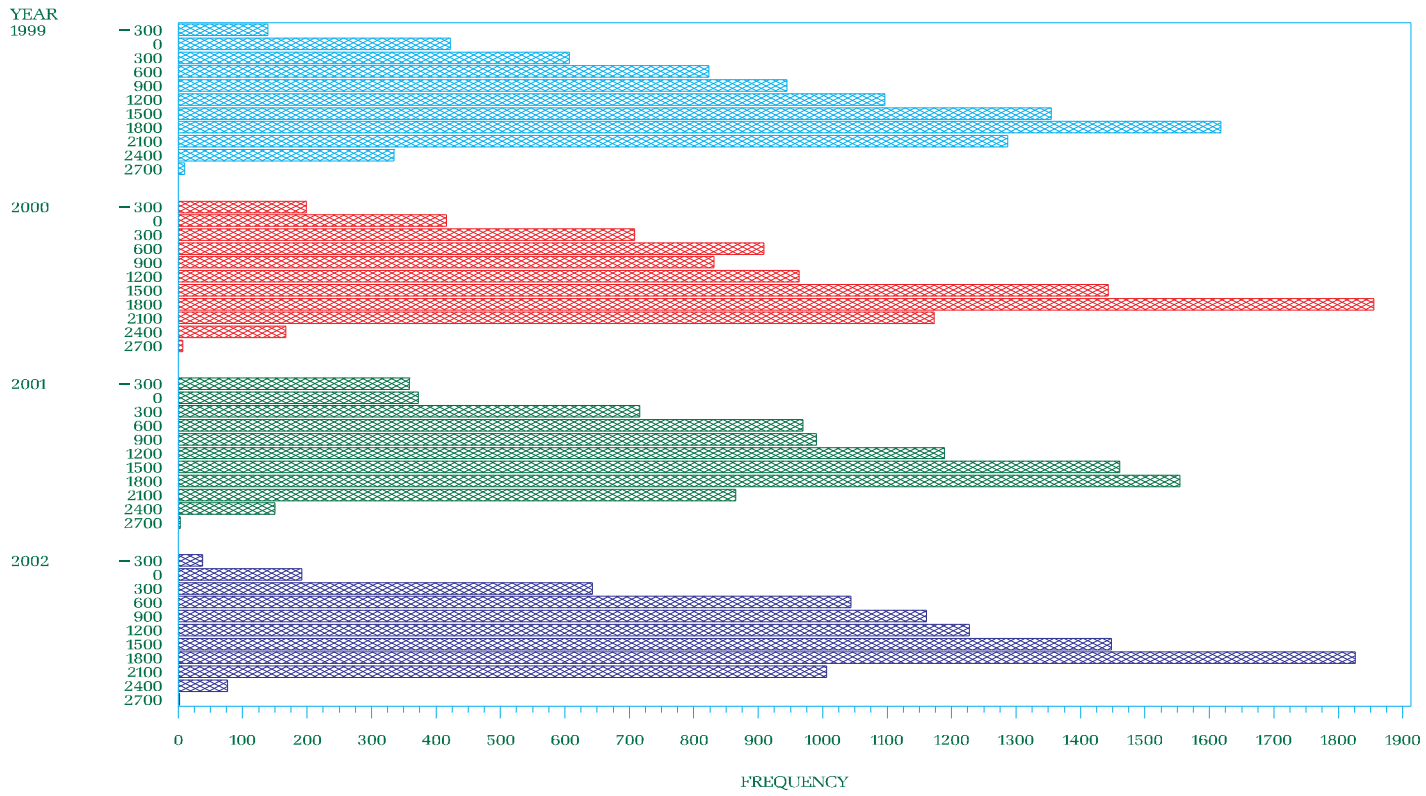
West NY Gen Export



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-300	38	38	0.44	0.44
0	192	230	2.22	2.65
300	643	873	7.42	10.08
600	1044	1917	12.05	22.13
900	1161	3078	13.40	35.53
1200	1227	4305	14.16	49.69
1500	1448	5753	16.71	66.40
1800	1826	7579	21.08	87.48
2100	1006	8585	11.61	99.09
2400	77	8662	0.89	99.98
2700	2	8664	0.02	100.00

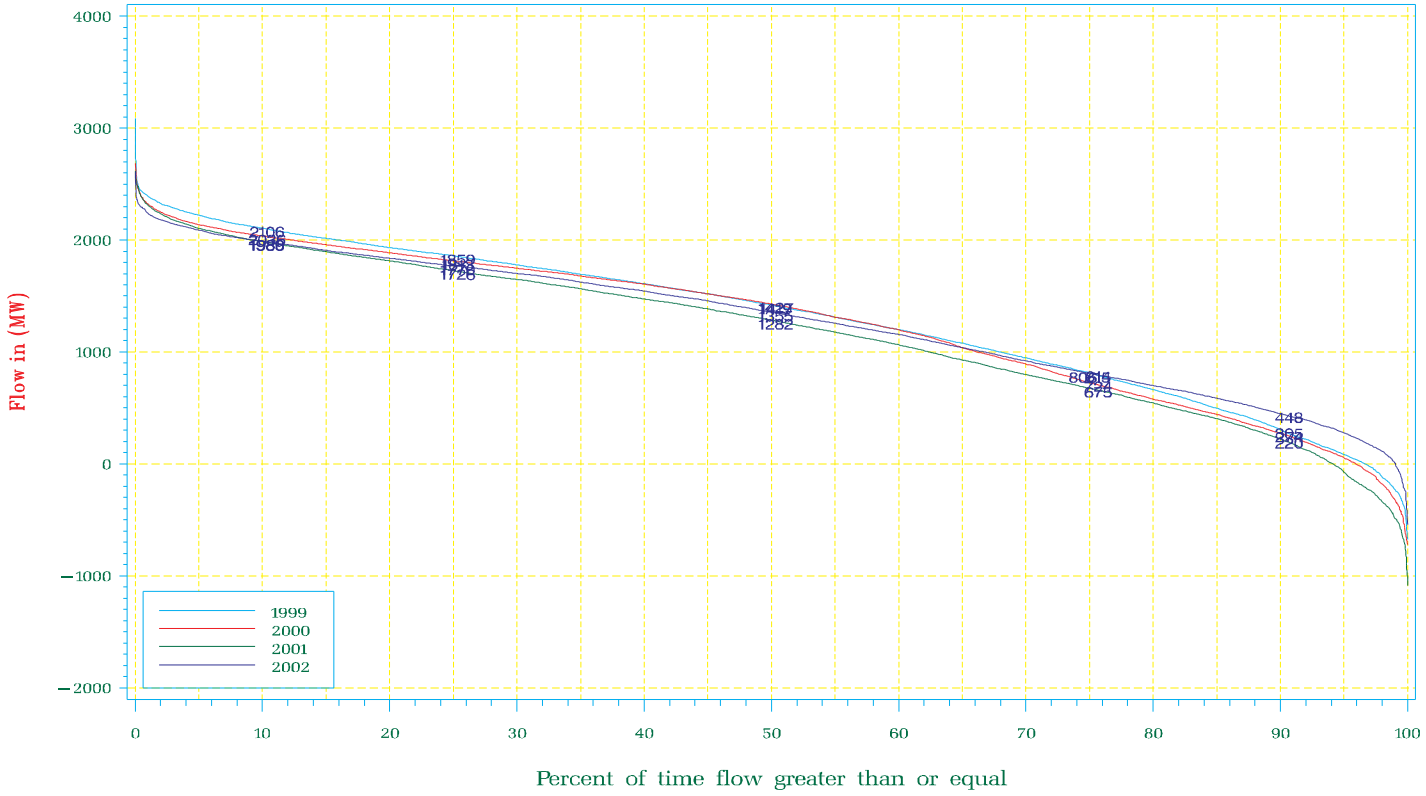
NYISO Frequency Interface Flow For January 1999 – December 2002

West NY Gen Export



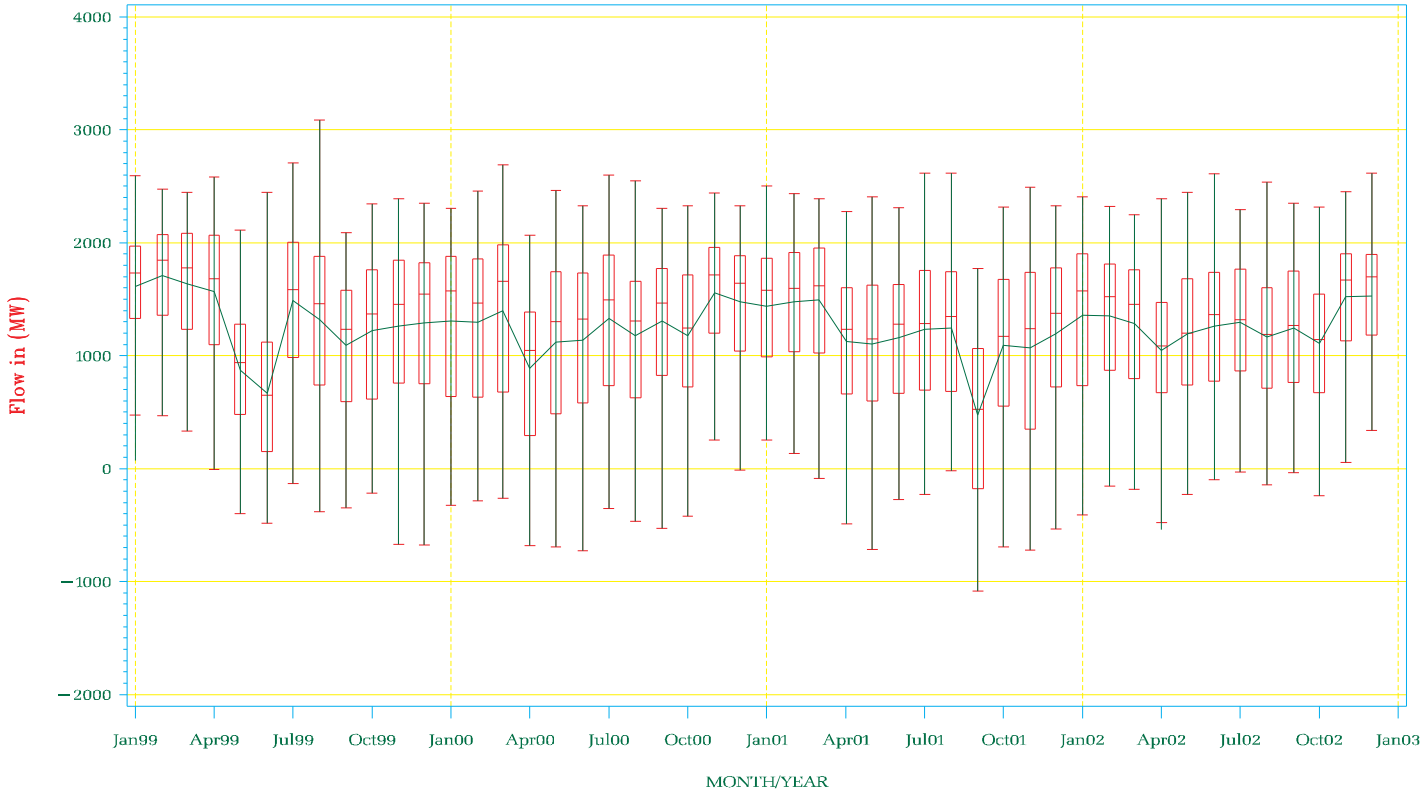
NYISO Percent of time Interface Flow For January 1999 – December 2002

West NY Gen Export



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

West NY Gen Export



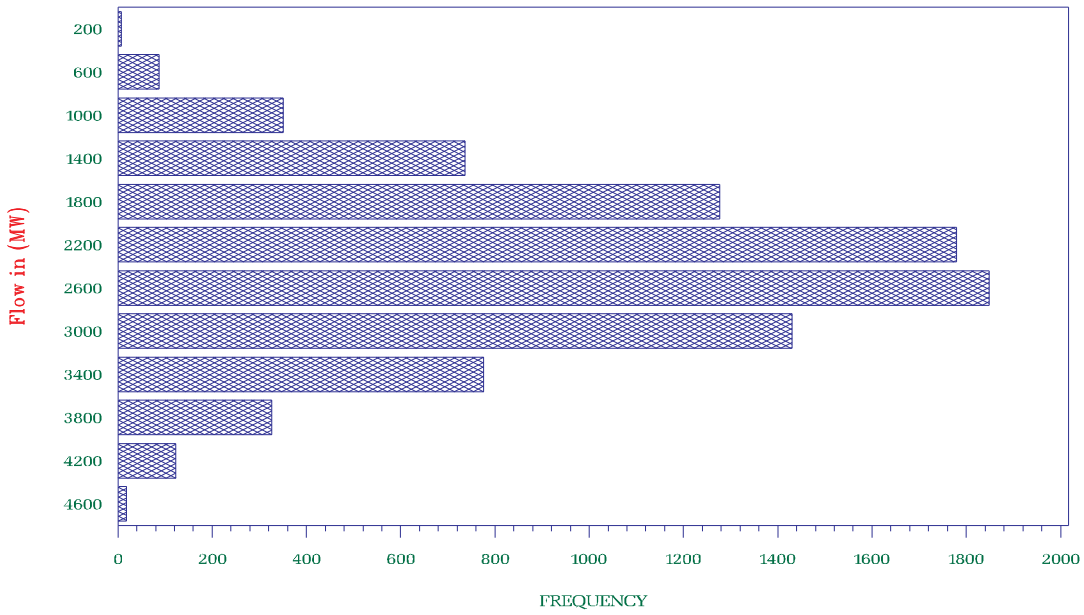
This page is intentionally left blank.

Appendix B – Margins to Limits

TABLE OF CONTENTS

NYISO Frequency Interface Flow For January – December 2002

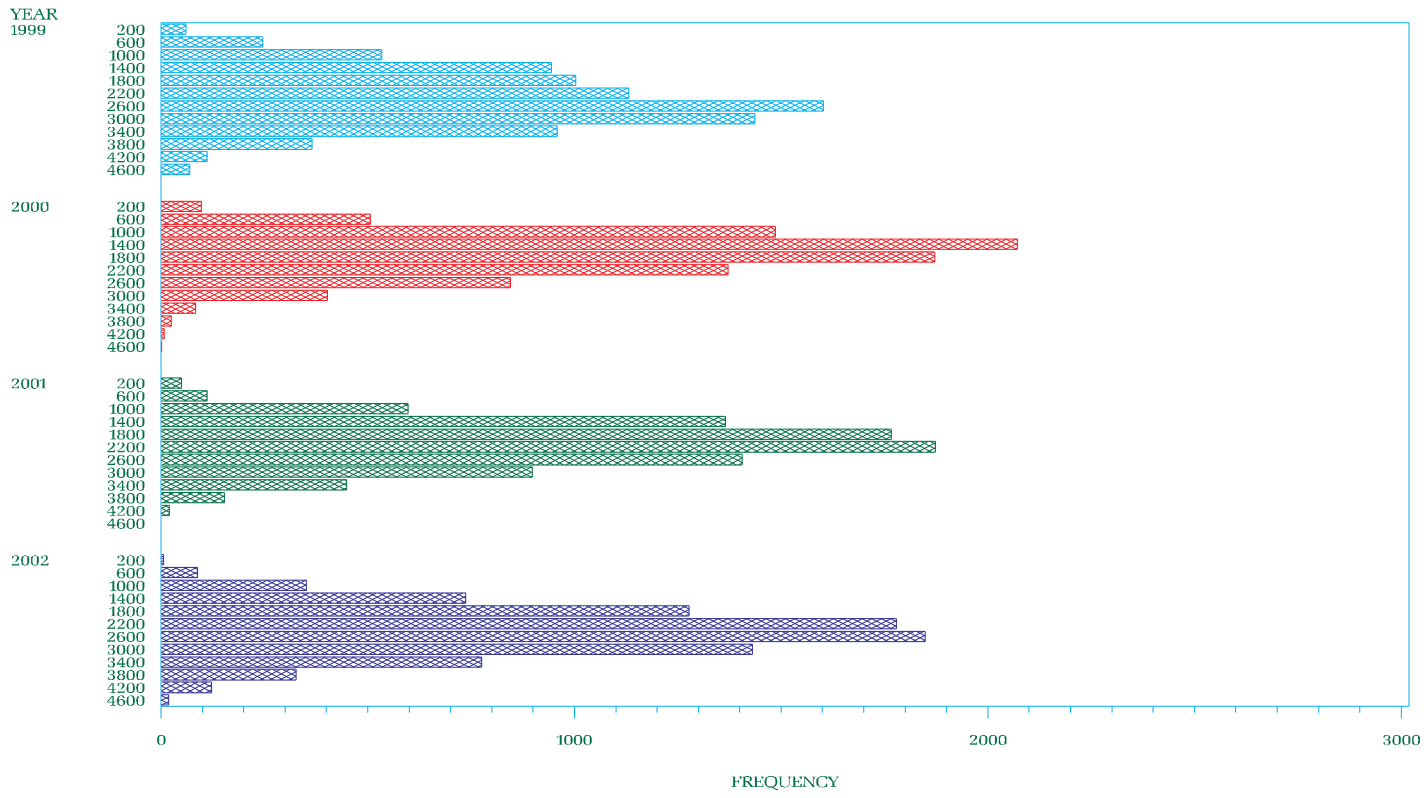
Margin to Total East Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
200	7	7	0.08	0.08
600	88	95	1.00	1.08
1000	351	446	4.01	5.09
1400	737	1183	8.41	13.50
1800	1277	2460	14.58	28.08
2200	1779	4239	20.31	48.39
2600	1848	6087	21.10	69.49
3000	1430	7517	16.32	85.81
3400	776	8293	8.86	94.67
3800	326	8619	3.72	98.39
4200	123	8742	1.40	99.79
4600	18	8760	0.21	100.00

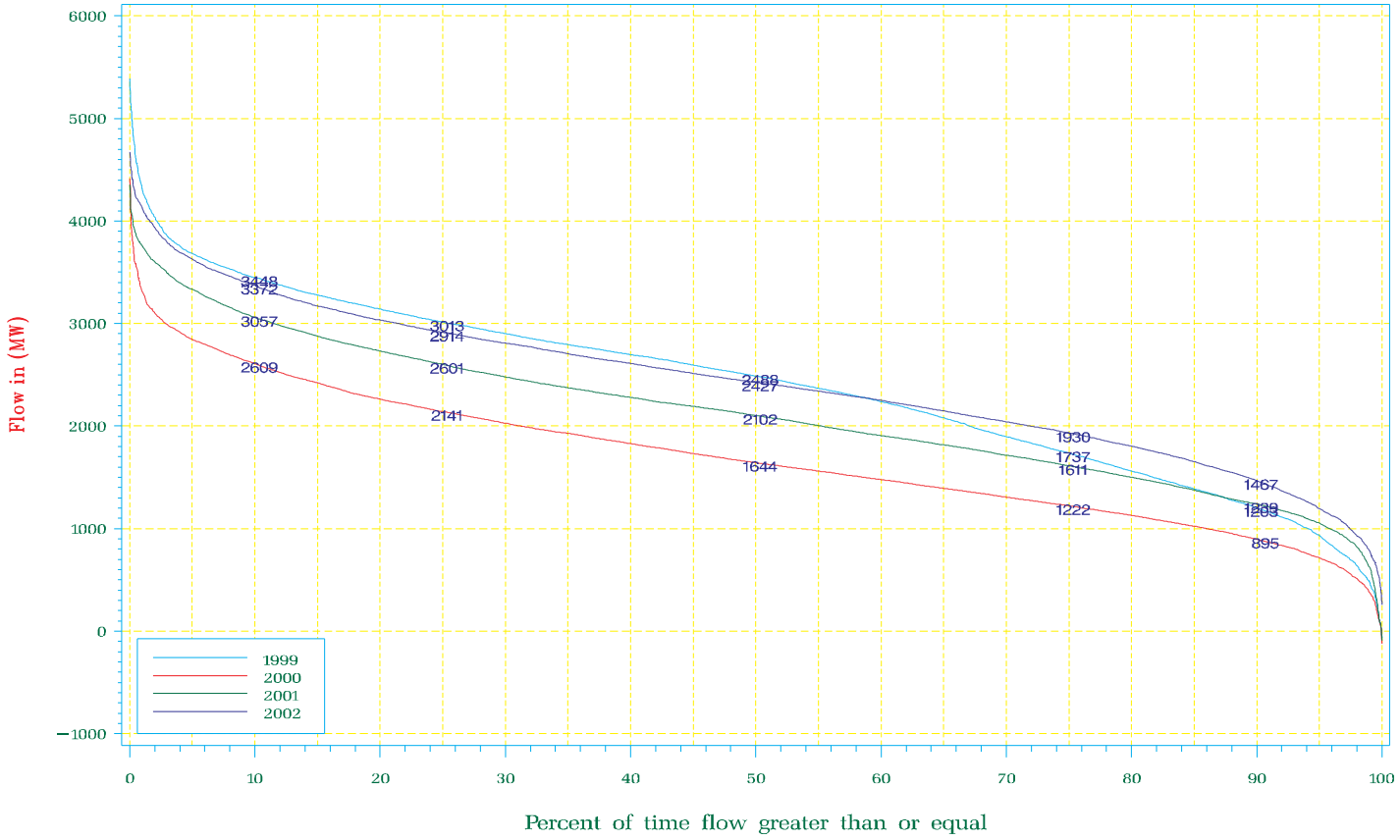
NYISO Frequency Interface Flow For January 1999 – December 2002

Margin to Total East Limit



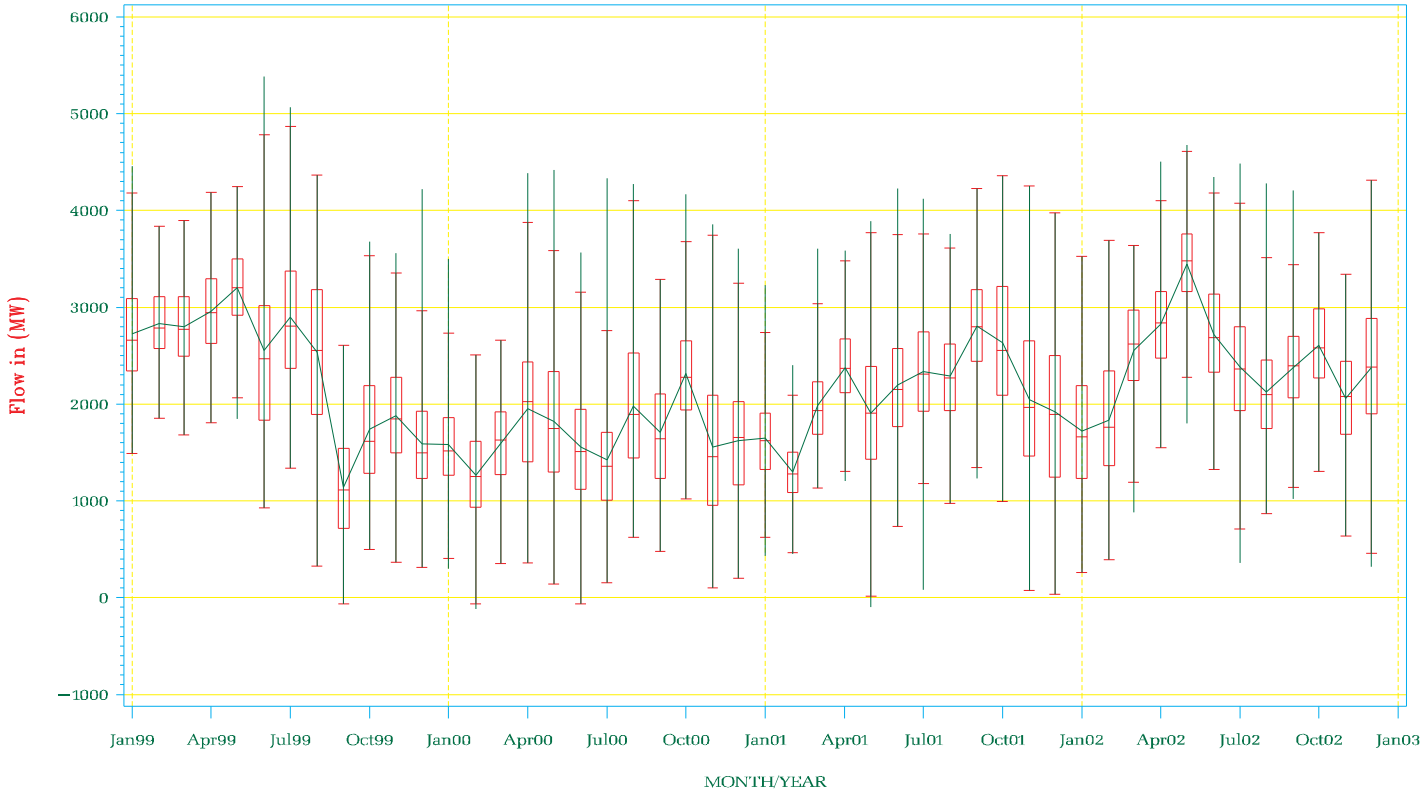
NYISO Percent of time Interface Flow For January 1999 – December 2002

Margin to Total East Limit



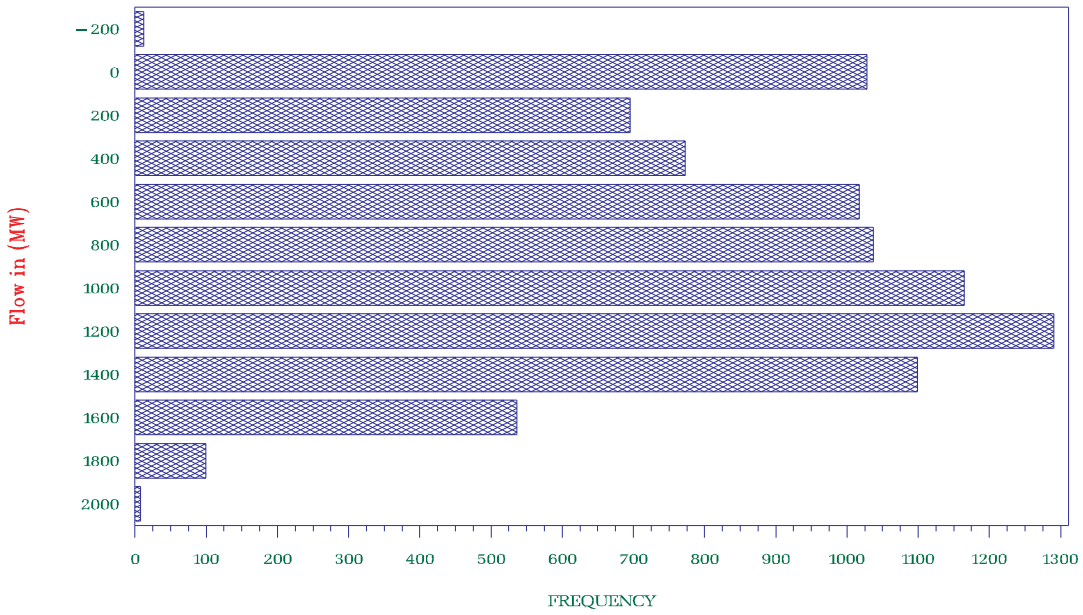
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Margin to Total East Limit



NYISO Frequency Interface Flow For January – December 2002

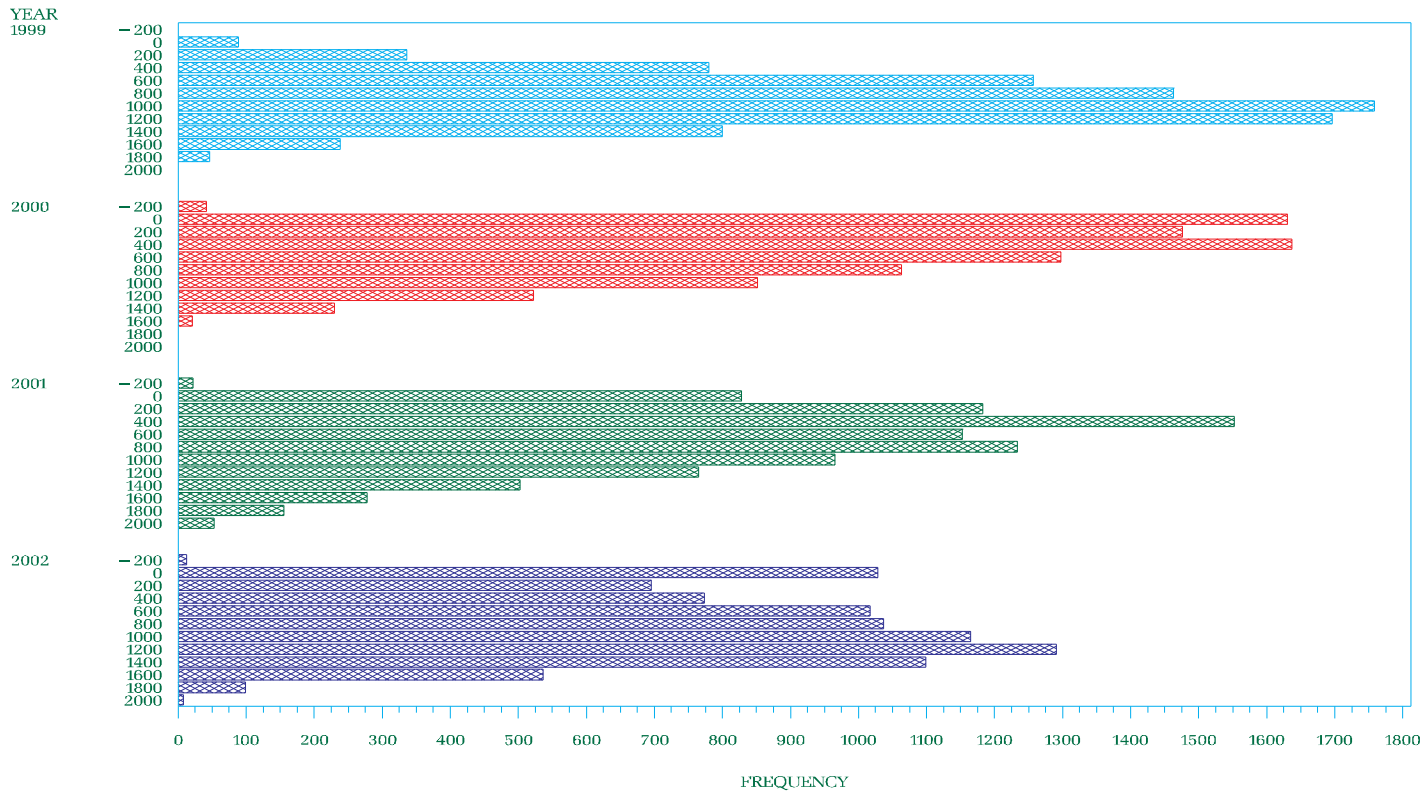
Margin to Central East Stability Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-200	12	12	0.14	0.14
0	1028	1040	11.74	11.87
200	695	1735	7.93	19.81
400	773	2508	8.82	28.63
600	1017	3525	11.61	40.24
800	1037	4562	11.84	52.08
1000	1165	5727	13.30	65.38
1200	1291	7018	14.74	80.11
1400	1099	8117	12.55	92.66
1600	536	8653	6.12	98.78
1800	99	8752	1.13	99.91
2000	8	8760	0.09	100.00

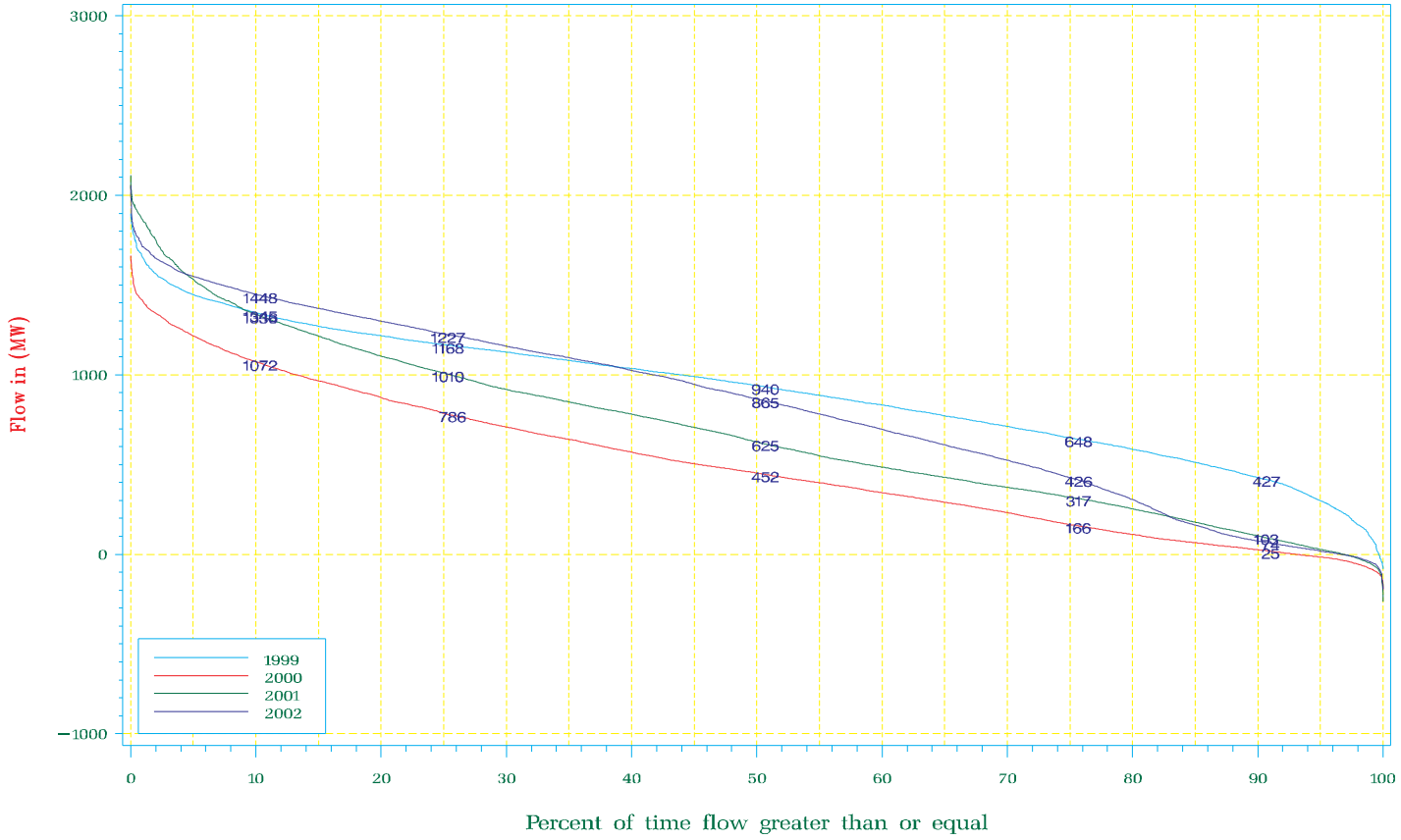
NYISO Frequency Interface Flow For January 1999 – December 2002

Margin to Central East Stability Limit



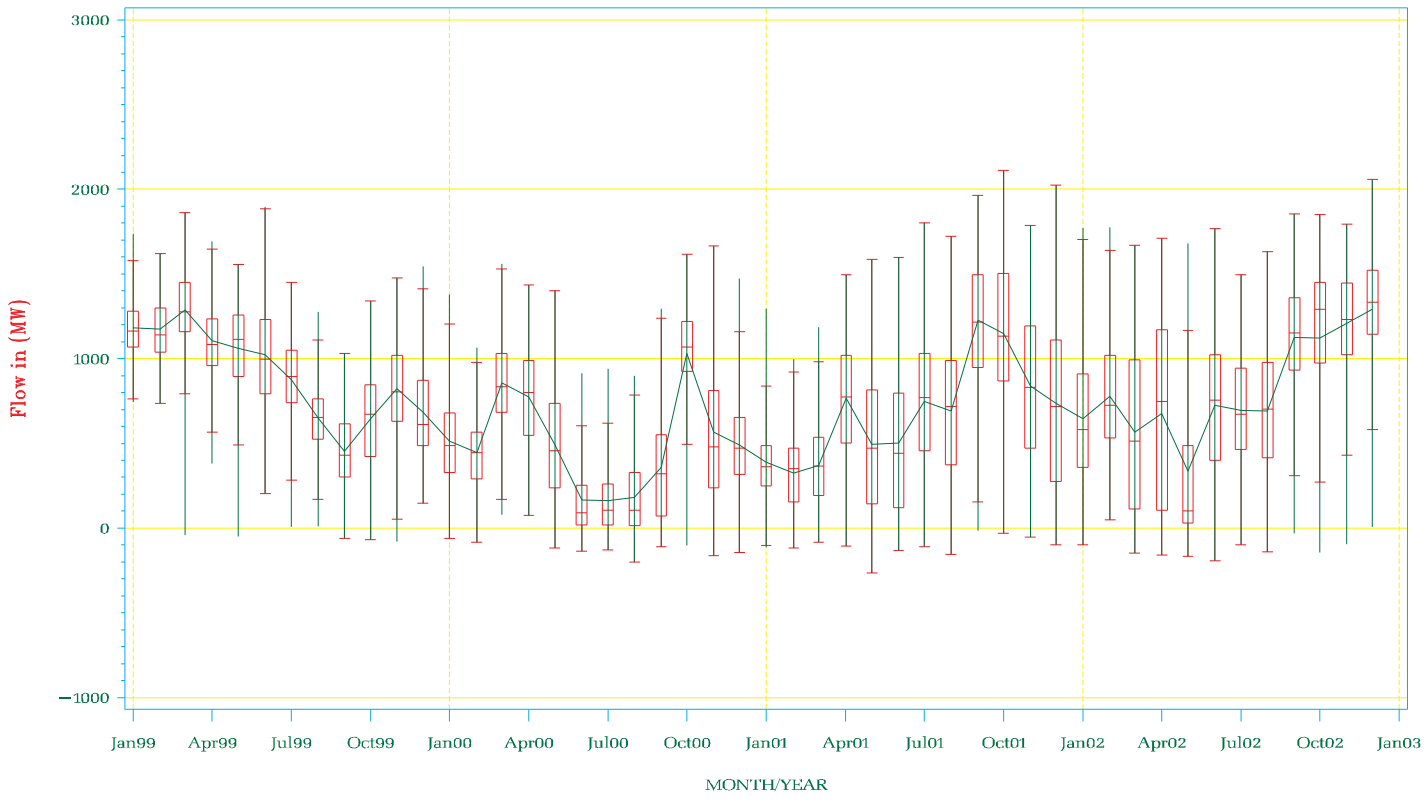
NYISO Percent of time Interface Flow For January 1999 – December 2002

Margin to Central East Stability Limit



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

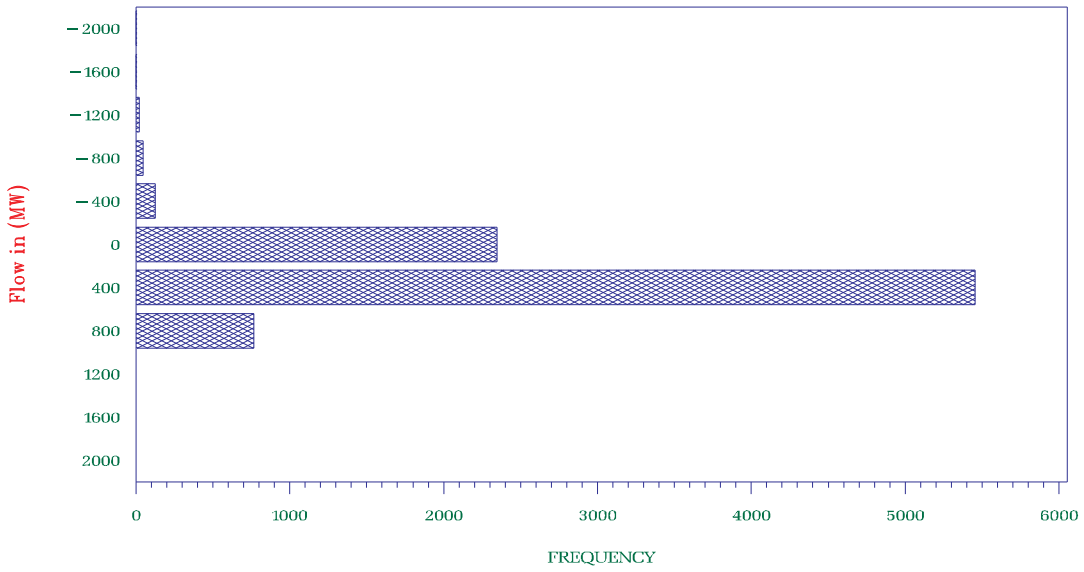
Margin to Central East Stability Limit



NYISO Frequency Interface Flow For January – December 2002

Post–Contingency Margin to Central East Limit

Minimum of 3 Most Limiting Voltage Collapse Limits

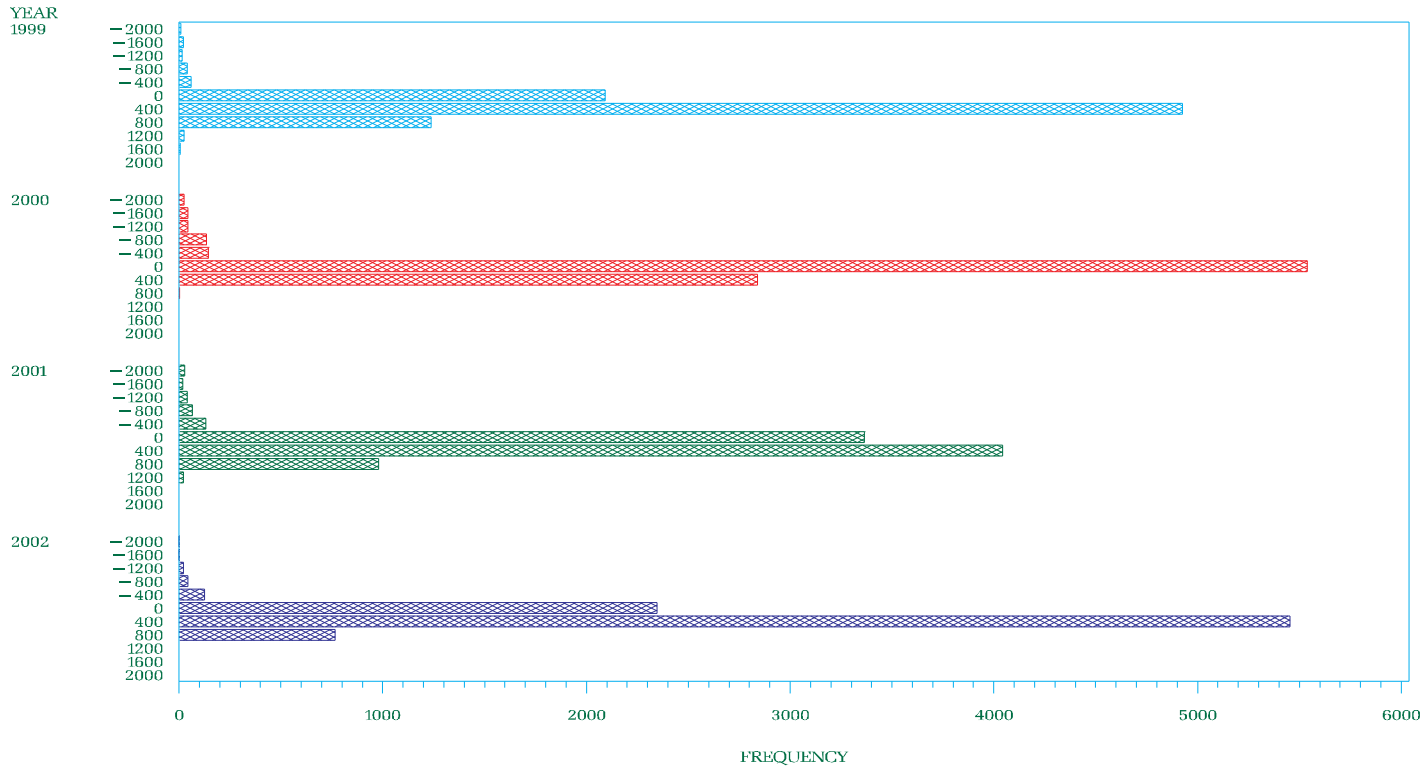


	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
−2000	1	1	0.01	0.01
−1600	1	2	0.01	0.02
−1200	20	22	0.23	0.25
−800	45	67	0.51	0.76
−400	124	191	1.42	2.18
0	2346	2537	26.78	28.96
400	5455	7992	62.28	91.24
800	767	8759	8.76	100.00
1200	0	8759	0.00	100.00
1600	0	8759	0.00	100.00
2000	0	8759	0.00	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

Post–Contingency Margin to Central East Limit

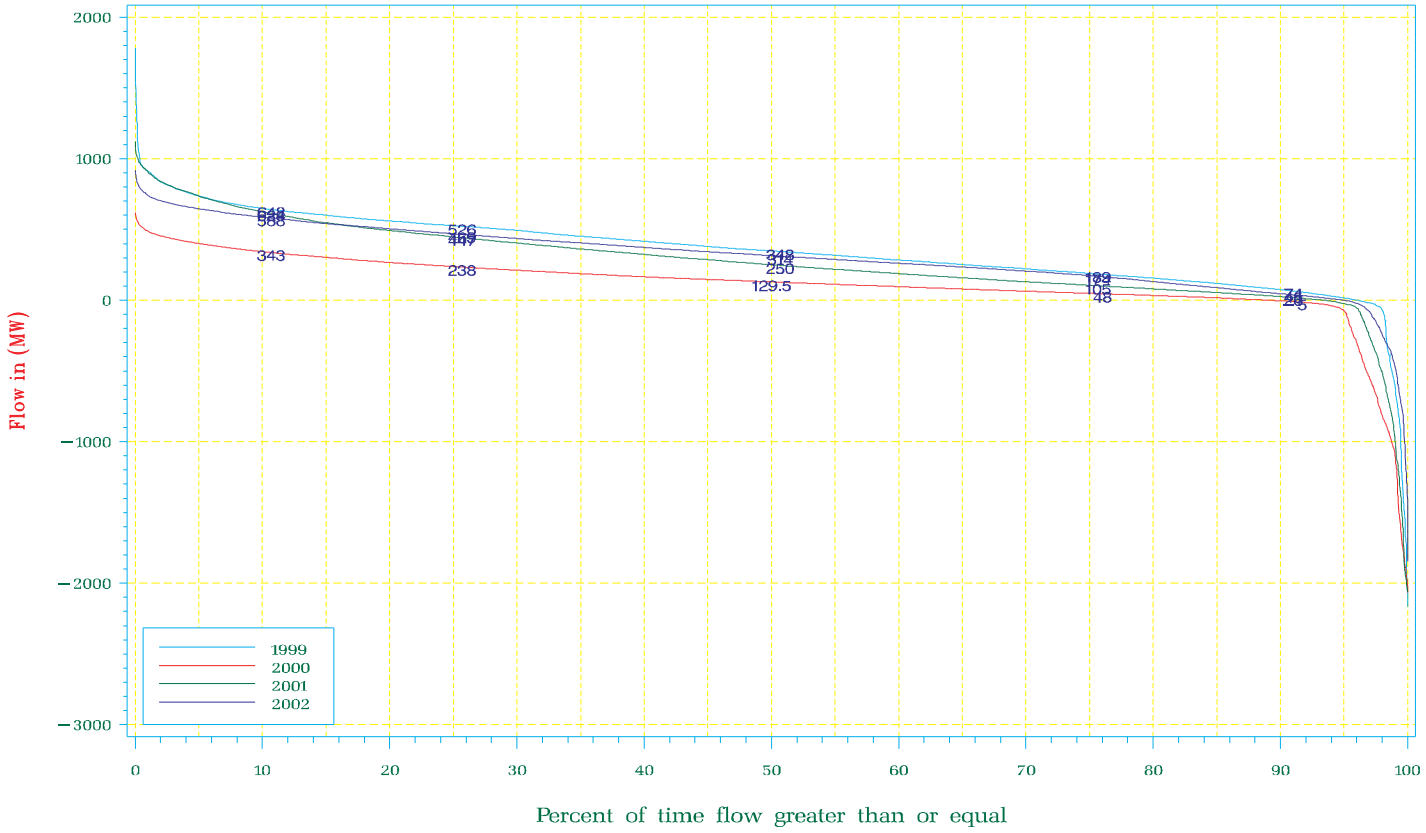
Minimum of 3 Most Limiting Voltage Collapse Limits



NYISO Percent of time Interface Flow For January 1999 – December 2002

Post–Contingency Margin to Central East Limit

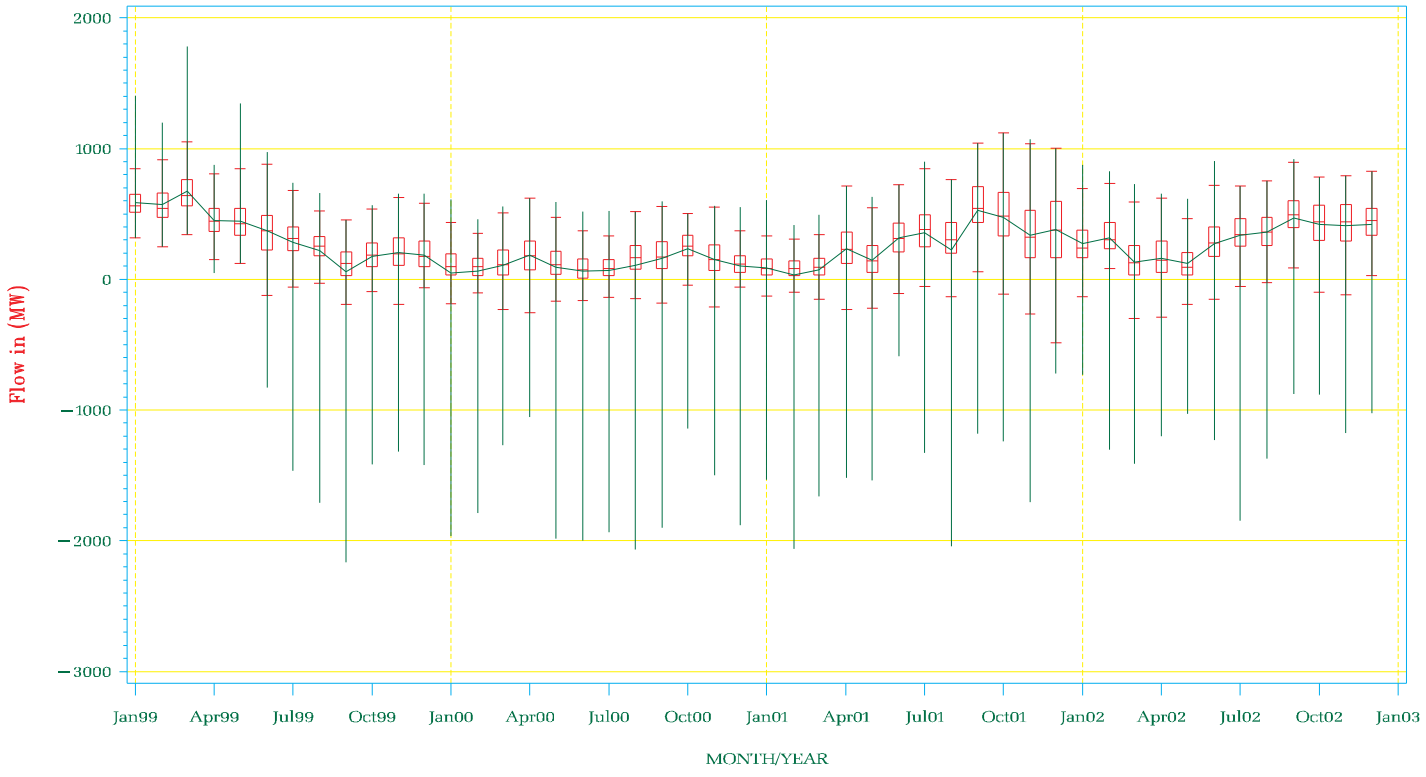
Minimum of 3 Most Limiting Voltage Collapse Limits



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

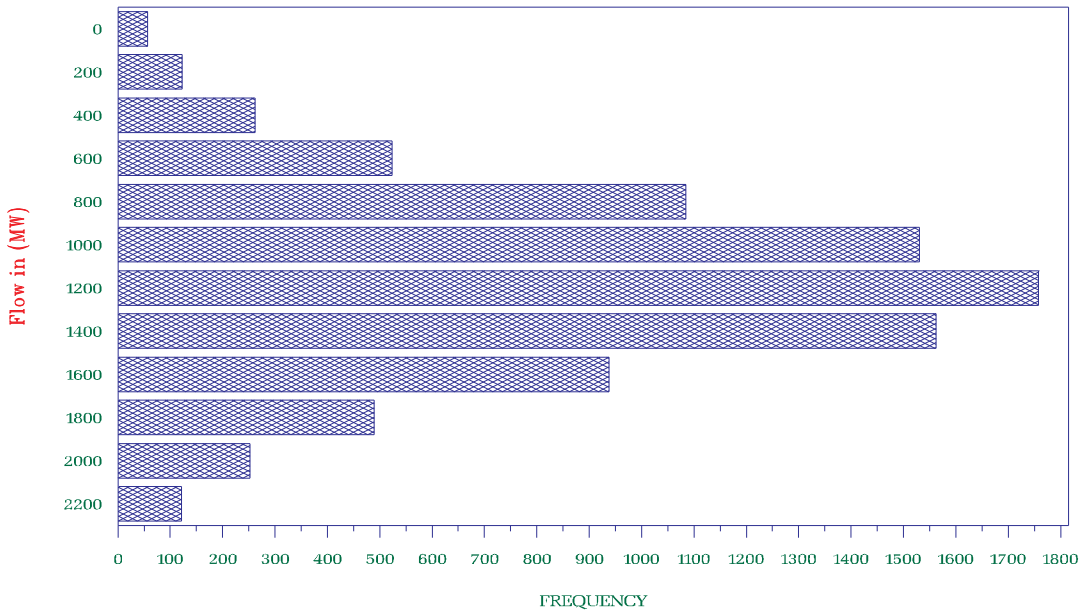
Post–Contingency Margin to Central East Limit

Minimum of 3 Most Limiting Voltage Collapse Limits



NYISO Frequency Interface Flow For January – December 2002

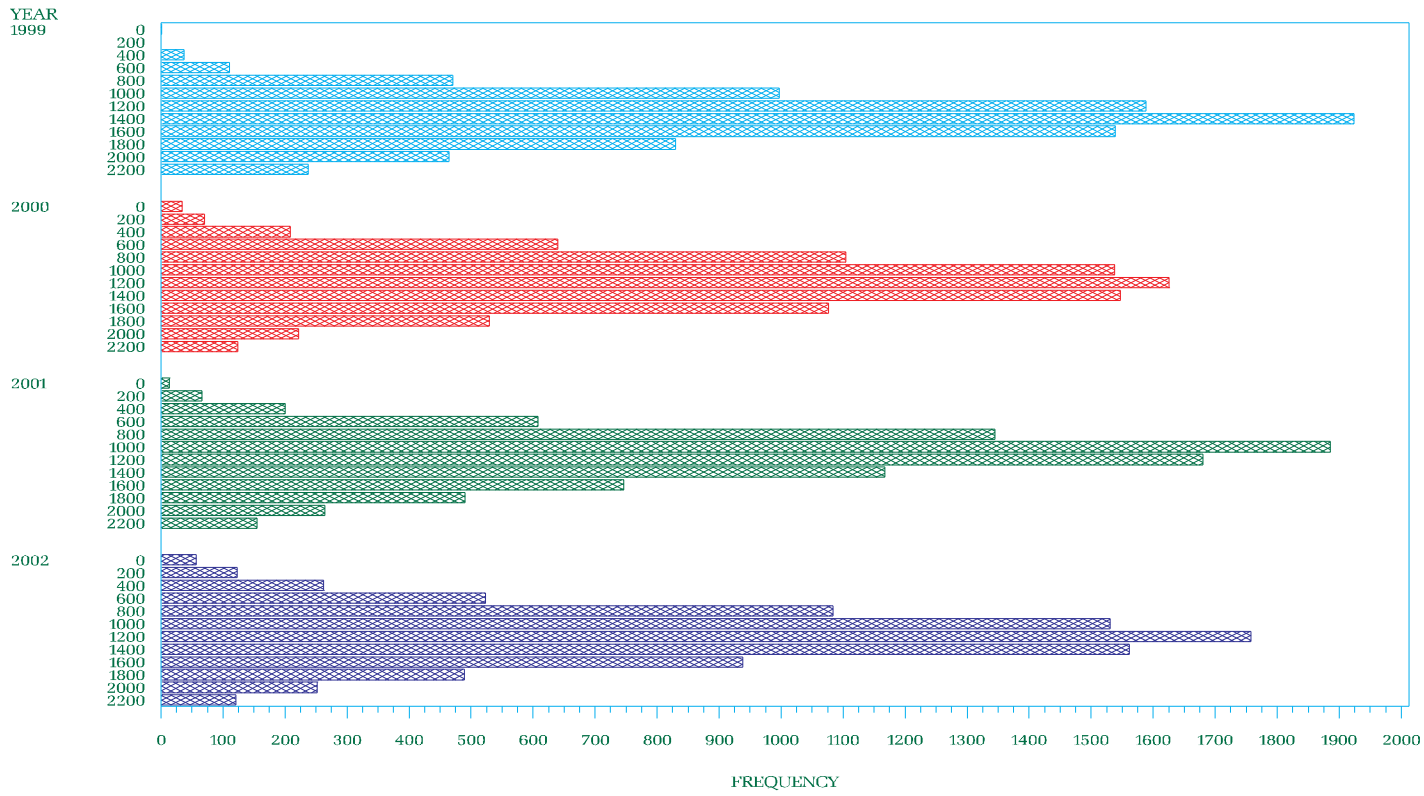
Margin to West Central Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
0	57	57	0.66	0.66
200	123	180	1.41	2.07
400	262	442	3.01	5.08
600	523	965	6.01	11.09
800	1084	2049	12.46	23.55
1000	1531	3580	17.60	41.15
1200	1758	5338	20.21	61.36
1400	1562	6900	17.95	79.31
1600	938	7838	10.78	90.09
1800	489	8327	5.62	95.71
2000	252	8579	2.90	98.61
2200	121	8700	1.39	100.00

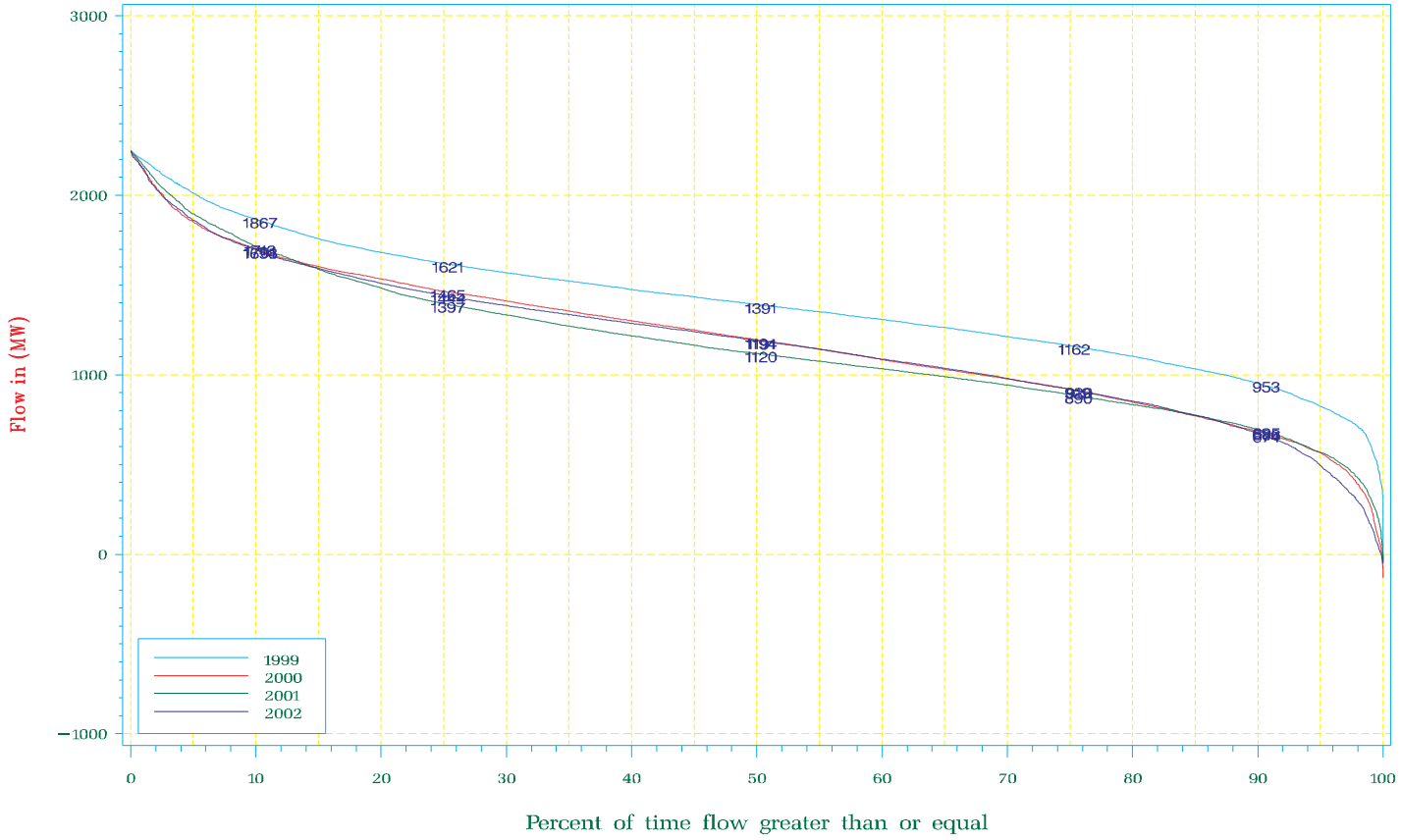
NYISO Frequency Interface Flow For January 1999 – December 2002

Margin to West Central Limit



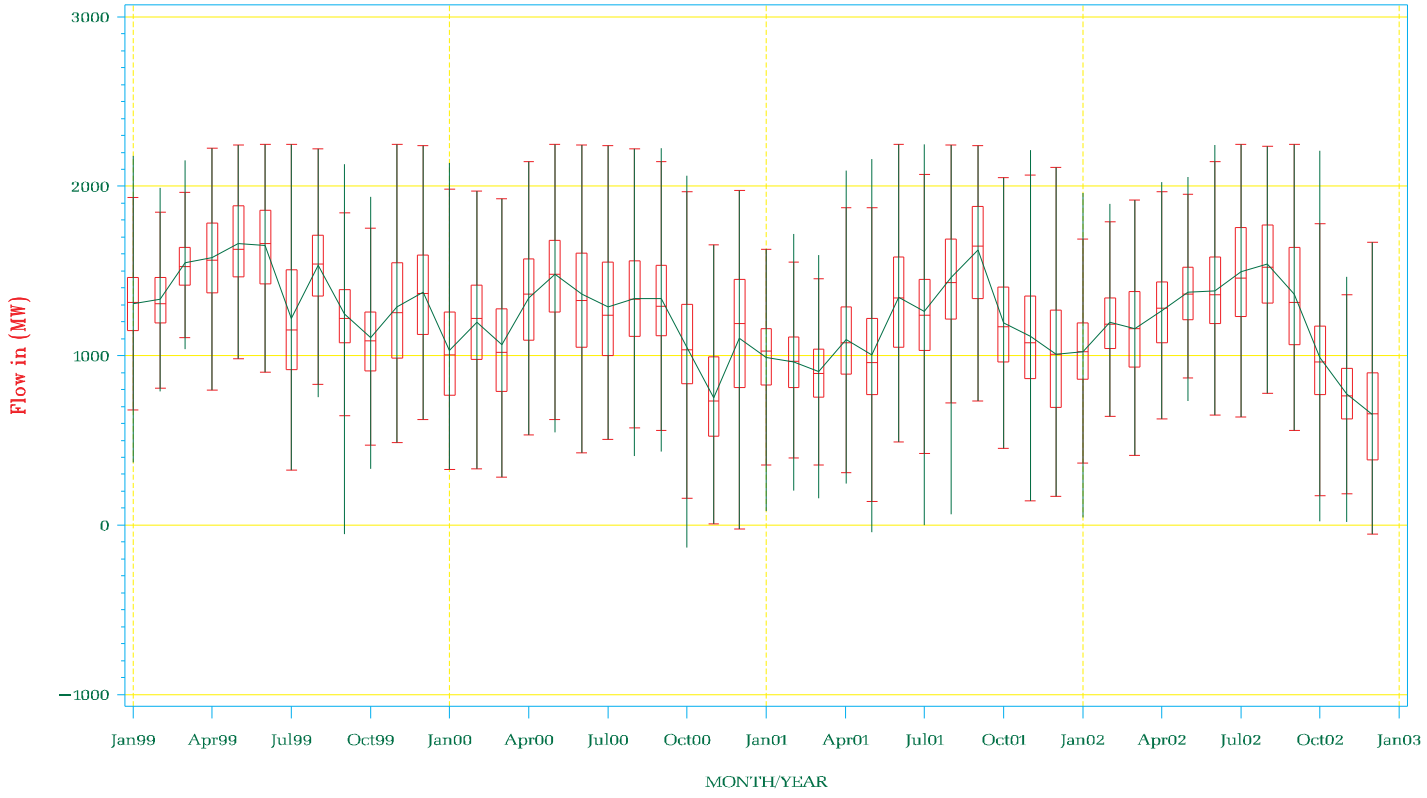
NYISO Percent of time Interface Flow For January 1999 – December 2002

Margin to West Central Limit



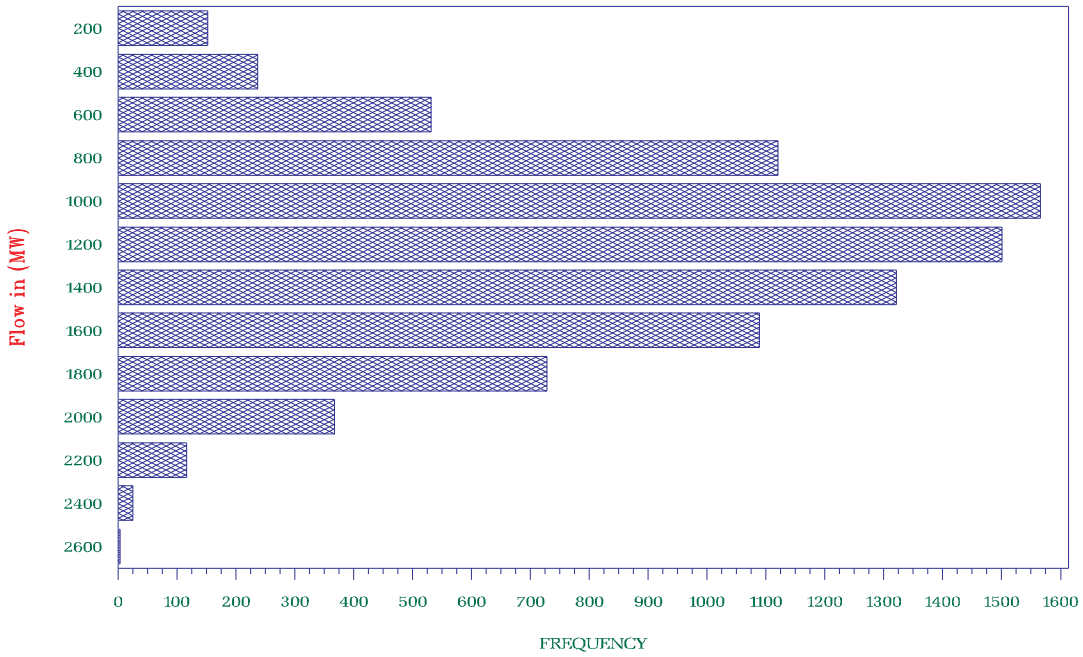
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Margin to West Central Limit



NYISO Frequency Interface Flow For January – December 2002

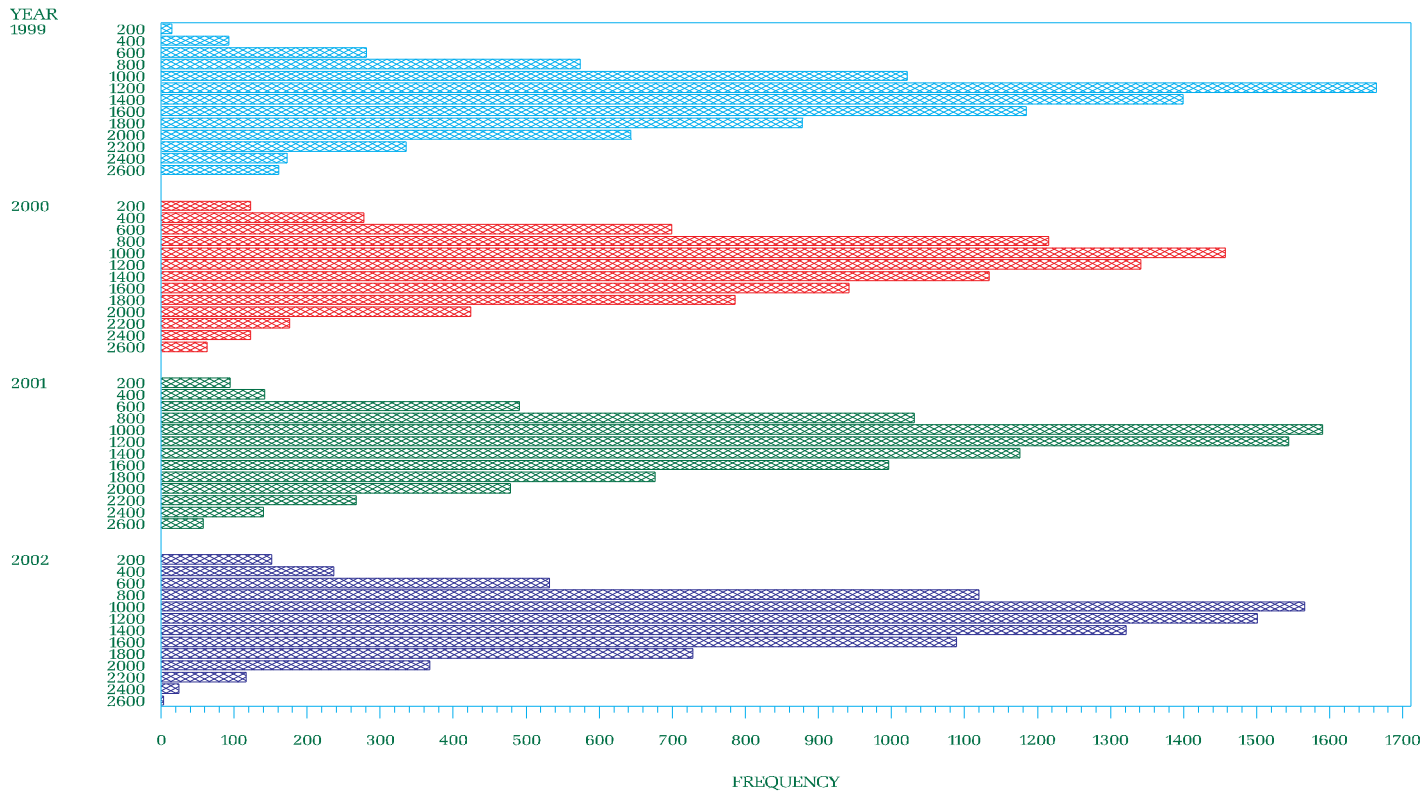
Margin to Dysinger East Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
200	152	152	1.74	1.74
400	237	389	2.71	4.44
600	532	921	6.07	10.51
800	1120	2041	12.79	23.30
1000	1566	3607	17.88	41.18
1200	1501	5108	17.13	58.31
1400	1321	6429	15.08	73.39
1600	1089	7518	12.43	85.82
1800	728	8246	8.31	94.13
2000	368	8614	4.20	98.33
2200	117	8731	1.34	99.67
2400	25	8756	0.29	99.95
2600	4	8760	0.05	100.00

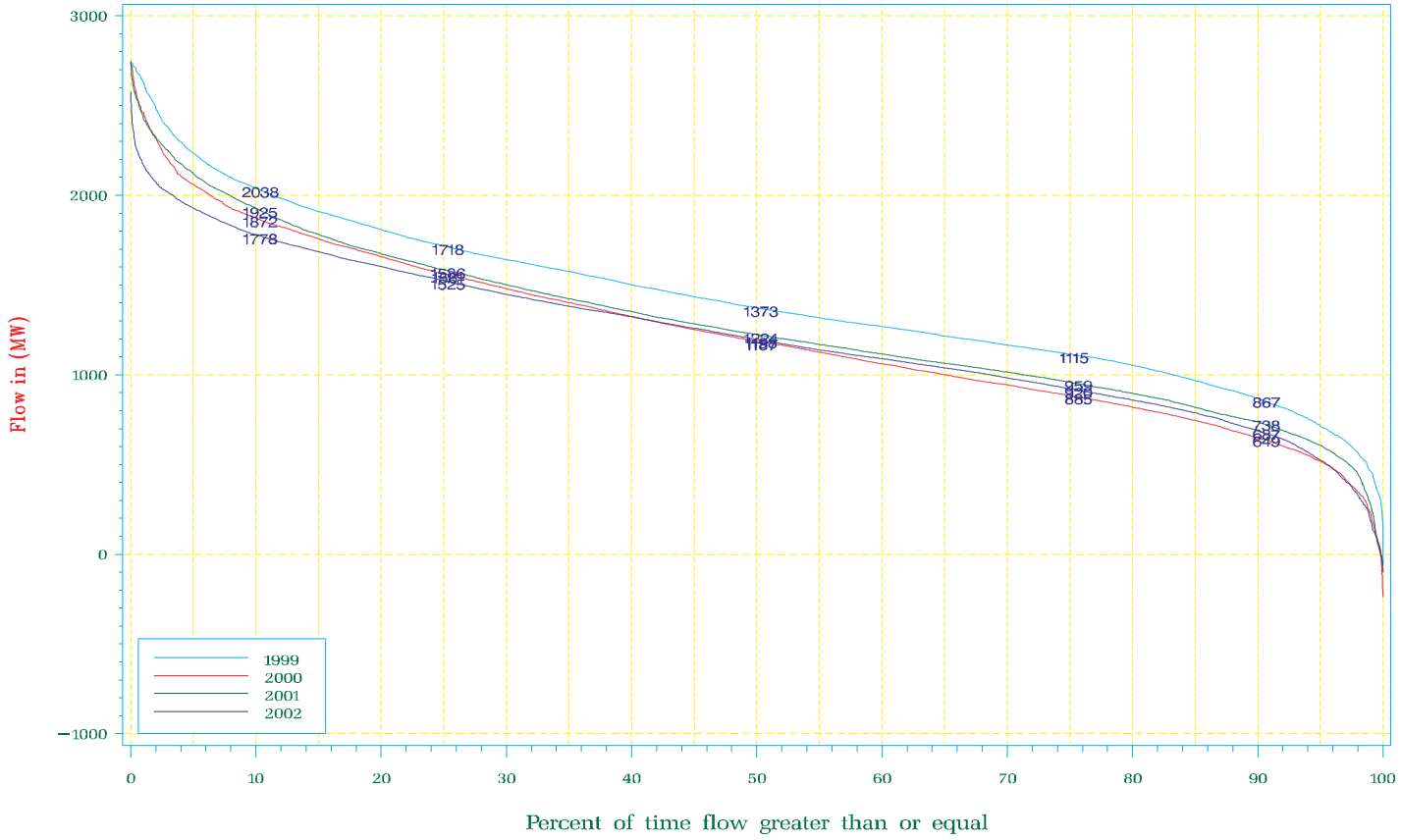
NYISO Frequency Interface Flow For January 1999 – December 2002

Margin to Dysinger East Limit



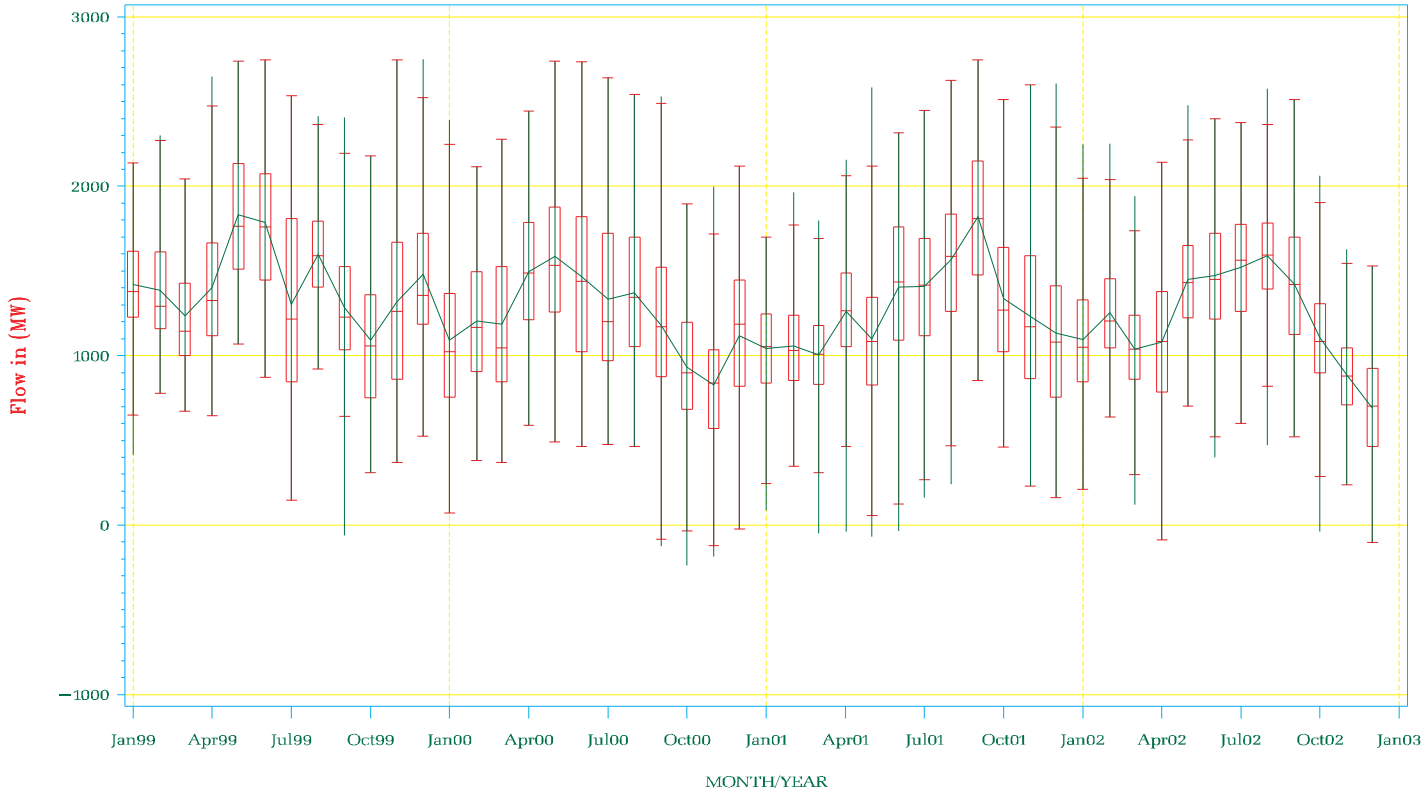
NYISO Percent of time Interface Flow For January 1999 – December 2002

Margin to Dysinger East Limit



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Margin to Dysinger East Limit



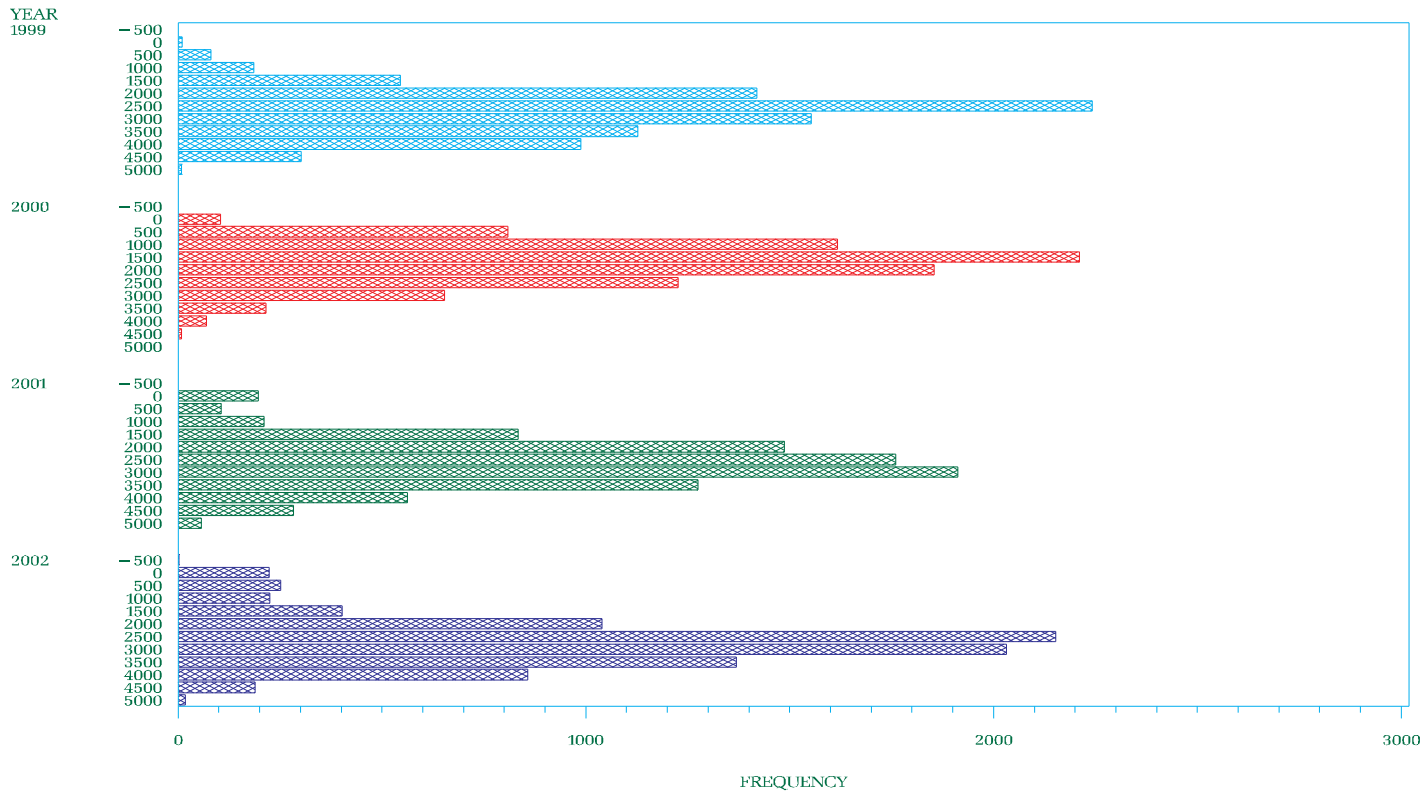
NYISO Frequency Interface Flow For January – December 2002

Margin to UPNY Con Ed Limit

Flow in (MW)	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
−500	2	2	0.02	0.02
0	223	225	2.55	2.57
500	252	477	2.88	5.45
1000	225	702	2.57	8.01
1500	403	1105	4.60	12.61
2000	1039	2144	11.86	24.47
2500	2152	4296	24.57	49.04
3000	2032	6328	23.20	72.24
3500	1369	7697	15.63	87.87
4000	857	8554	9.78	97.65
4500	188	8742	2.15	99.79
5000	18	8760	0.21	100.00

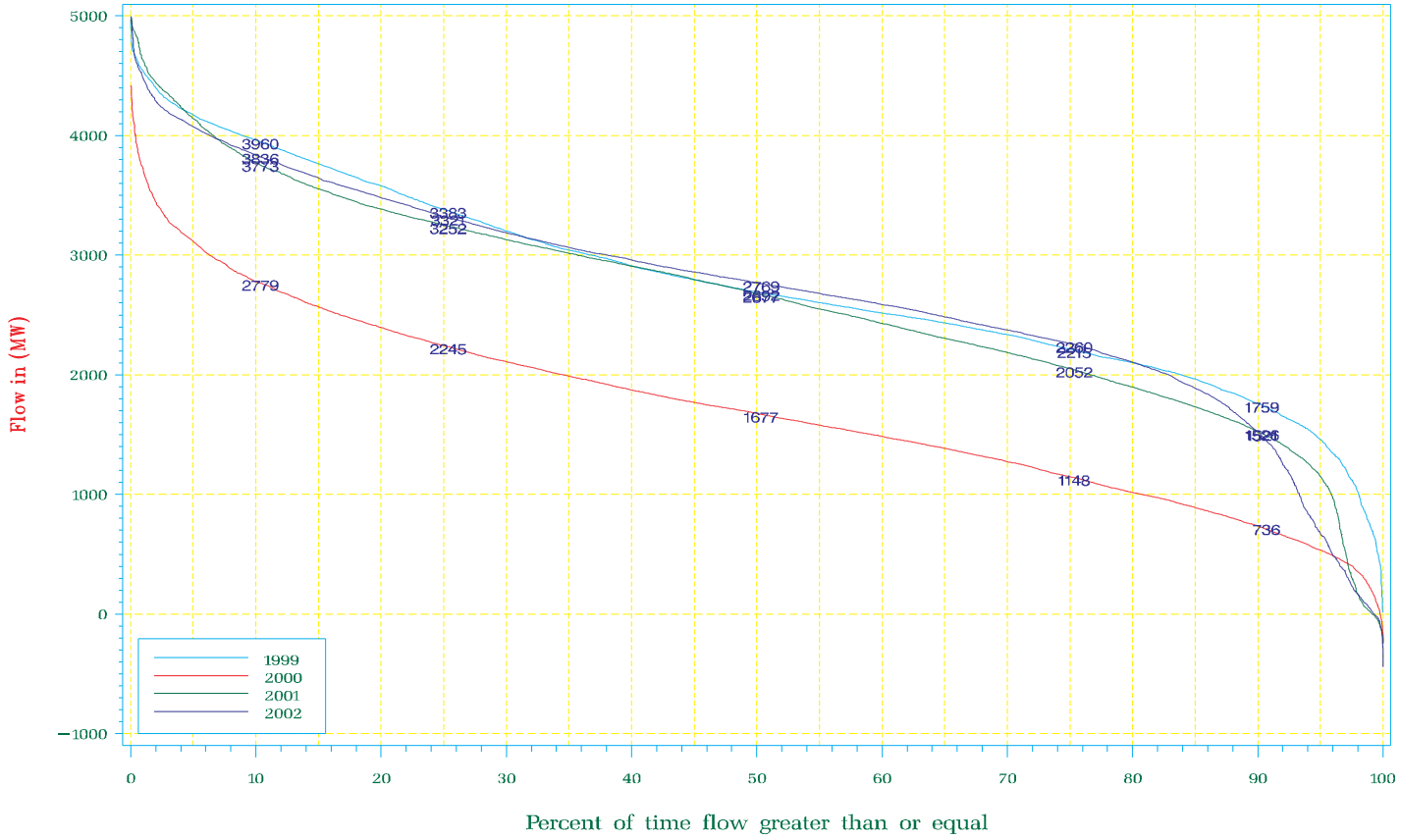
NYISO Frequency Interface Flow For January 1999 – December 2002

Margin to UPNY Con Ed Limit



NYISO Percent of time Interface Flow For January 1999 – December 2002

Margin to UPNY Con Ed Limit

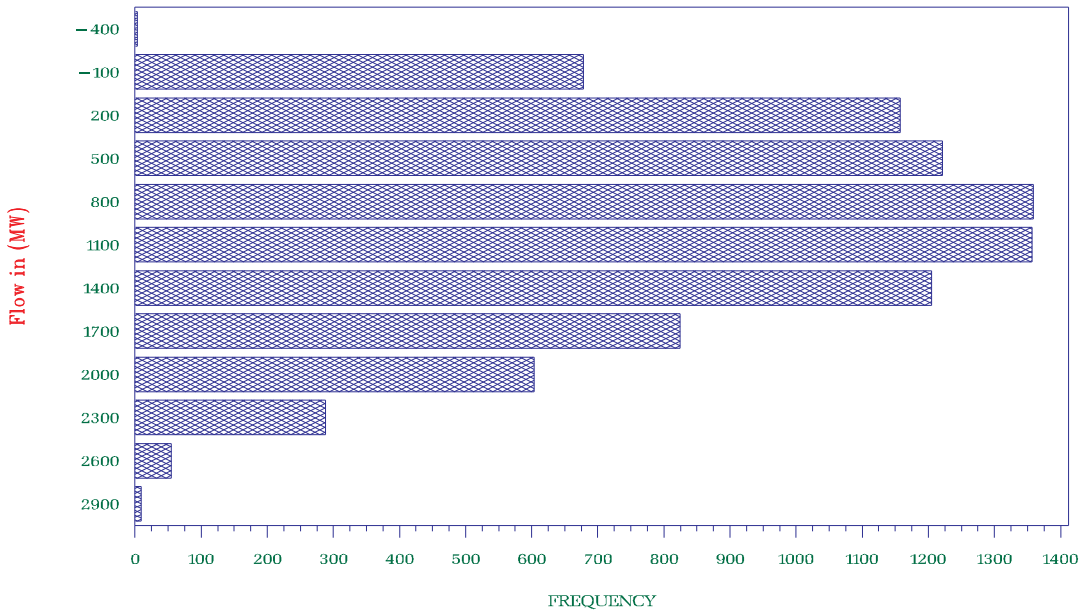


NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Margin to UPNY Con Ed Limit

NYISO Frequency Interface Flow For January – December 2002

Margin to Sprainbrook/Dunwoodie Limit



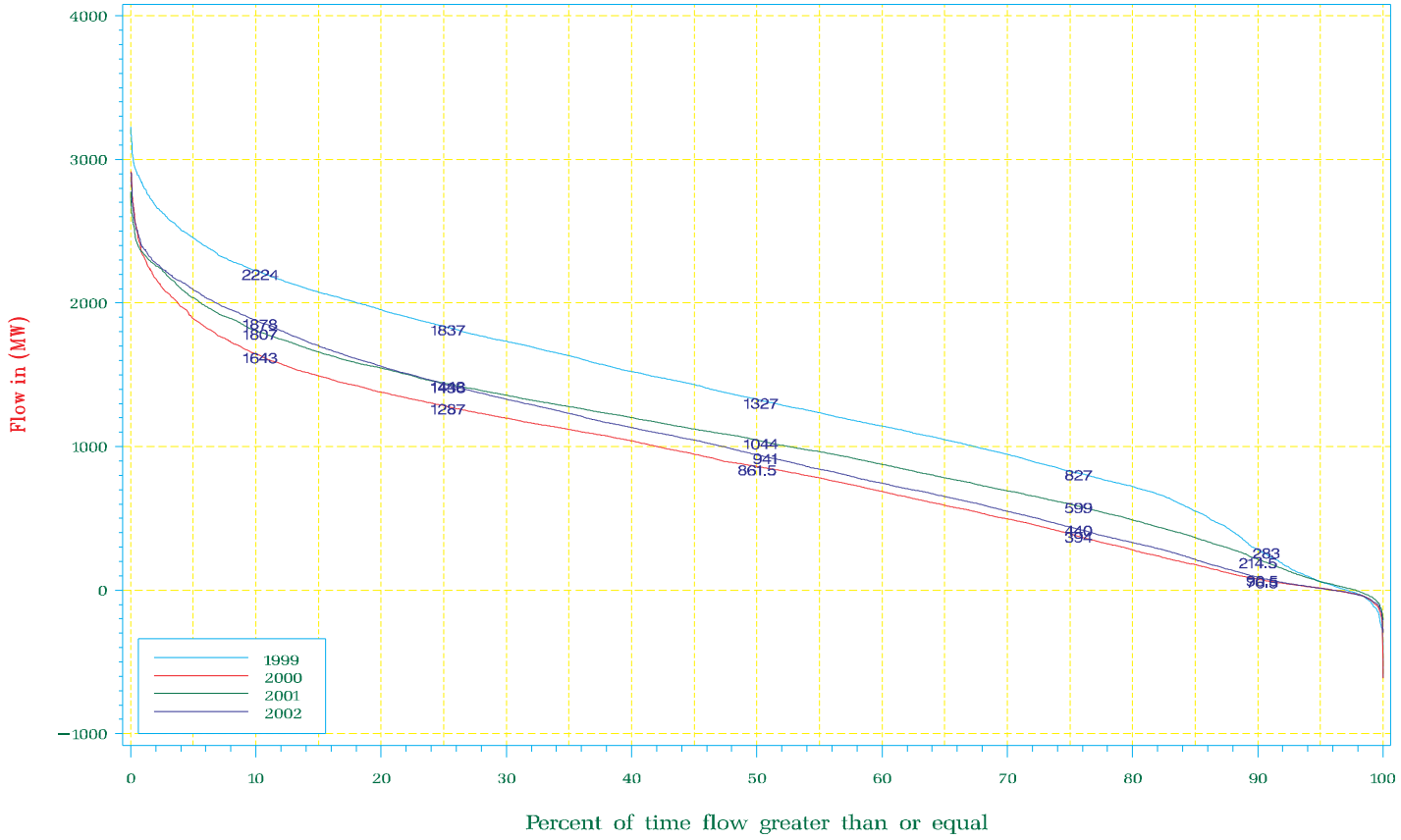
	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
-400	3	3	0.03	0.03
-100	678	681	7.74	7.77
200	1157	1838	13.21	20.98
500	1221	3059	13.94	34.92
800	1359	4418	15.51	50.43
1100	1357	5775	15.49	65.92
1400	1205	6980	13.76	79.68
1700	824	7804	9.41	89.09
2000	604	8408	6.89	95.98
2300	288	8696	3.29	99.27
2600	55	8751	0.63	99.90
2900	9	8760	0.10	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

Margin to Sprainbrook/Dunwoodie Limit

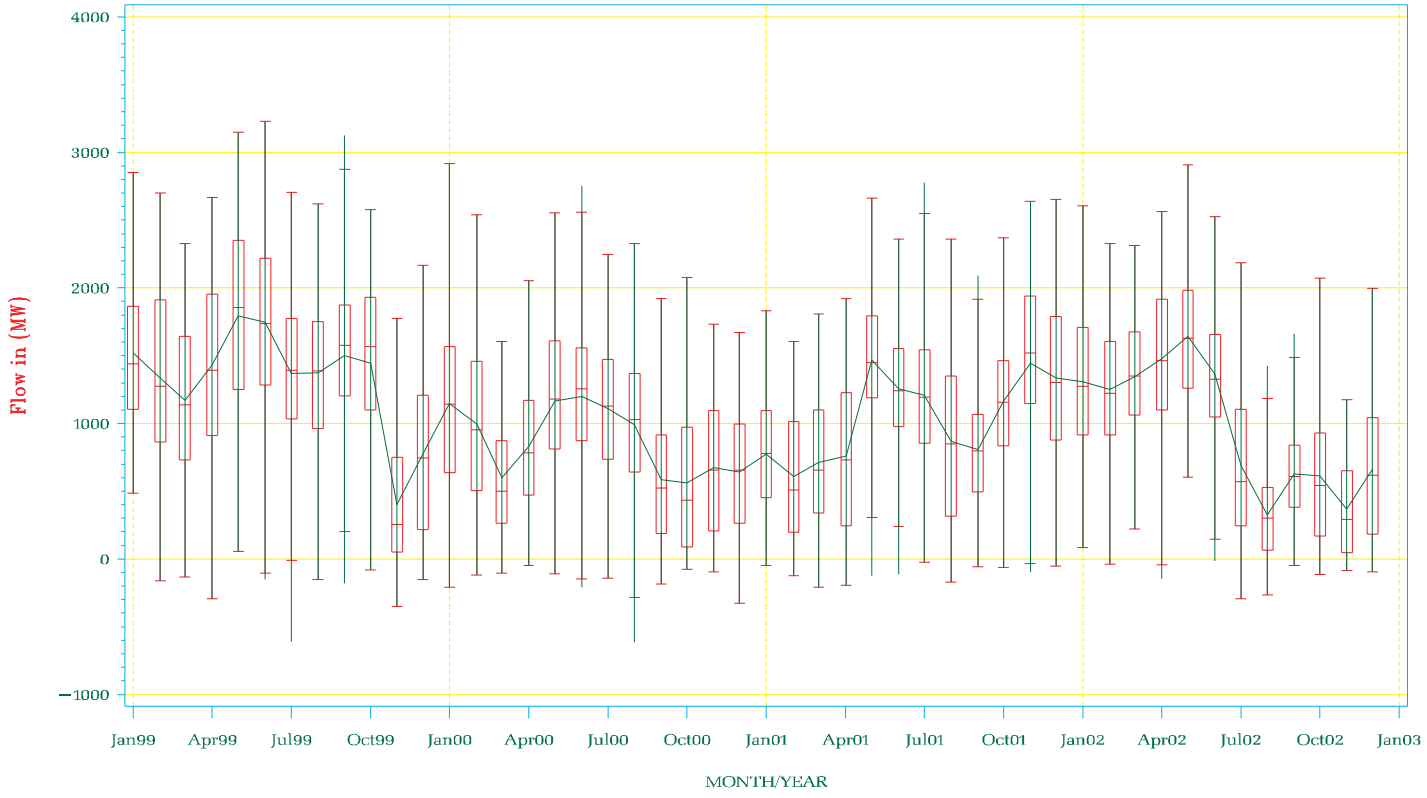
NYISO Percent of time Interface Flow For January 1999 – December 2002

Margin to Sprainbrook/Dunwoodie Limit



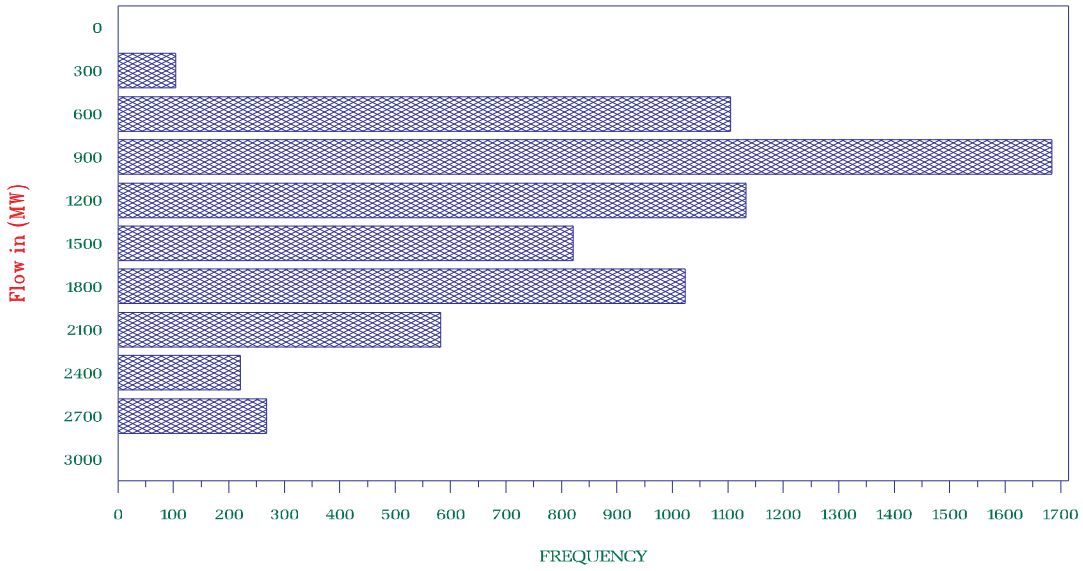
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Margin to Sprainbrook/Dunwoodie Limit



NYISO Frequency Interface Flow For January – December 2002

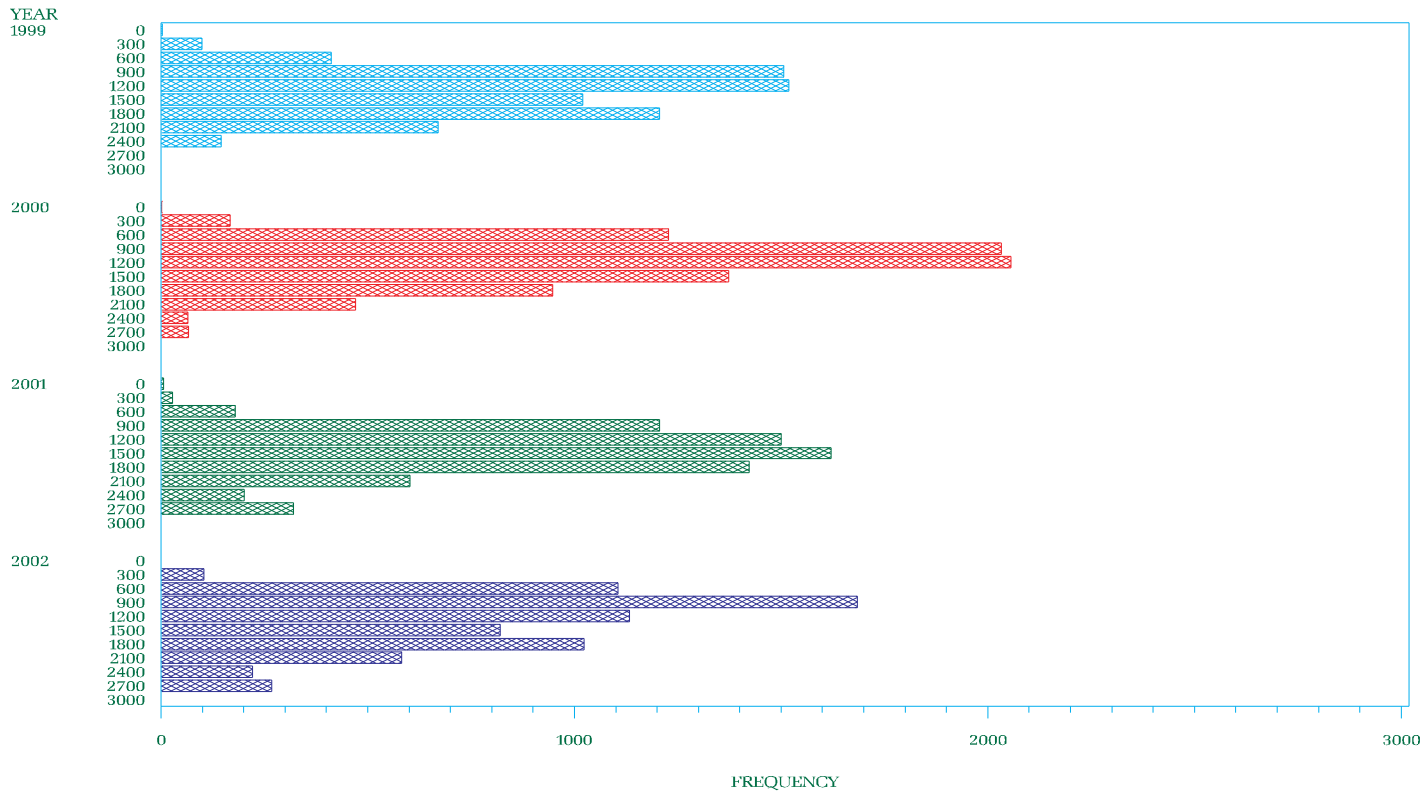
Margin to Moses South Limit



Flow in (MW)	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
0	0	0	0.00	0.00
300	104	104	1.50	1.50
600	1105	1209	15.92	17.42
900	1684	2893	24.26	41.68
1200	1133	4026	16.32	58.00
1500	821	4847	11.83	69.83
1800	1023	5870	14.74	84.57
2100	582	6452	8.38	92.95
2400	221	6673	3.18	96.14
2700	268	6941	3.86	100.00
3000	0	6941	0.00	100.00

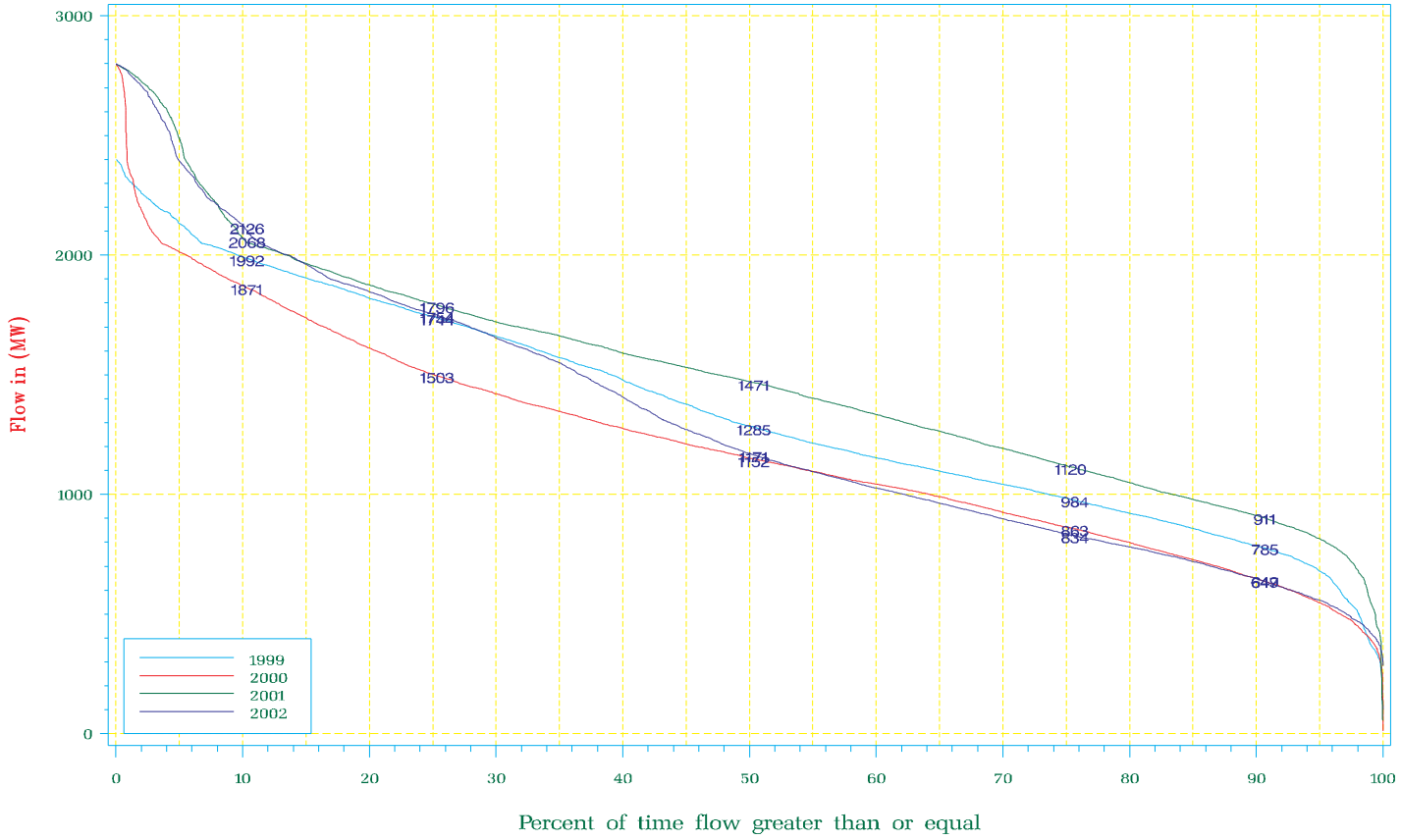
NYISO Frequency Interface Flow For January 1999 – December 2002

Margin to Moses South Limit



NYISO Percent of time Interface Flow For January 1999 – December 2002

Margin to Moses South Limit

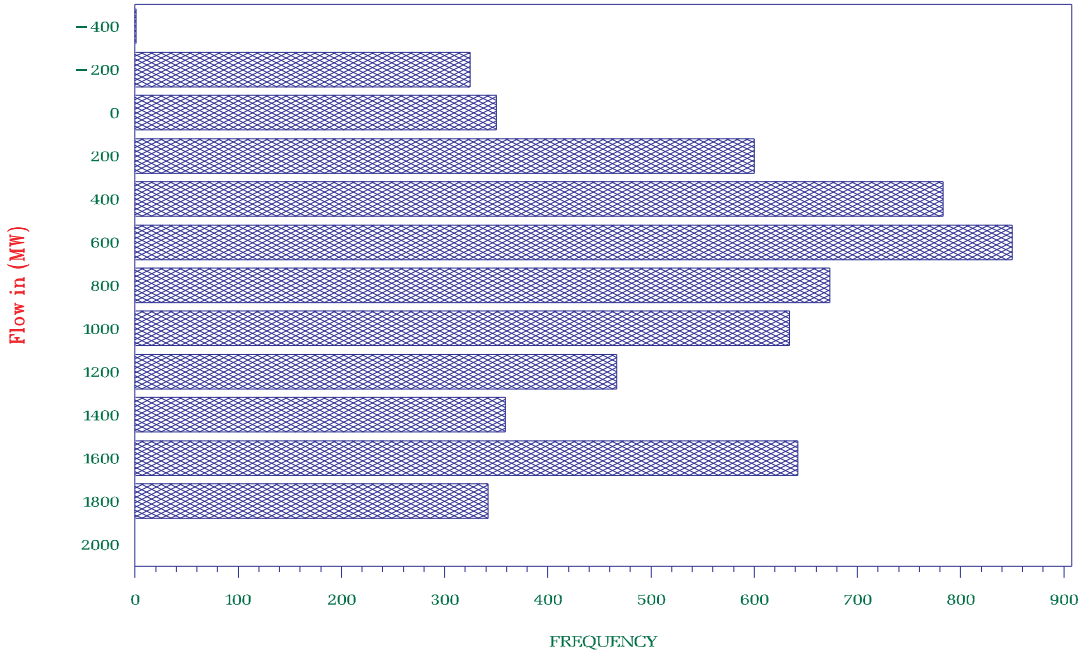


NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Margin to Moses South Limit

NYISO Frequency Interface Flow For January – December 2002

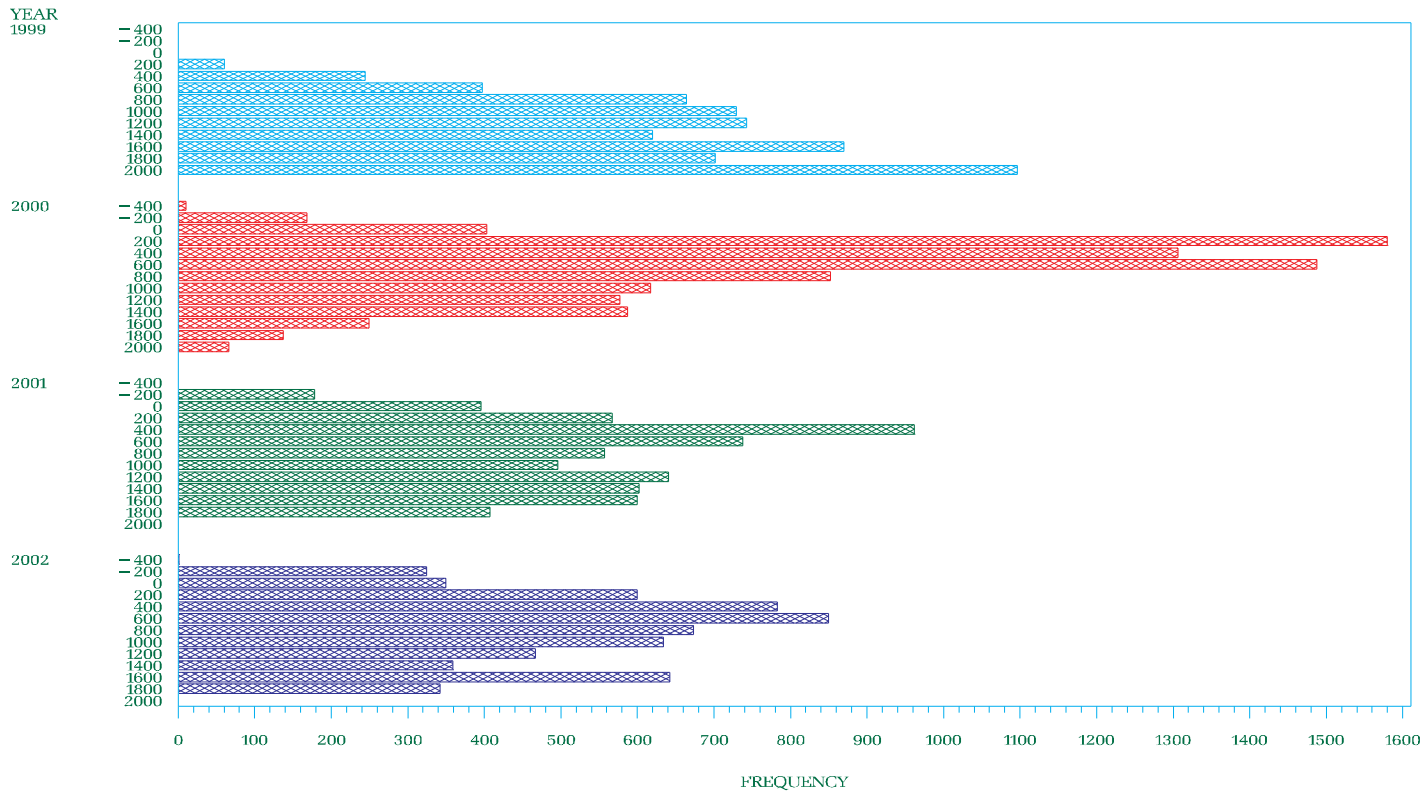
Margin to TE–NY Limit



Flow in (MW)	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
−400	1	1	0.02	0.02
−200	325	326	5.39	5.41
0	350	676	5.81	11.22
200	600	1276	9.96	21.17
400	783	2059	12.99	34.17
600	850	2909	14.11	48.27
800	673	3582	11.17	59.44
1000	634	4216	10.52	69.96
1200	467	4683	7.75	77.71
1400	359	5042	5.96	83.67
1600	642	5684	10.65	94.32
1800	342	6026	5.68	100.00
2000	0	6026	0.00	100.00

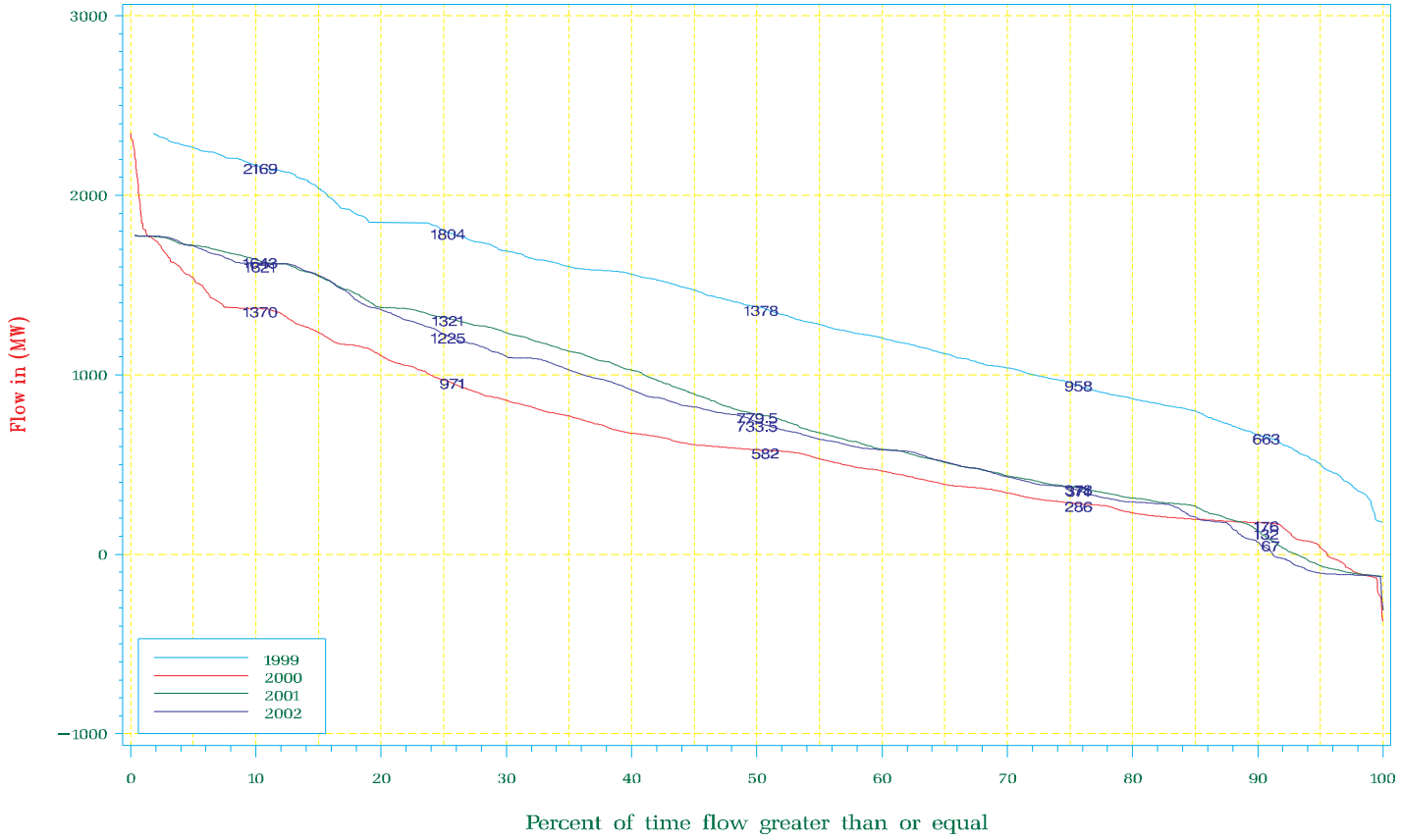
NYISO Frequency Interface Flow For January 1999 – December 2002

Margin to TE–NY Limit



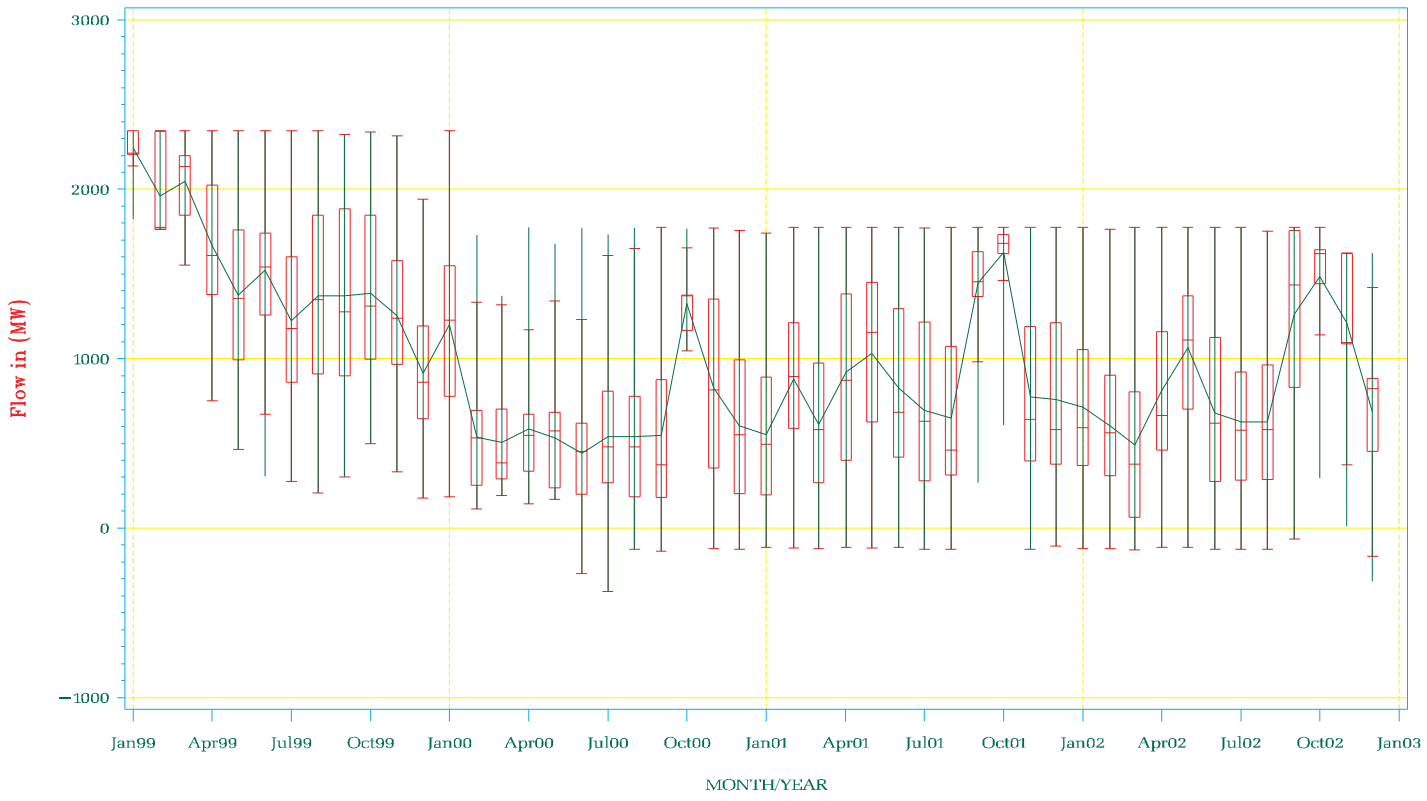
NYISO Percent of time Interface Flow For January 1999 – December 2002

Margin to TE–NY Limit



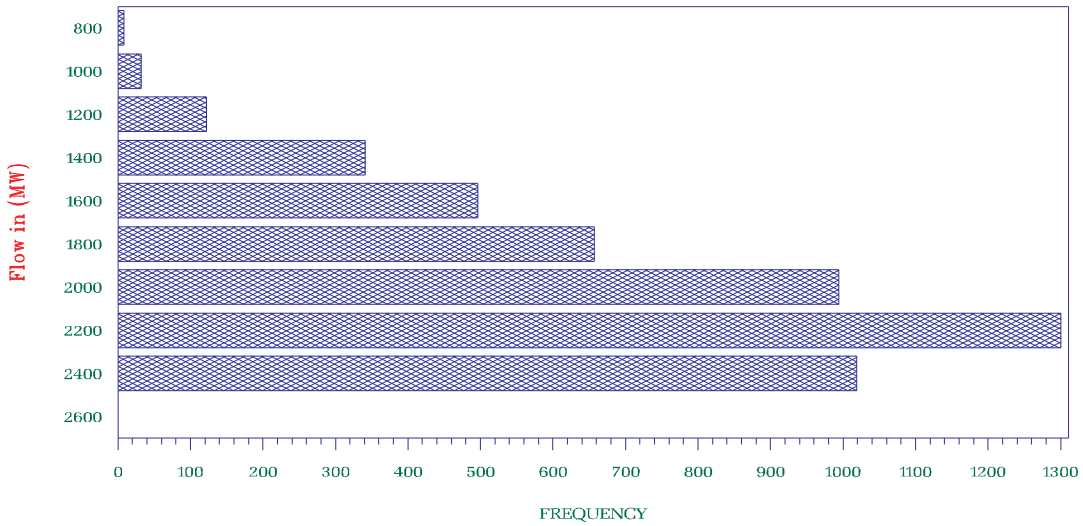
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Margin to TE–NY Limit



NYISO Frequency Interface Flow For January – December 2002

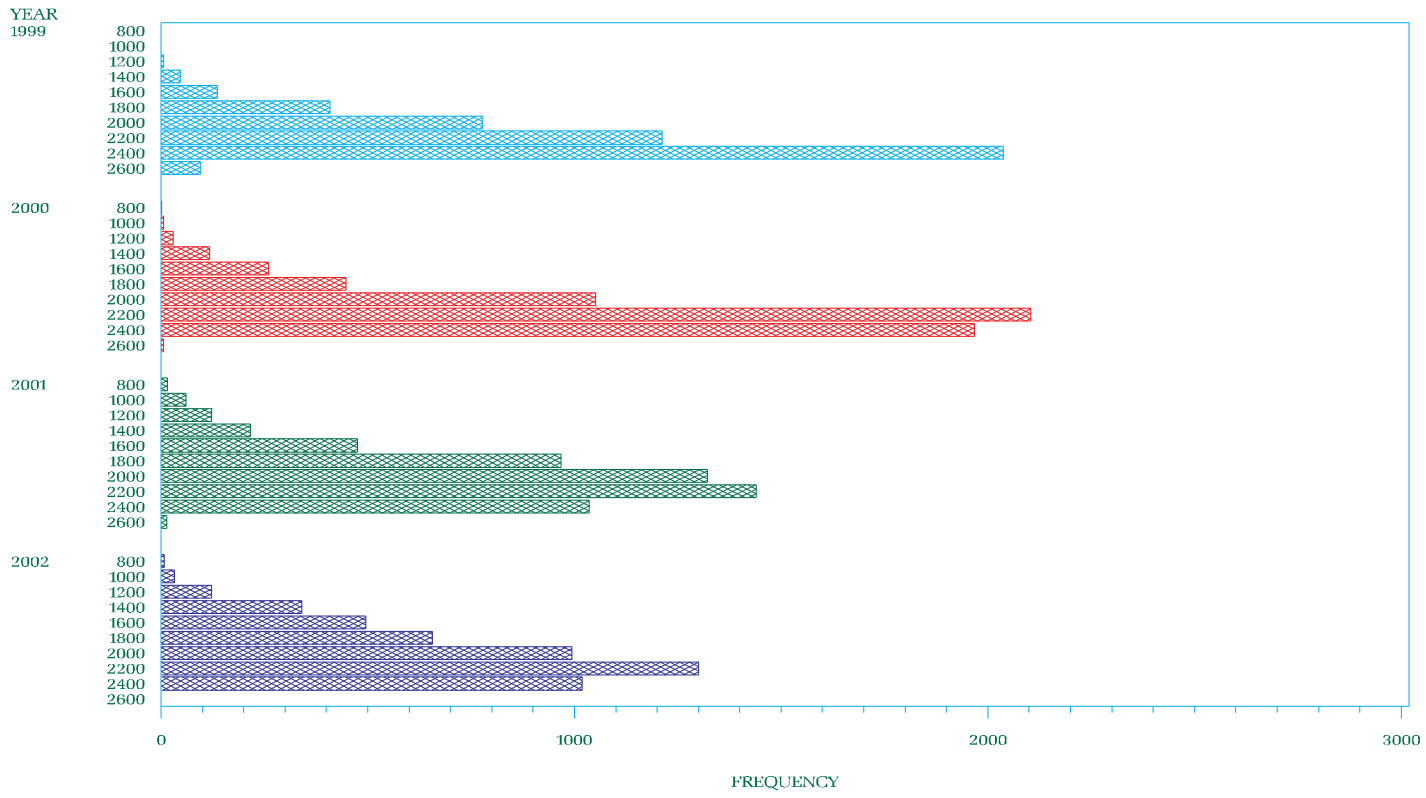
Margin to ONTARIO – NY Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
800	8	8	0.16	0.16
1000	32	40	0.64	0.80
1200	122	162	2.46	3.26
1400	341	503	6.86	10.12
1600	496	999	9.98	20.10
1800	657	1656	13.22	33.33
2000	994	2650	20.00	53.33
2200	1300	3950	26.16	79.49
2400	1019	4969	20.51	100.00
2600	0	4969	0.00	100.00

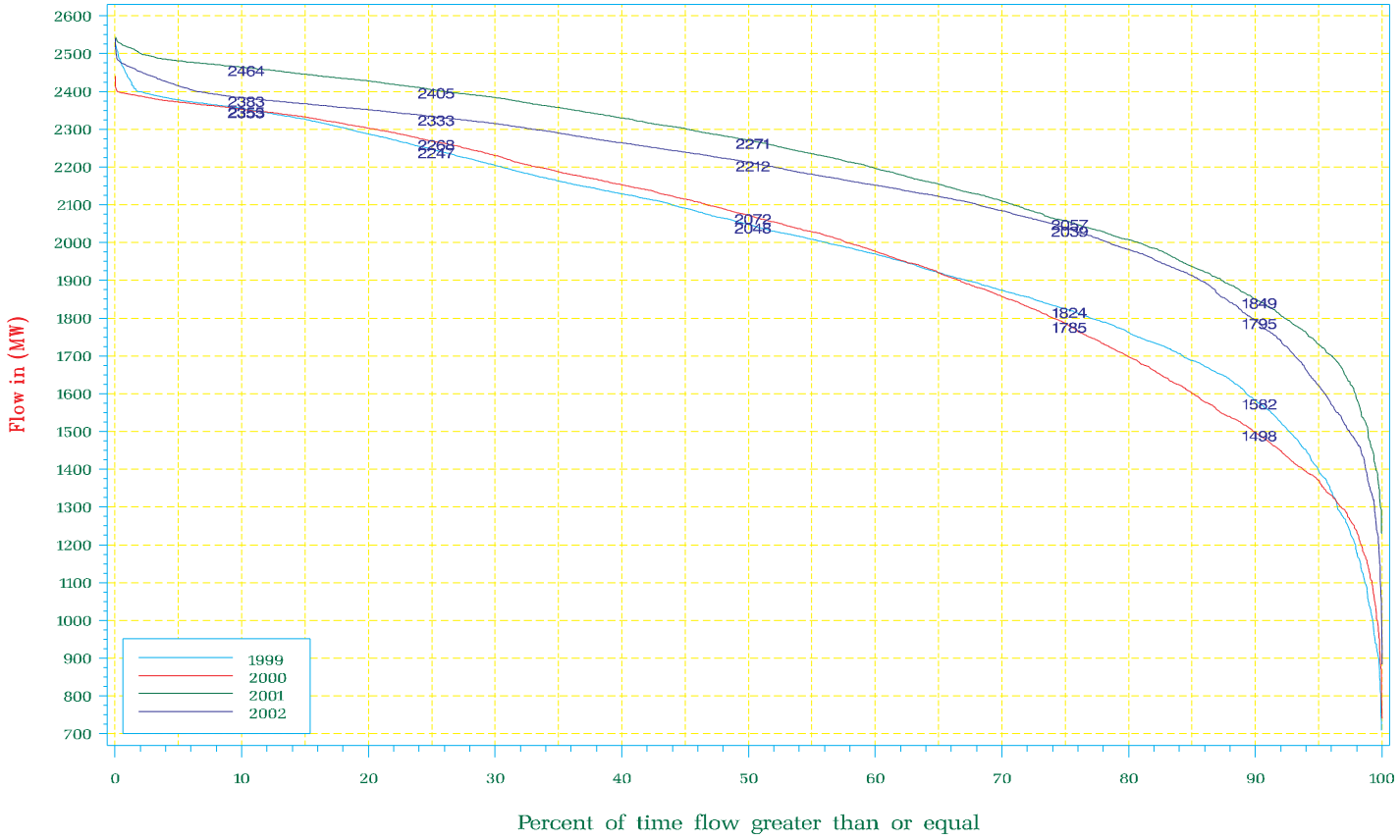
NYISO Frequency Interface Flow For January 1999 – December 2002

Margin to Ontario – NY Limit



NYISO Percent of time Interface Flow For January 1999 – December 2002

Margin to Ontario – NY Limit

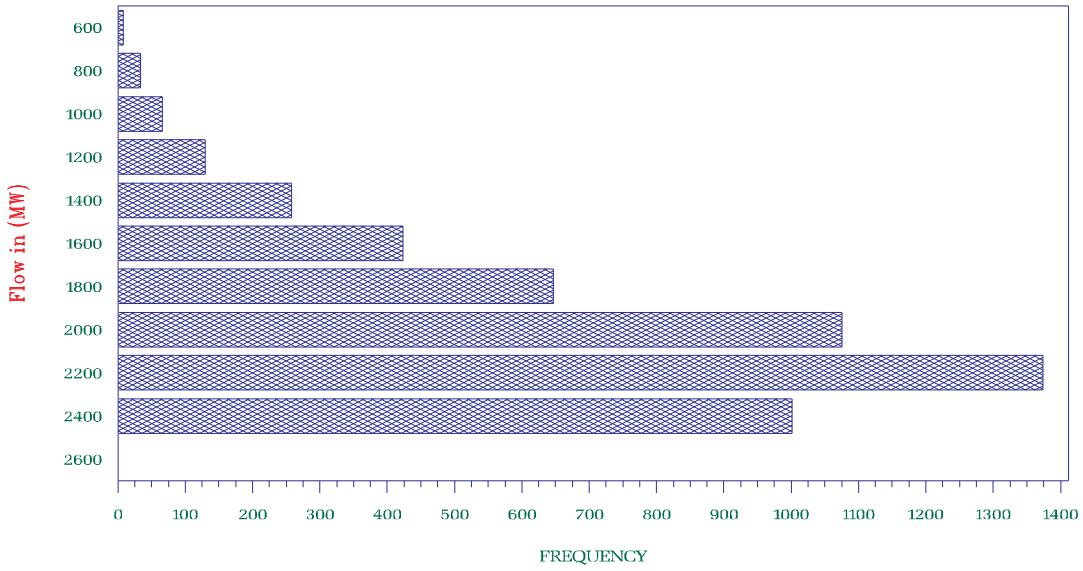


NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Margin to Ontario – NY Limit

NYISO Frequency Interface Flow For January – December 2002

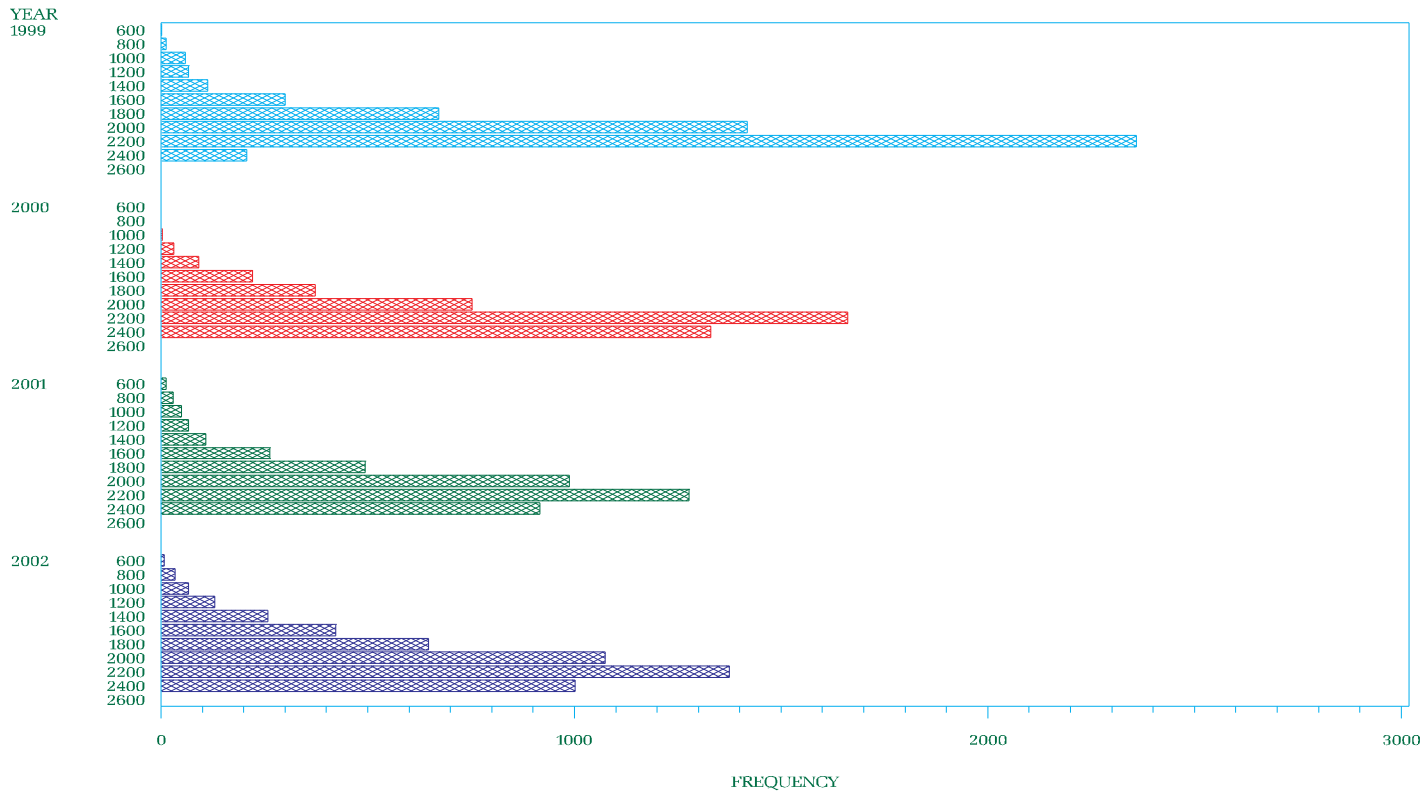
Margin to NY–ONTARIO Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
600	8	8	0.16	0.16
800	34	42	0.68	0.84
1000	66	108	1.32	2.15
1200	130	238	2.59	4.74
1400	258	496	5.14	9.89
1600	423	919	8.43	18.32
1800	647	1566	12.90	31.22
2000	1075	2641	21.43	52.65
2200	1374	4015	27.39	80.04
2400	1001	5016	19.96	100.00
2600	0	5016	0.00	100.00

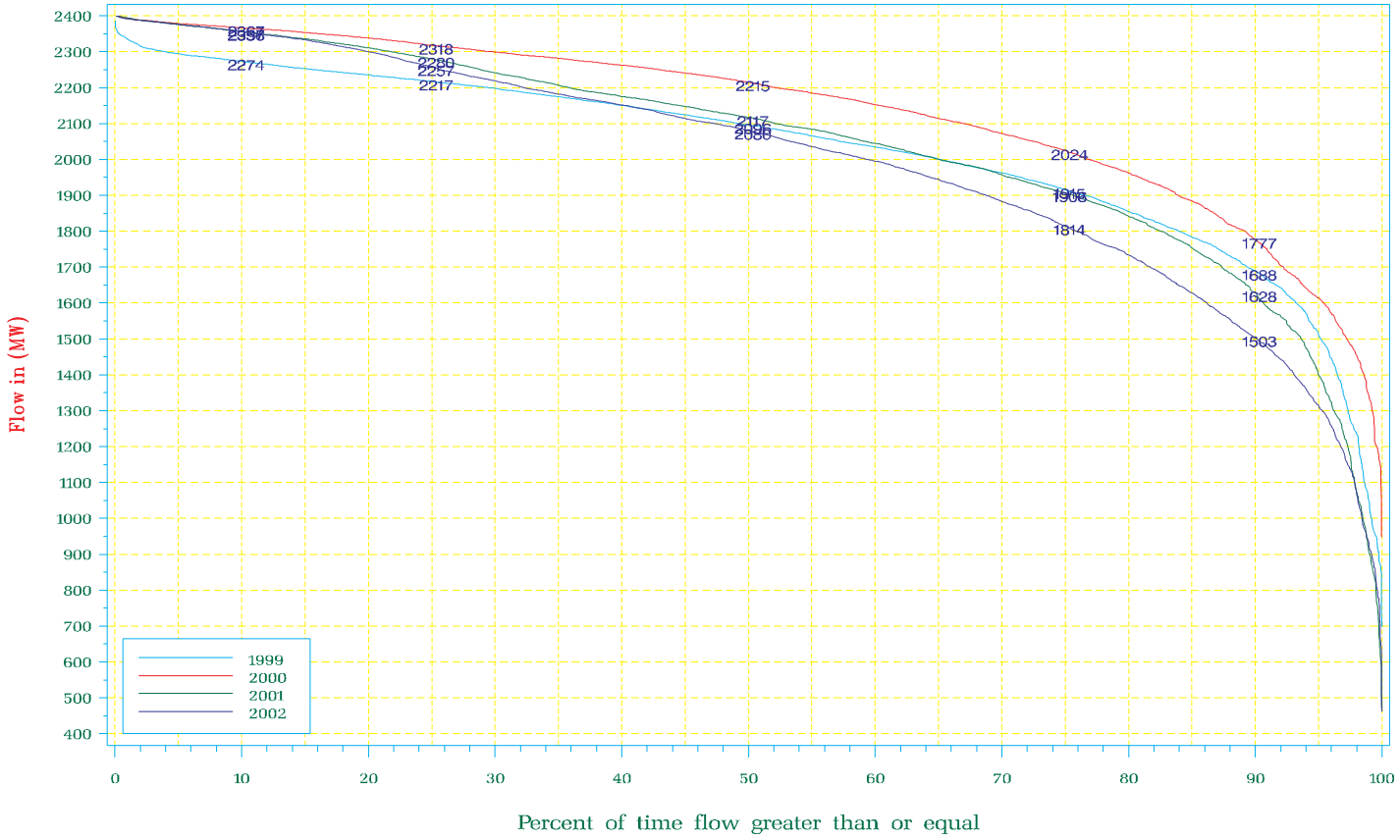
NYISO Frequency Interface Flow For January 1999 – December 2002

Margin to NY–Ontario Limit



NYISO Percent of time Interface Flow For January 1999 – December 2002

Margin to NY–Ontario Limit

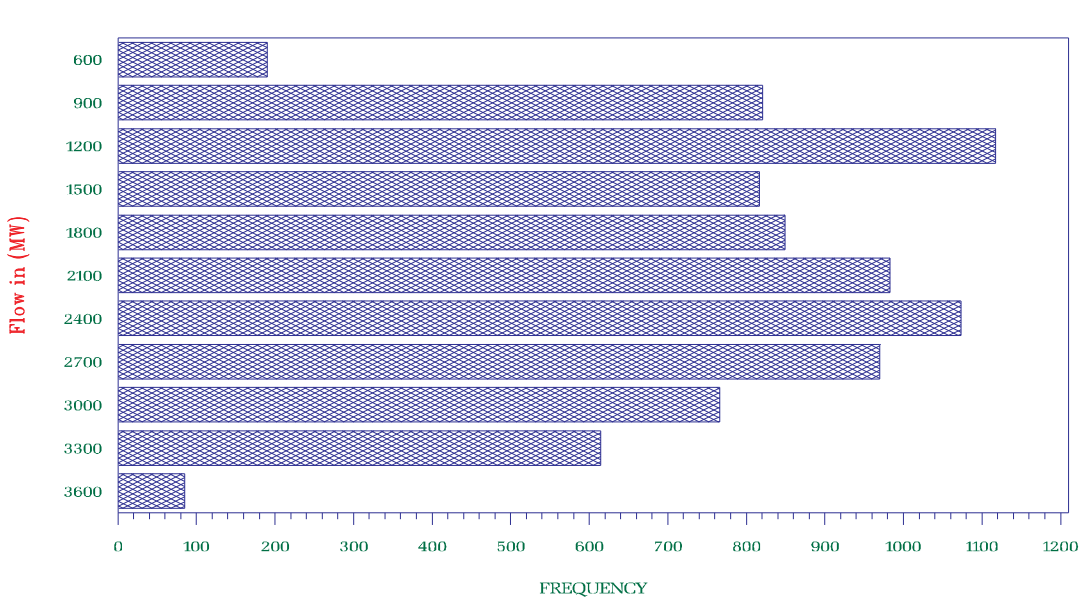


NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Margin to NY–Ontario Limit

NYISO Frequency Interface Flow For January – December 2002

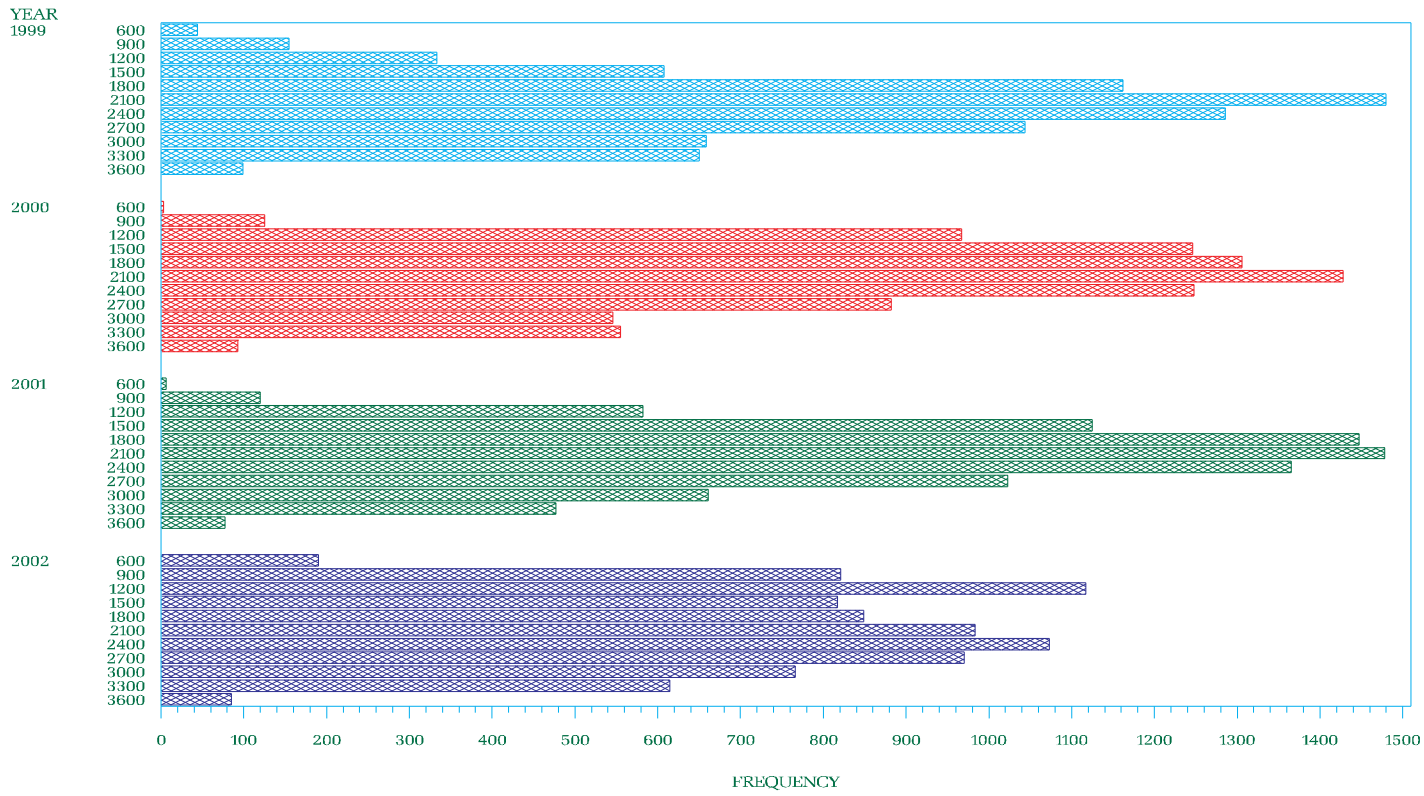
Margin to PJM – NY Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
600	190	190	2.29	2.29
900	821	1011	9.91	12.20
1200	1117	2128	13.48	25.68
1500	817	2945	9.86	35.54
1800	849	3794	10.25	45.79
2100	983	4777	11.86	57.65
2400	1073	5850	12.95	70.60
2700	970	6820	11.71	82.31
3000	766	7586	9.24	91.55
3300	615	8201	7.42	98.97
3600	85	8286	1.03	100.00

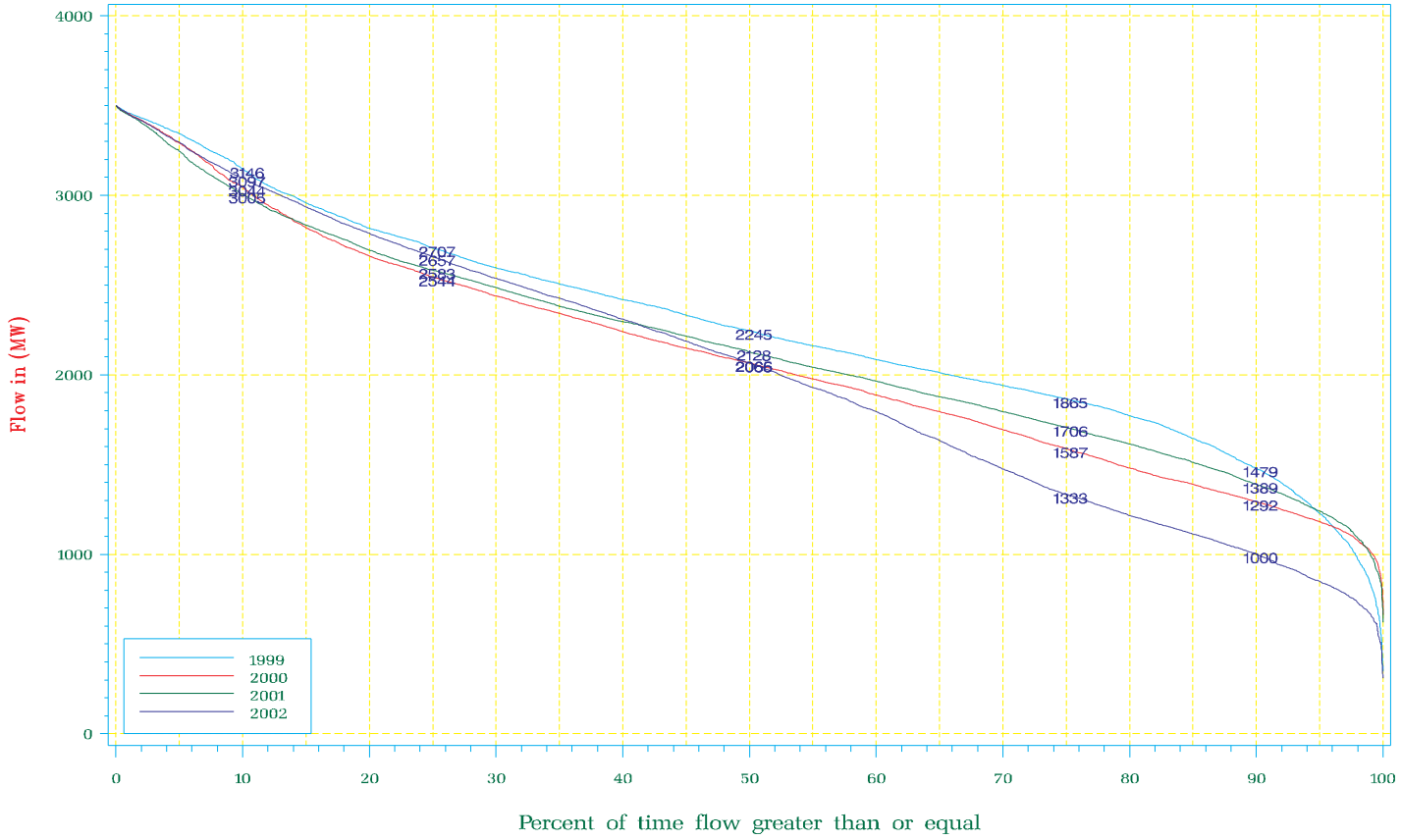
NYISO Frequency Interface Flow For January 1999 – December 2002

Margin to PJM – NY Limit



NYISO Percent of time Interface Flow For January 1999 – December 2002

Margin to PJM – NY Limit

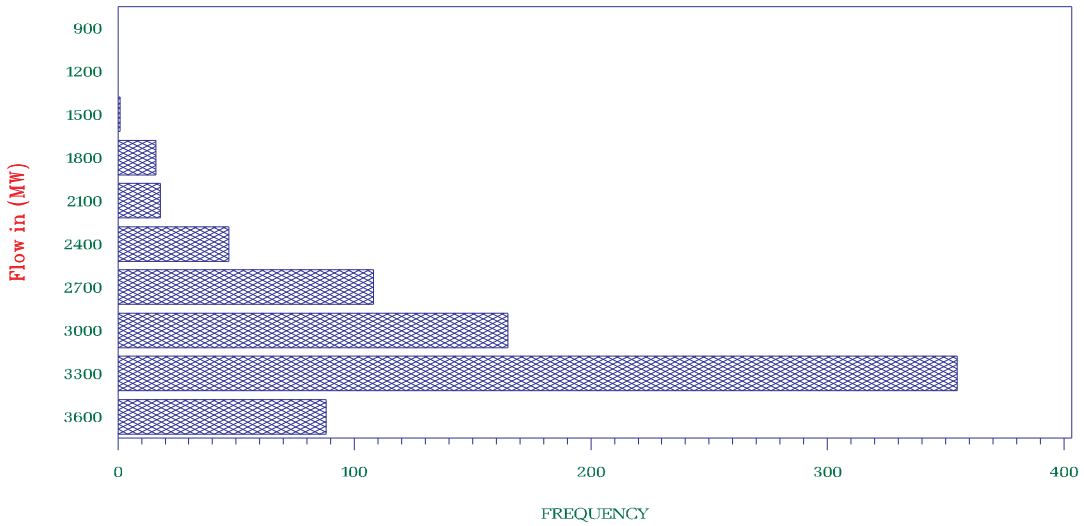


NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Margin to PJM – NY Limit

NYISO Frequency Interface Flow For January – December 2002

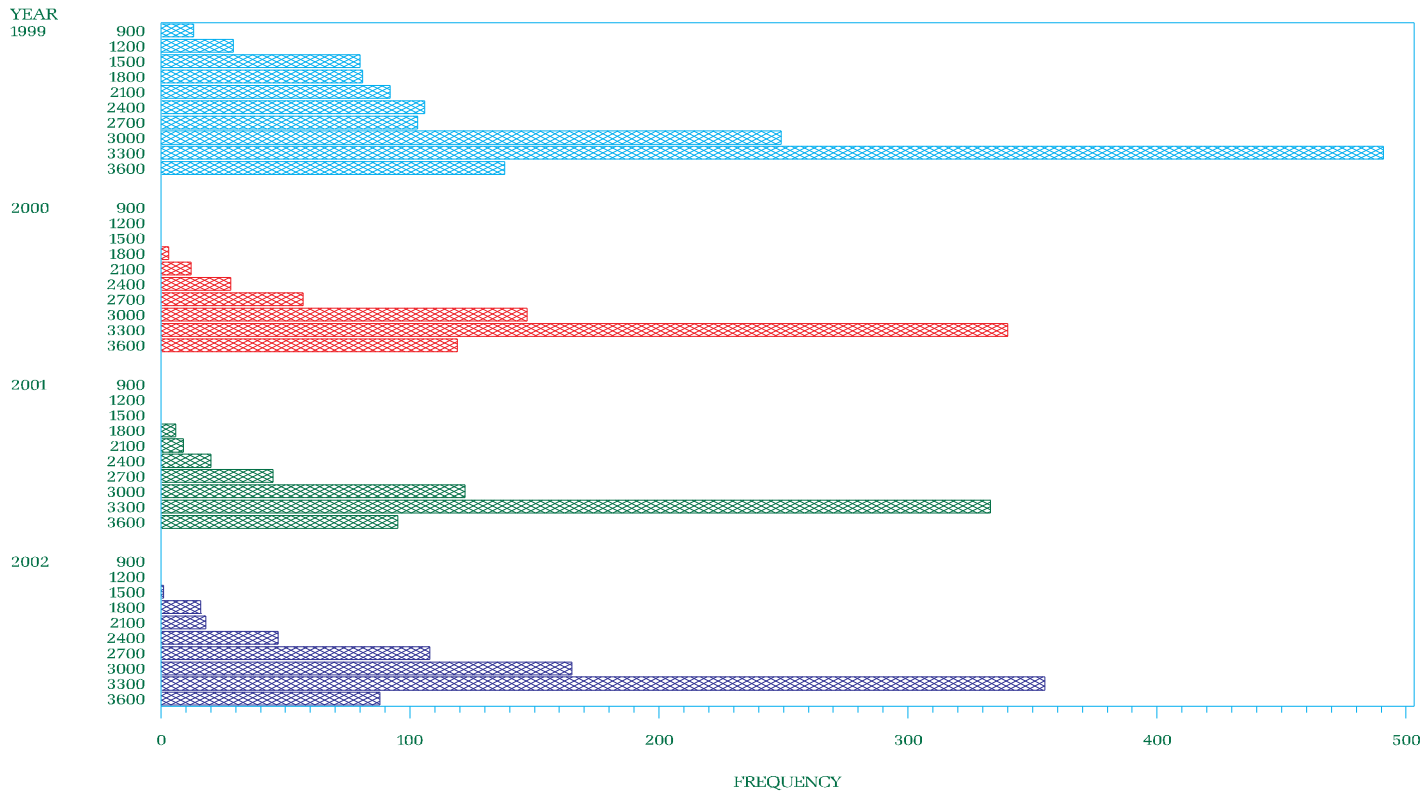
Margin to NY – PJM Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
900	0	0	0.00	0.00
1200	0	0	0.00	0.00
1500	1	1	0.13	0.13
1800	16	17	2.01	2.13
2100	18	35	2.26	4.39
2400	47	82	5.89	10.28
2700	108	190	13.53	23.81
3000	165	355	20.68	44.49
3300	355	710	44.49	88.97
3600	88	798	11.03	100.00

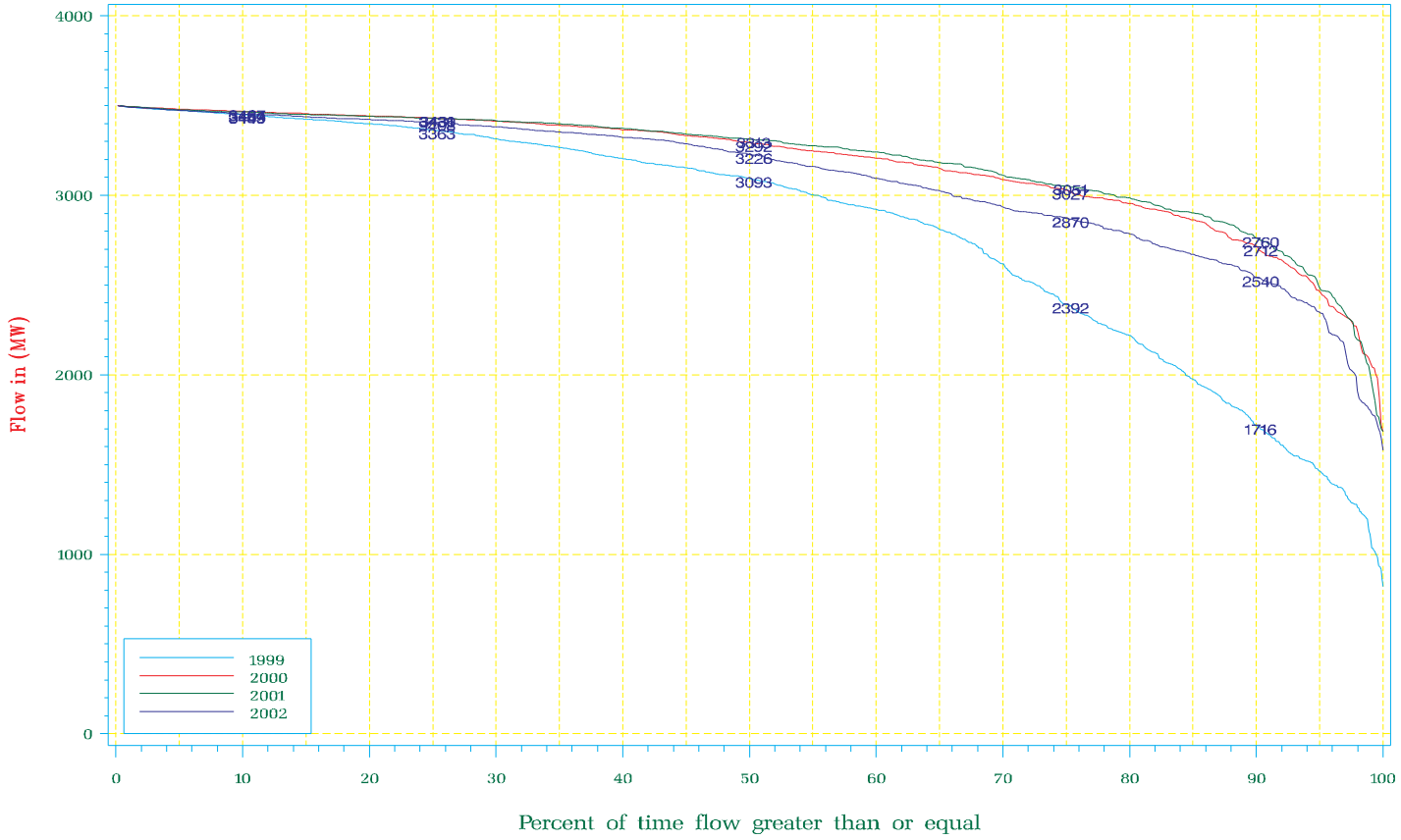
NYISO Frequency Interface Flow For January 1999 – December 2002

Margin to NY – PJM Limit



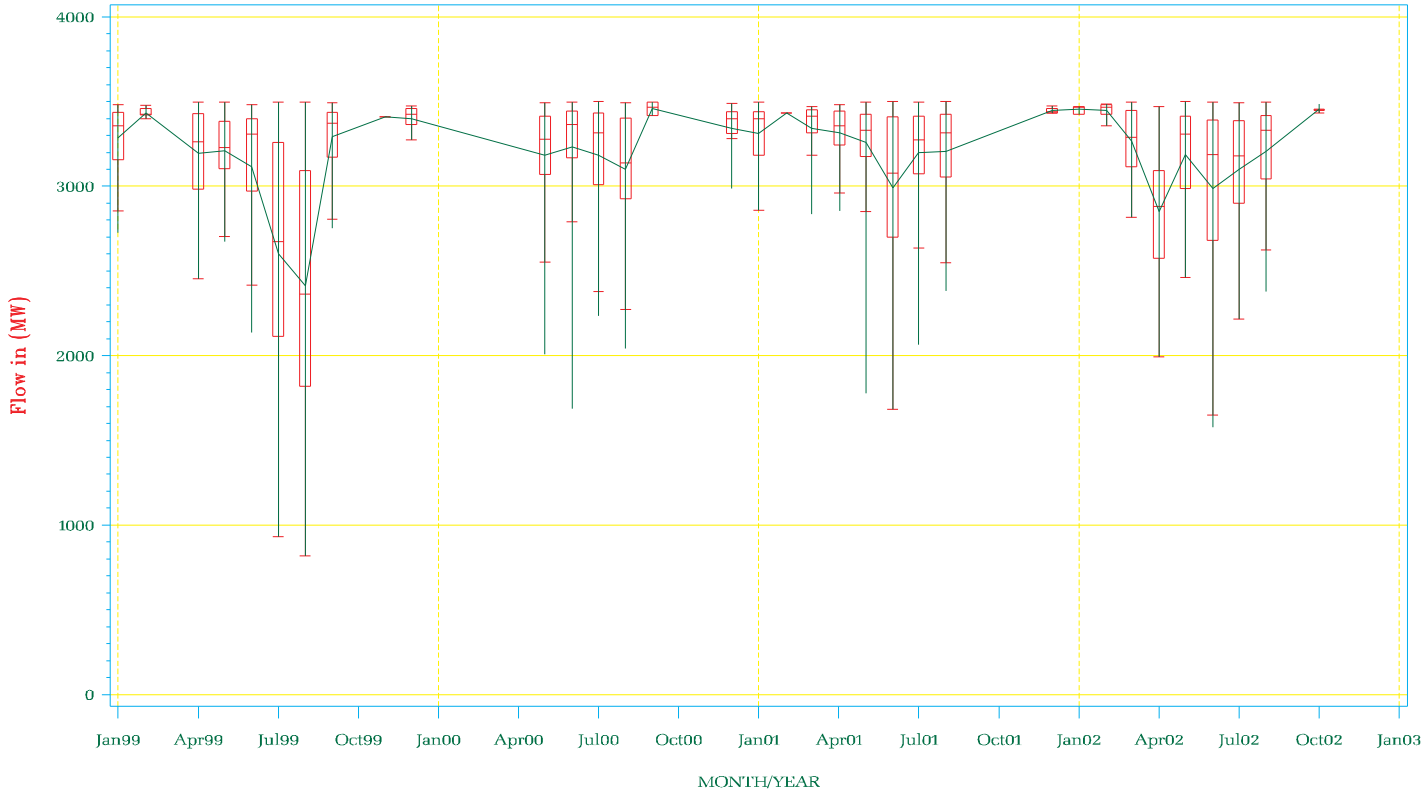
NYISO Percent of time Interface Flow For January 1999 – December 2002

Margin to NY–PJM Limit



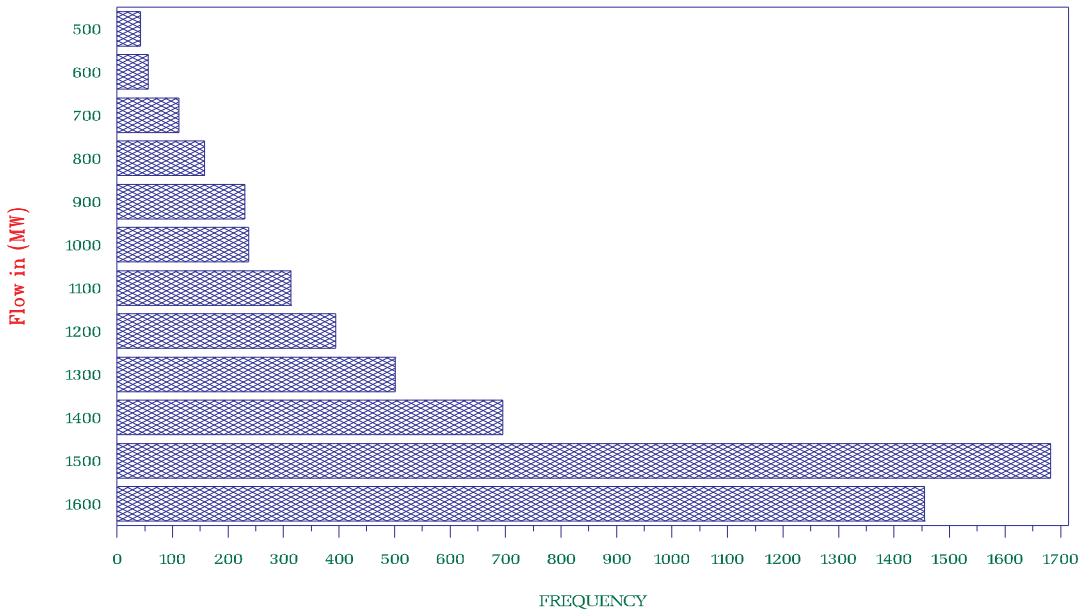
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Margin to NY–PJM Limit



NYISO Frequency Interface Flow For January – December 2002

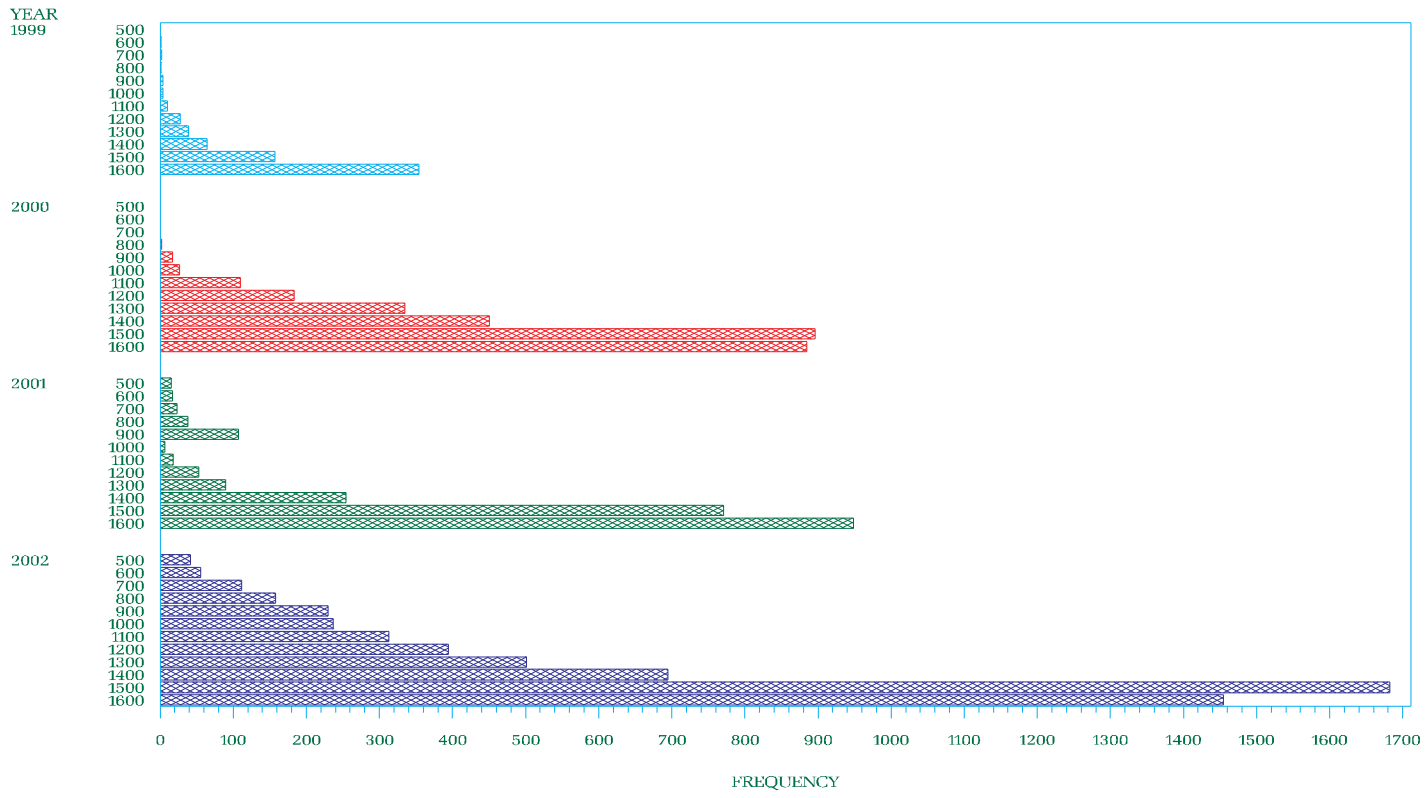
Margin to New England – NY Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
500	42	42	0.71	0.71
600	56	98	0.95	1.67
700	112	210	1.91	3.57
800	158	368	2.69	6.26
900	230	598	3.91	10.18
1000	237	835	4.03	14.21
1100	313	1148	5.33	19.54
1200	394	1542	6.71	26.25
1300	501	2043	8.53	34.77
1400	695	2738	11.83	46.60
1500	1682	4420	28.63	75.23
1600	1455	5875	24.77	100.00

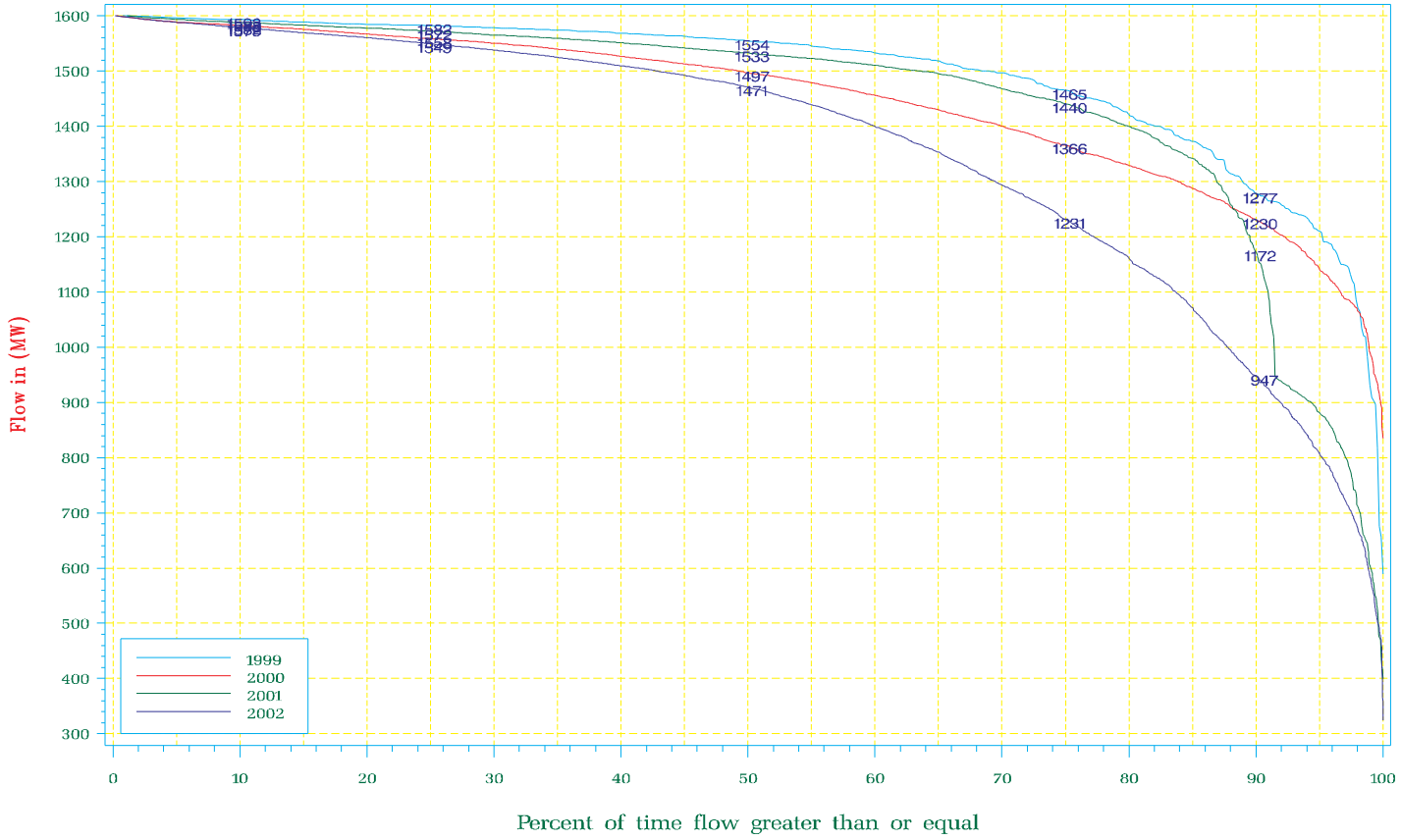
NYISO Frequency Interface Flow For January 1999 – December 2002

Margin to New England – NY Limit



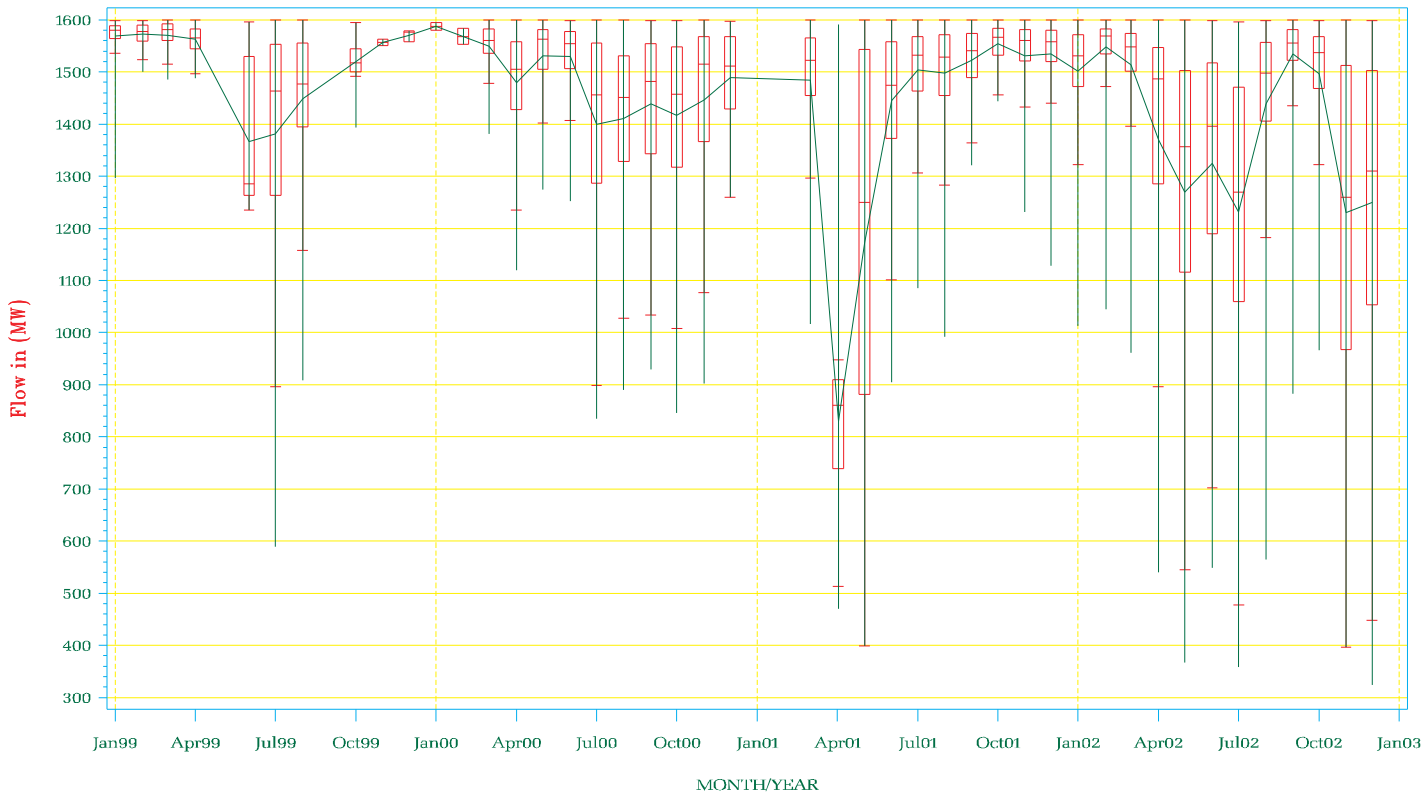
NYISO Percent of time Interface Flow For January 1999 – December 2002

Margin to New England – NY Limit



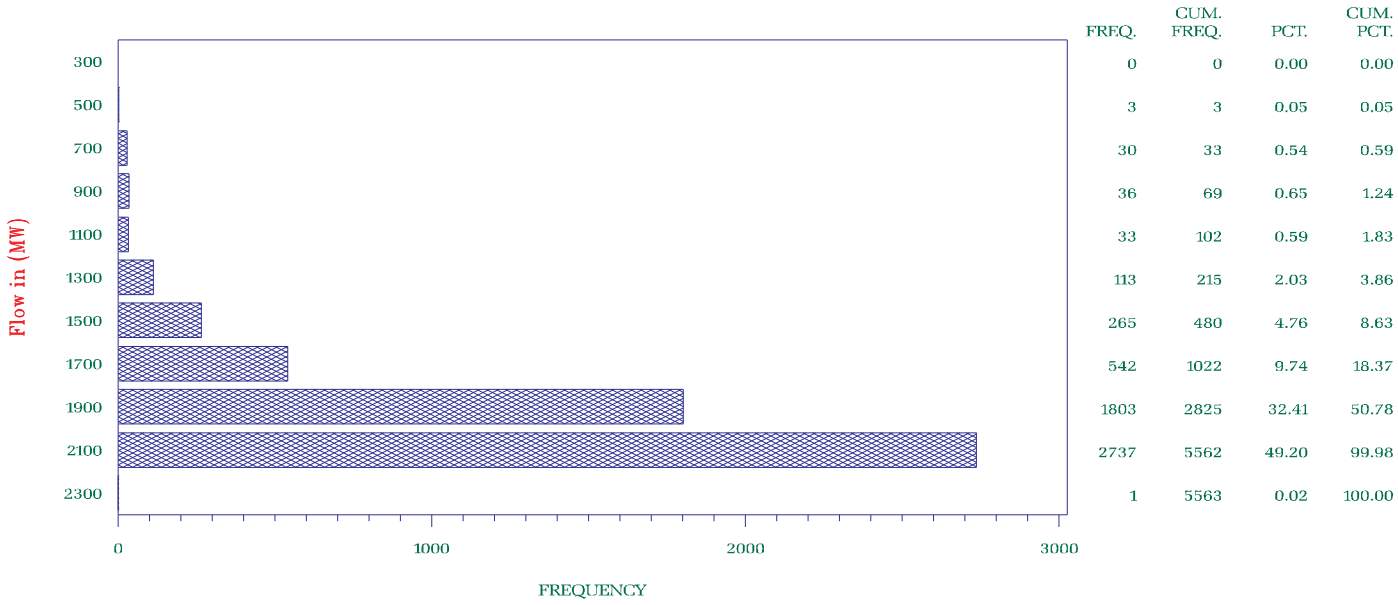
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Margin to New England – NY Limit



NYISO Frequency Interface Flow For January – December 2002

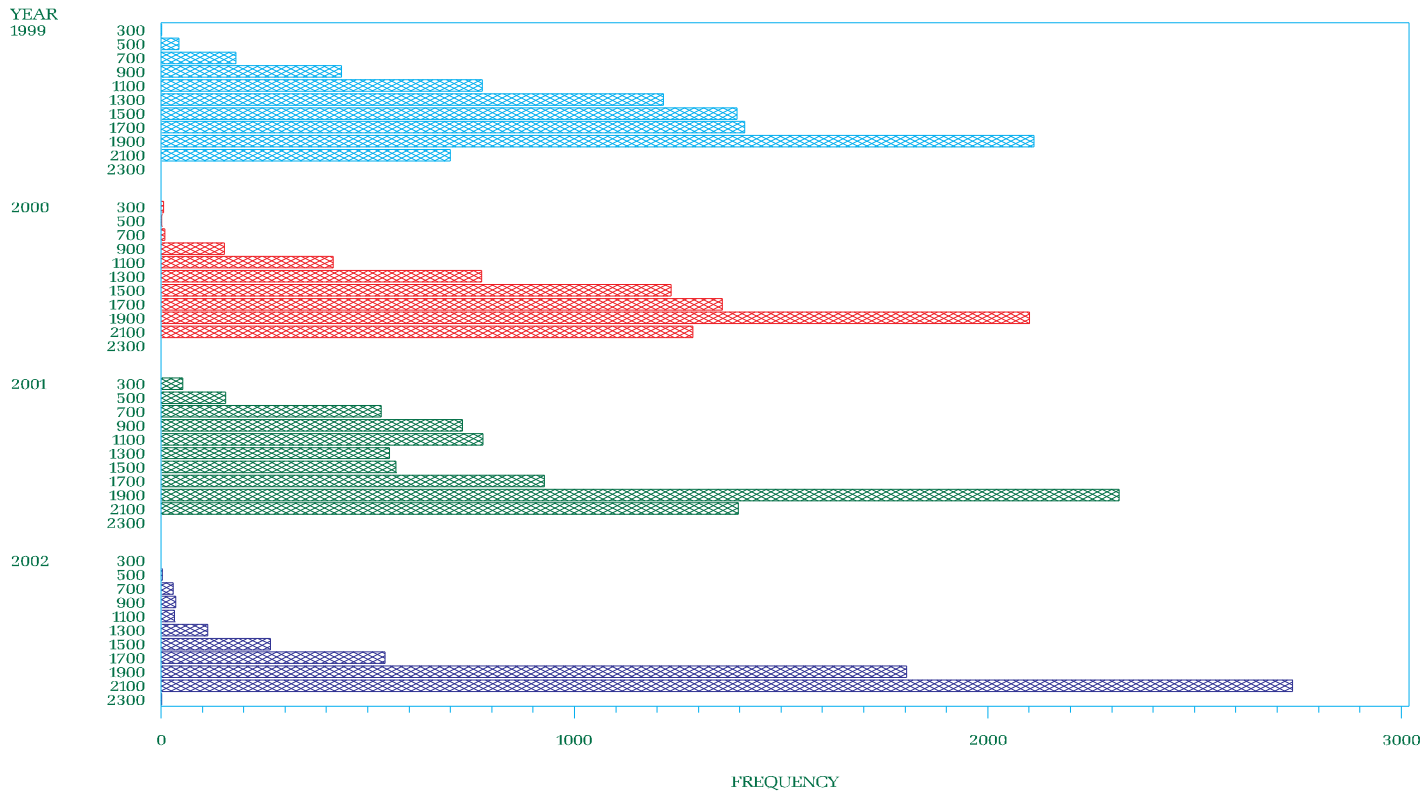
Margin to NY–New England Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
300	0	0	0.00	0.00
500	3	3	0.05	0.05
700	30	33	0.54	0.59
900	36	69	0.65	1.24
1100	33	102	0.59	1.83
1300	113	215	2.03	3.86
1500	265	480	4.76	8.63
1700	542	1022	9.74	18.37
1900	1803	2825	32.41	50.78
2100	2737	5562	49.20	99.98
2300	1	5563	0.02	100.00

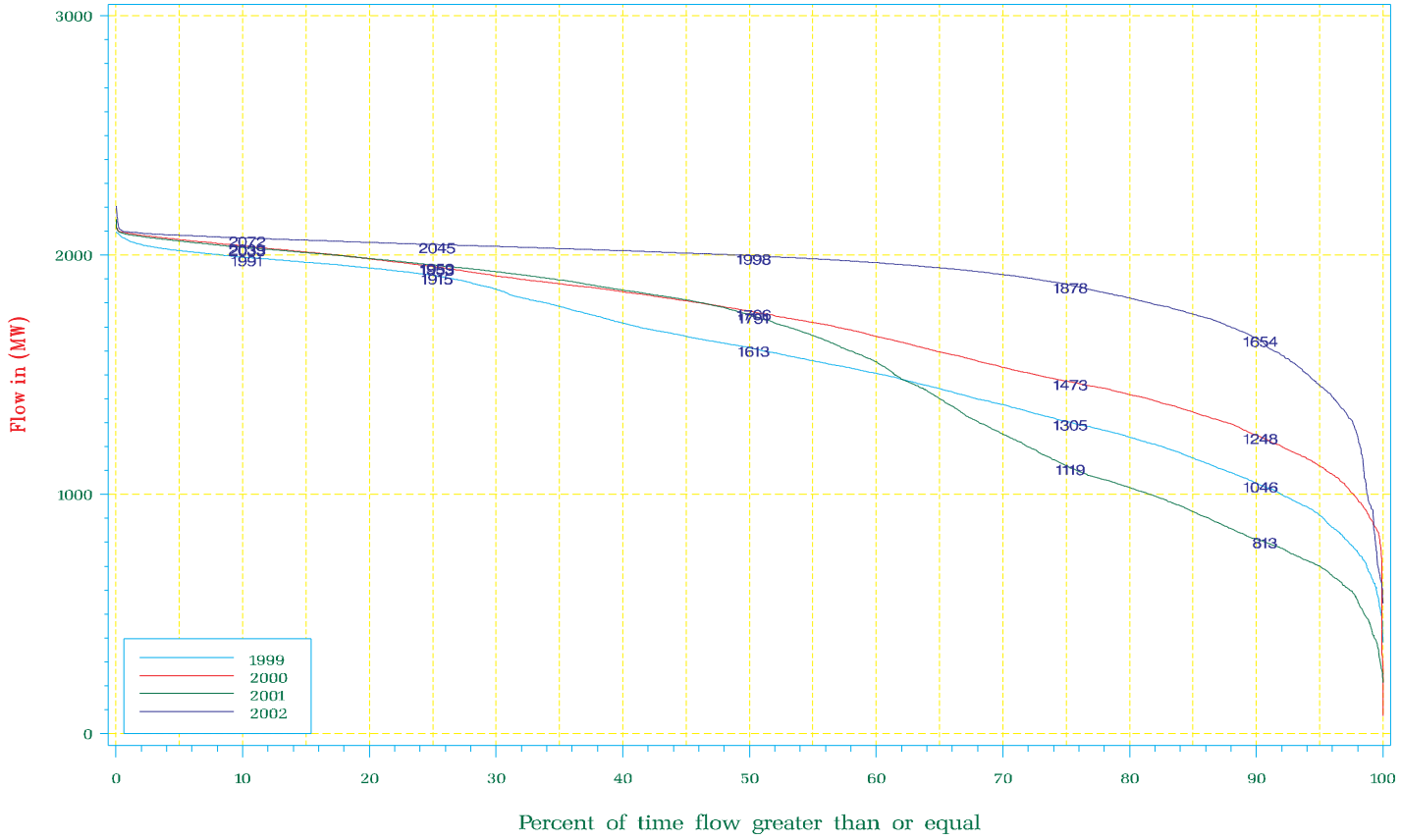
NYISO Frequency Interface Flow For January 1999 – December 2002

Margin to NY–New England Limit



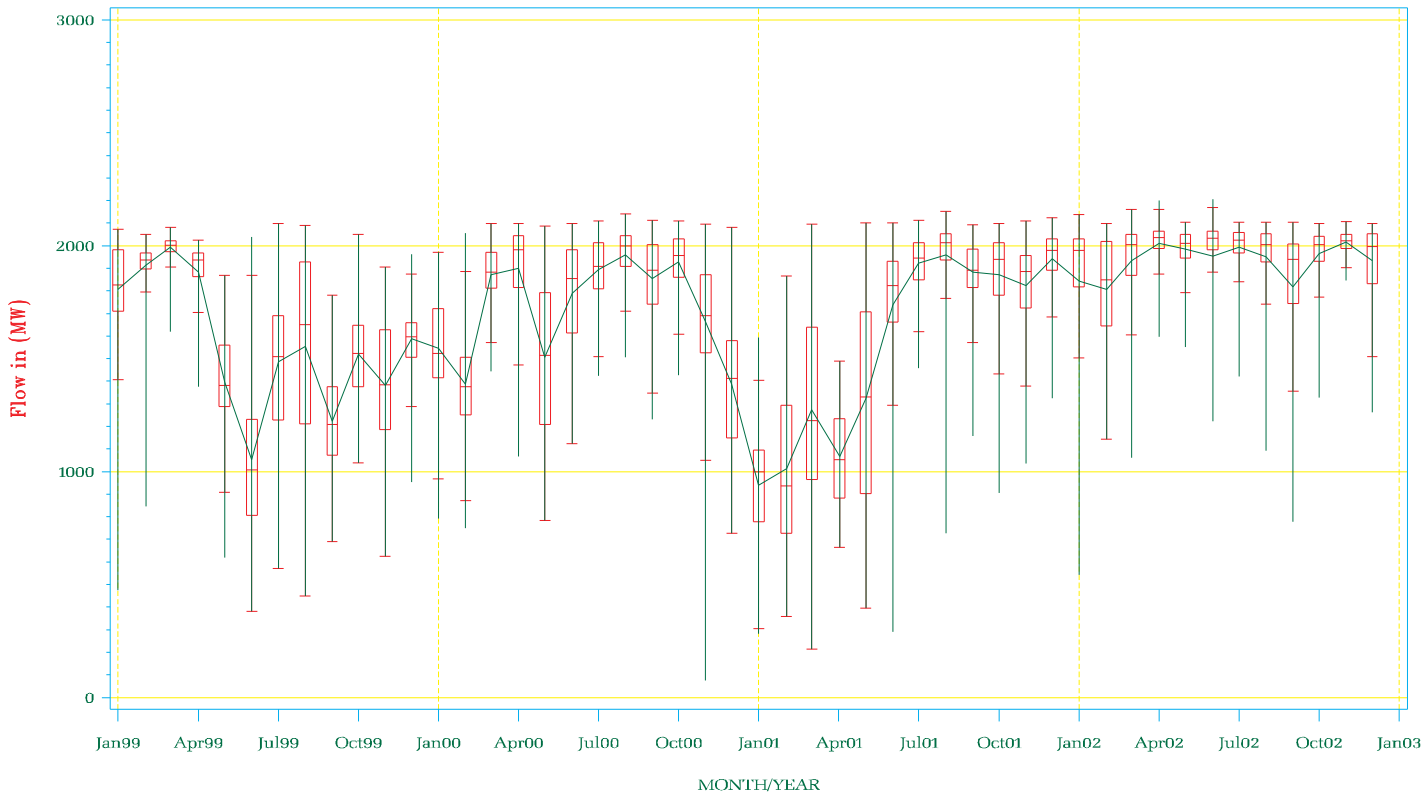
NYISO Percent of time Interface Flow For January 1999 – December 2002

Margin to NY–New England Limit



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Margin to NY–New England Limit



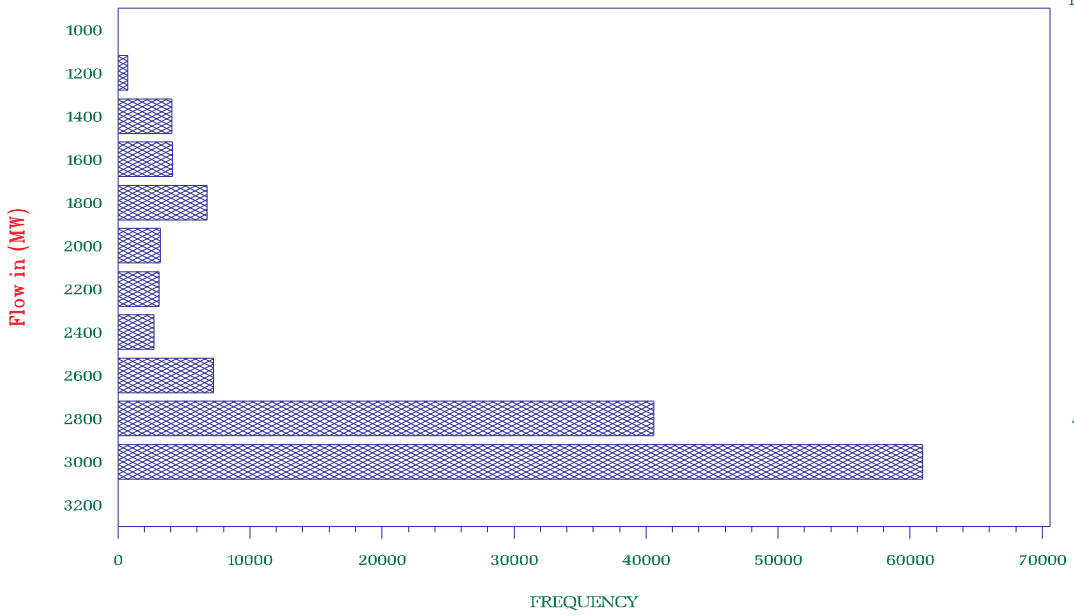
This page is intentionally left blank.

Appendix C – Interface Limits

TABLE OF CONTENTS

NYISO Frequency Interface Flow For January – December 2002

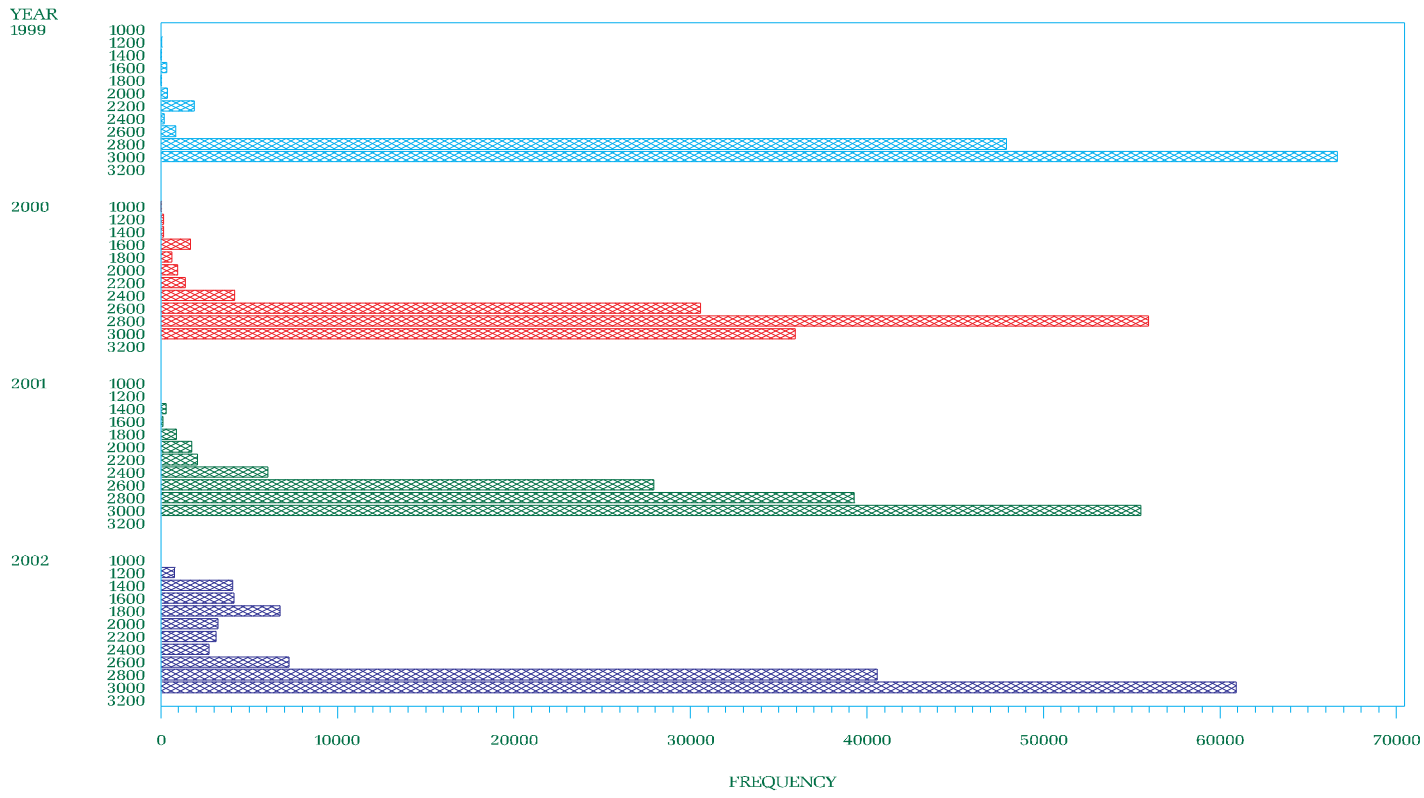
Central East Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1000	0	0	0.00	0.00
1200	756	756	0.57	0.57
1400	4066	4822	3.04	3.61
1600	4152	8974	3.11	6.72
1800	6739	15713	5.05	11.76
2000	3230	18943	2.42	14.18
2200	3123	22066	2.34	16.52
2400	2728	24794	2.04	18.56
2600	7248	32042	5.43	23.99
2800	40592	72634	30.39	54.38
3000	60941	133575	45.62	100.00
3200	0	133575	0.00	100.00

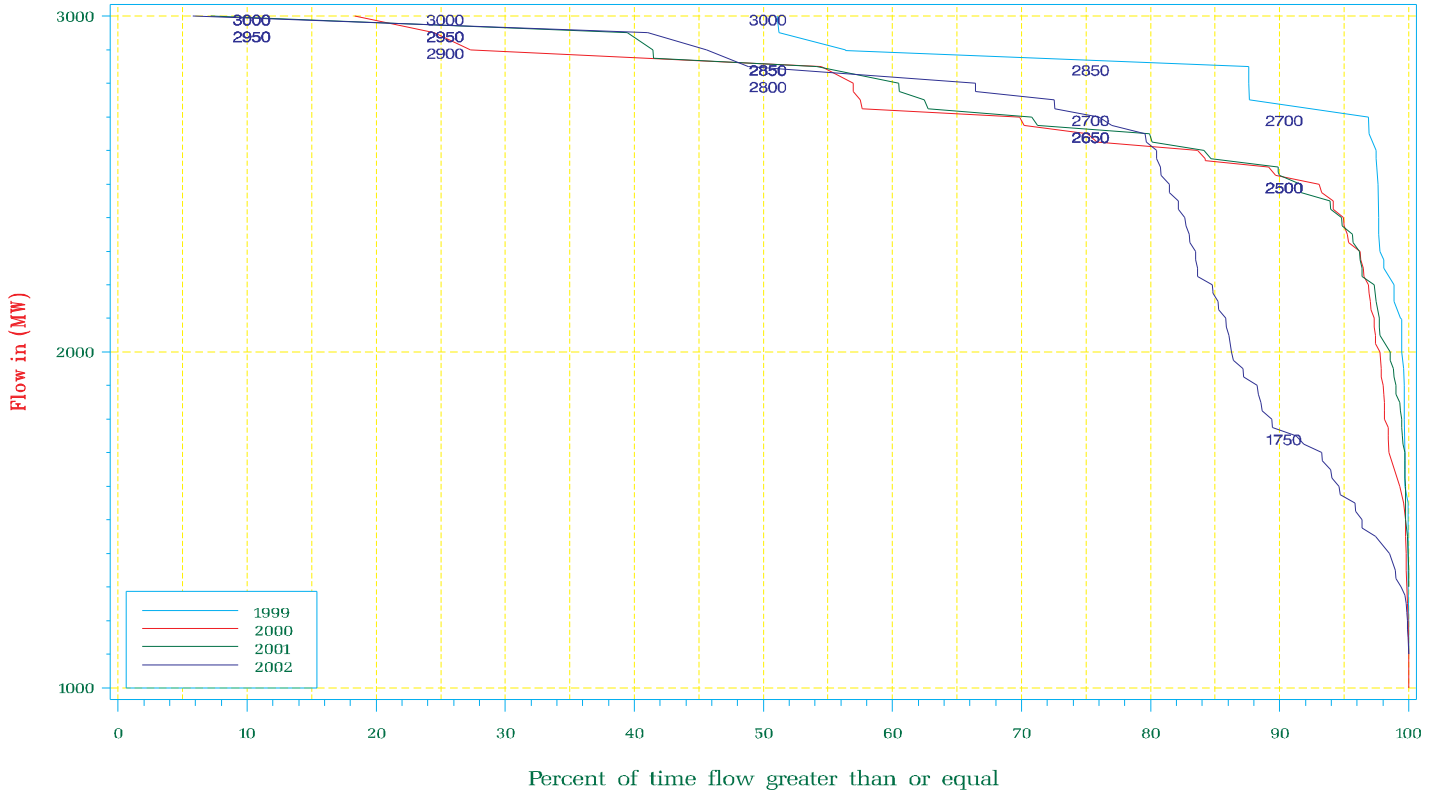
NYISO Frequency Interface Flow For January 1999 – December 2002

Central East Limit



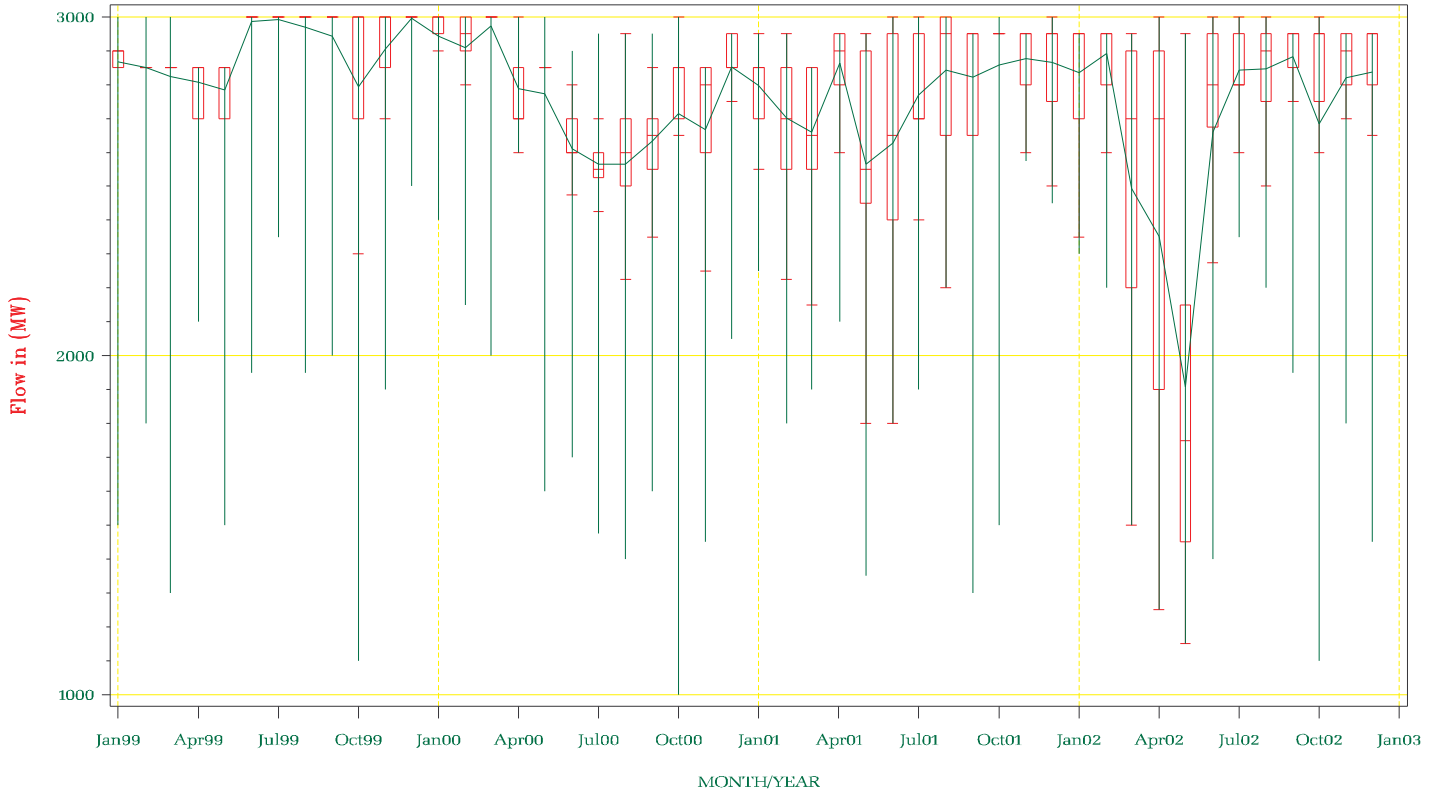
NYISO Percent of time Interface Flow For January 1999 – December 2002

Central East Limit



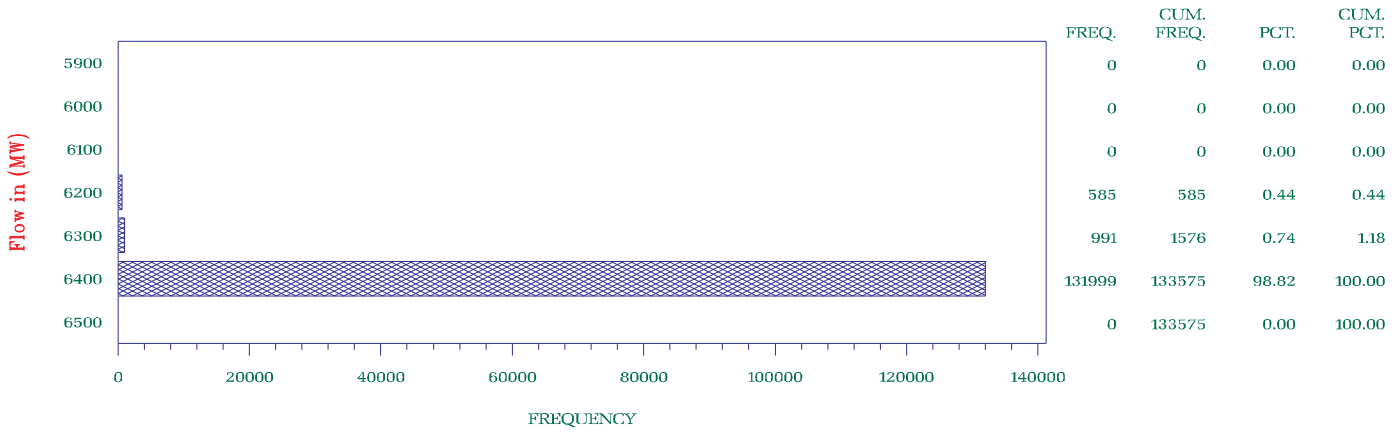
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Central East Limit



NYISO Frequency Interface Flow For January – December 2002

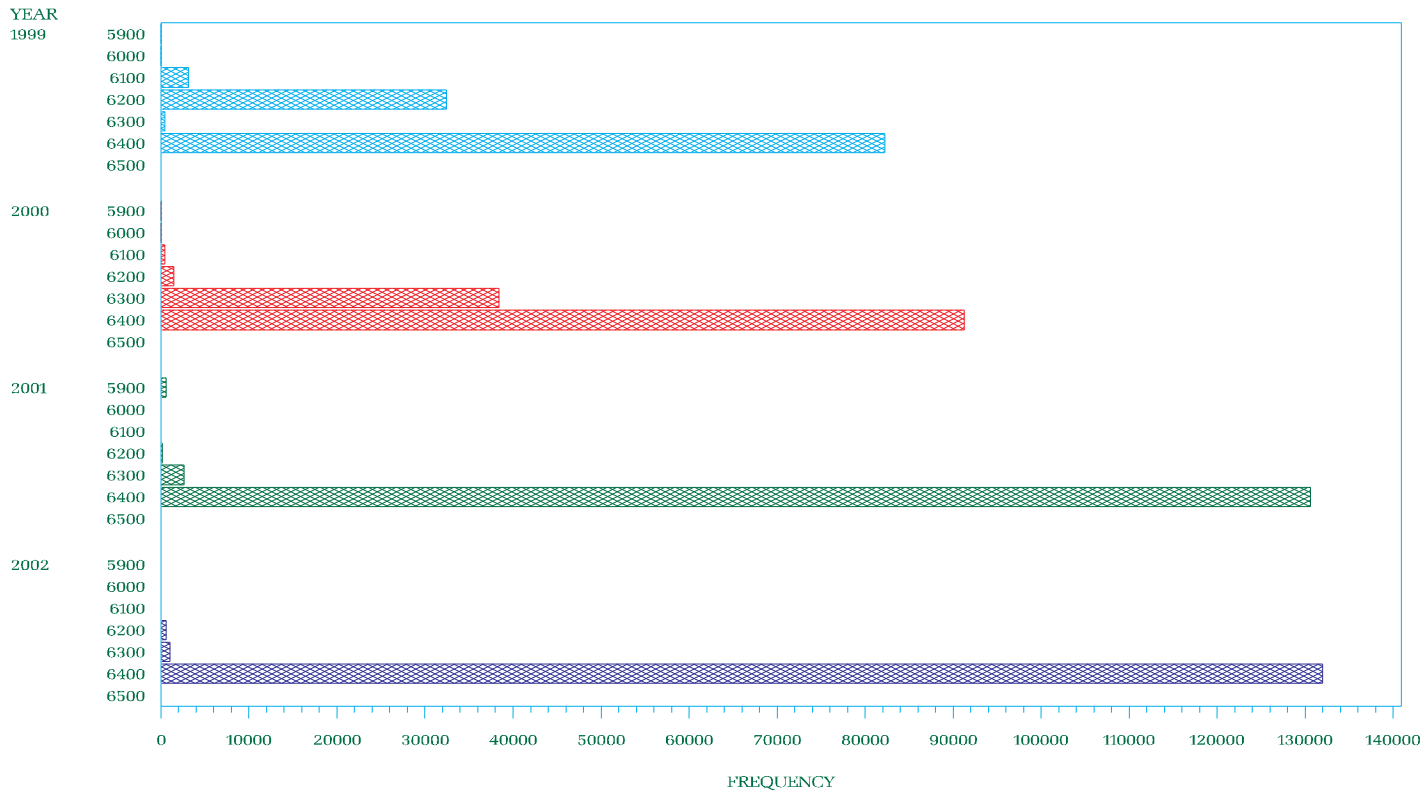
Total East Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
5900	0	0	0.00	0.00
6000	0	0	0.00	0.00
6100	0	0	0.00	0.00
6200	585	585	0.44	0.44
6300	991	1576	0.74	1.18
6400	131999	133575	98.82	100.00
6500	0	133575	0.00	100.00

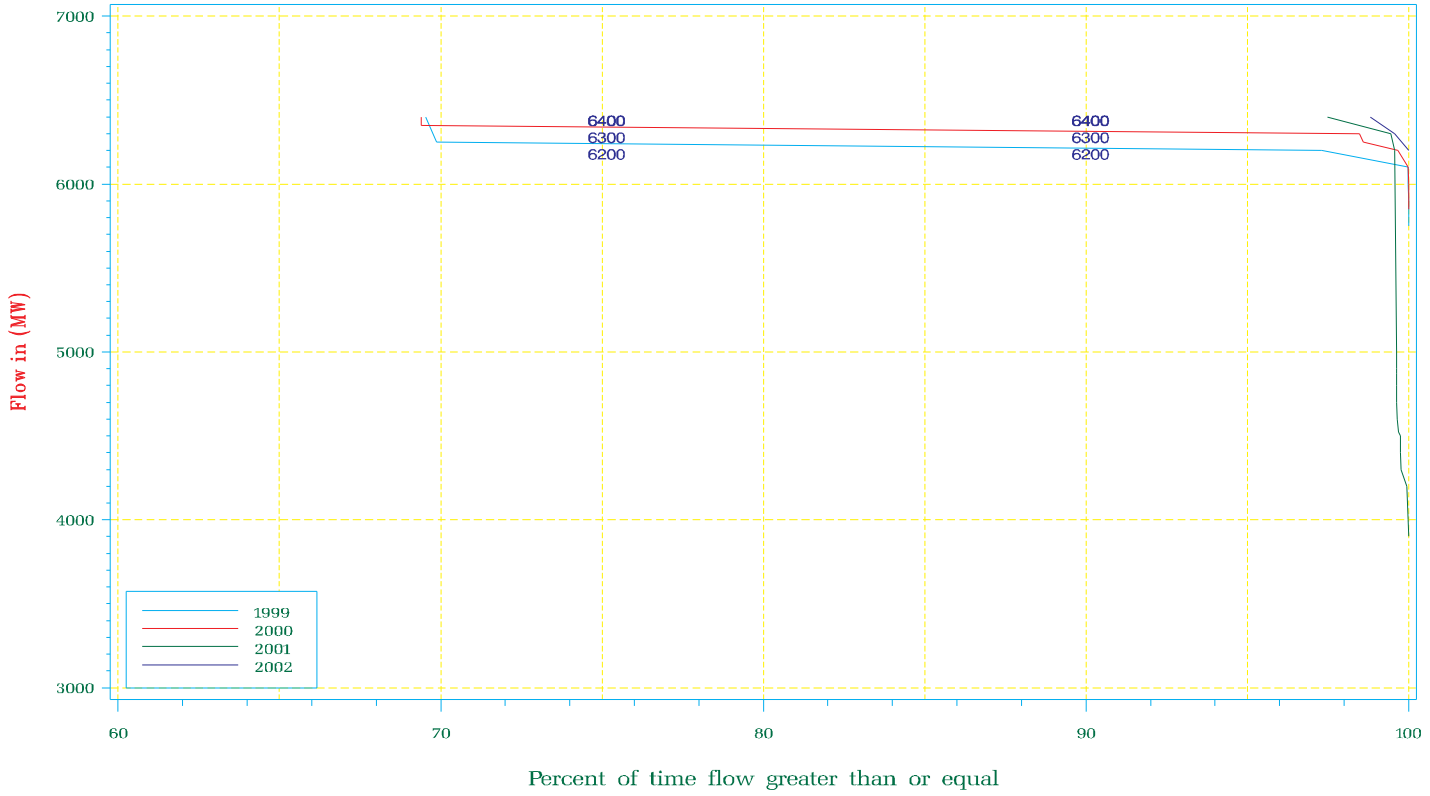
NYISO Frequency Interface Flow For January 1999 – December 2002

Total East Limit



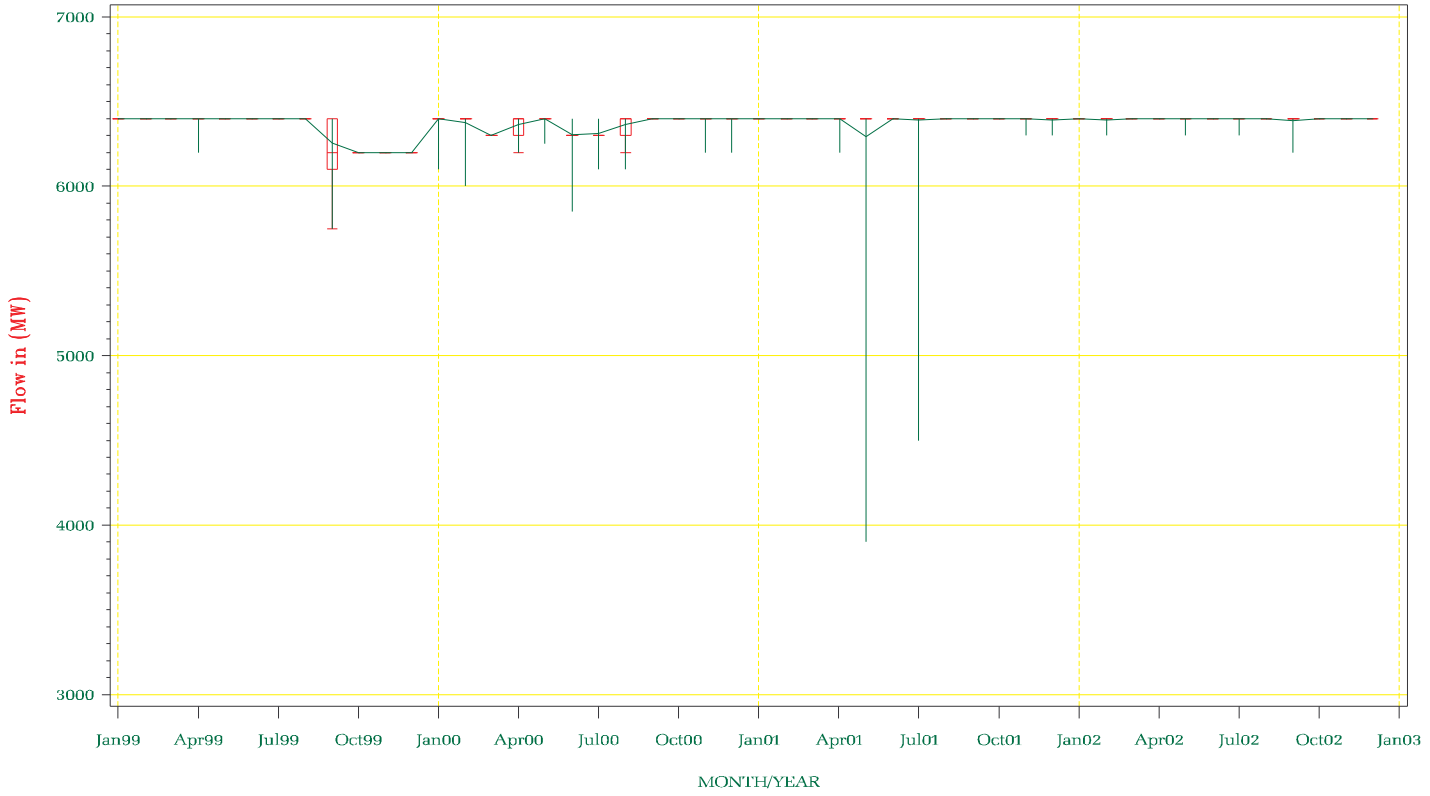
NYISO Percent of time Interface Flow For January 1999 – December 2002

Total East Limit



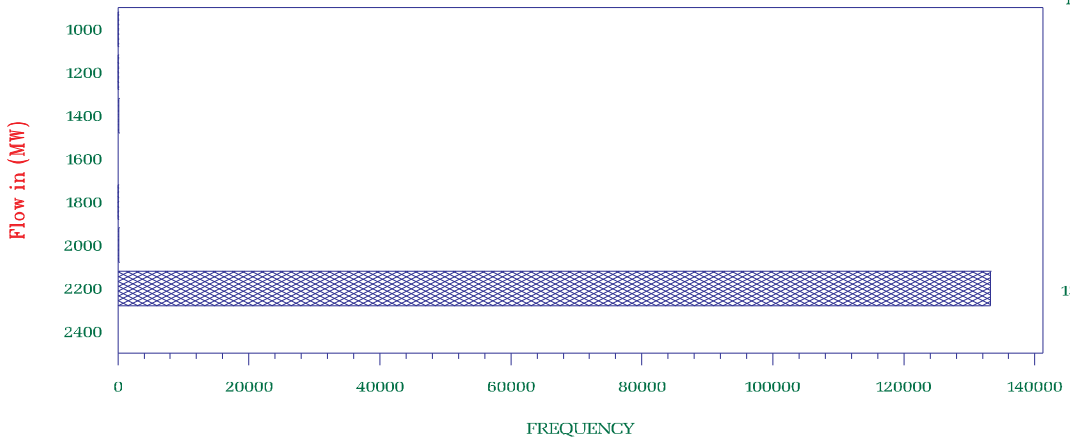
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Total East Limit



NYISO Frequency Interface Flow For January – December 2002

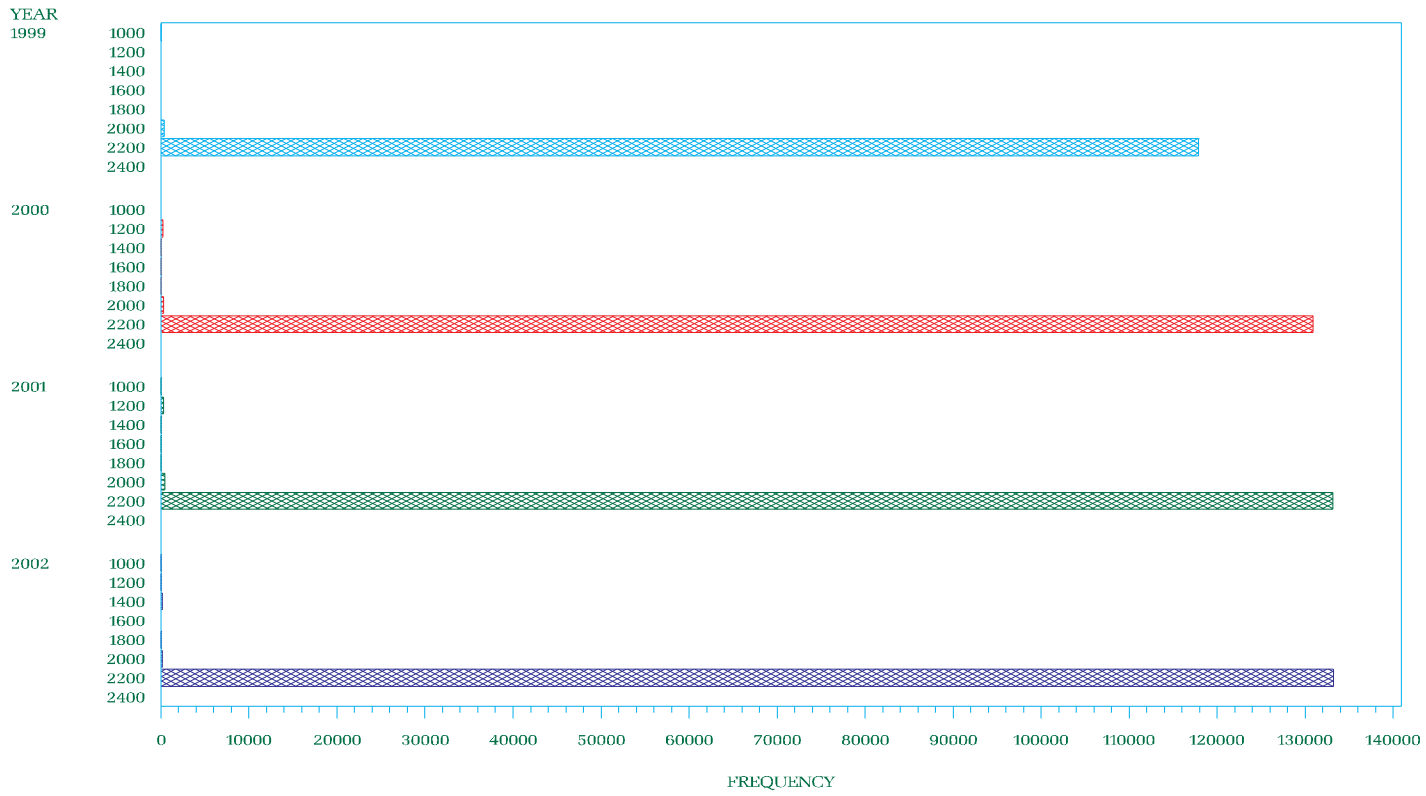
West Central Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1000	12	12	0.00	0.01
1200	20	32	0.01	0.02
1400	143	175	0.11	0.13
1600	0	175	0.00	0.13
1800	23	198	0.02	0.15
2000	173	371	0.13	0.28
2200	133204	133575	99.72	100.00
2400	0	133575	0.00	100.00

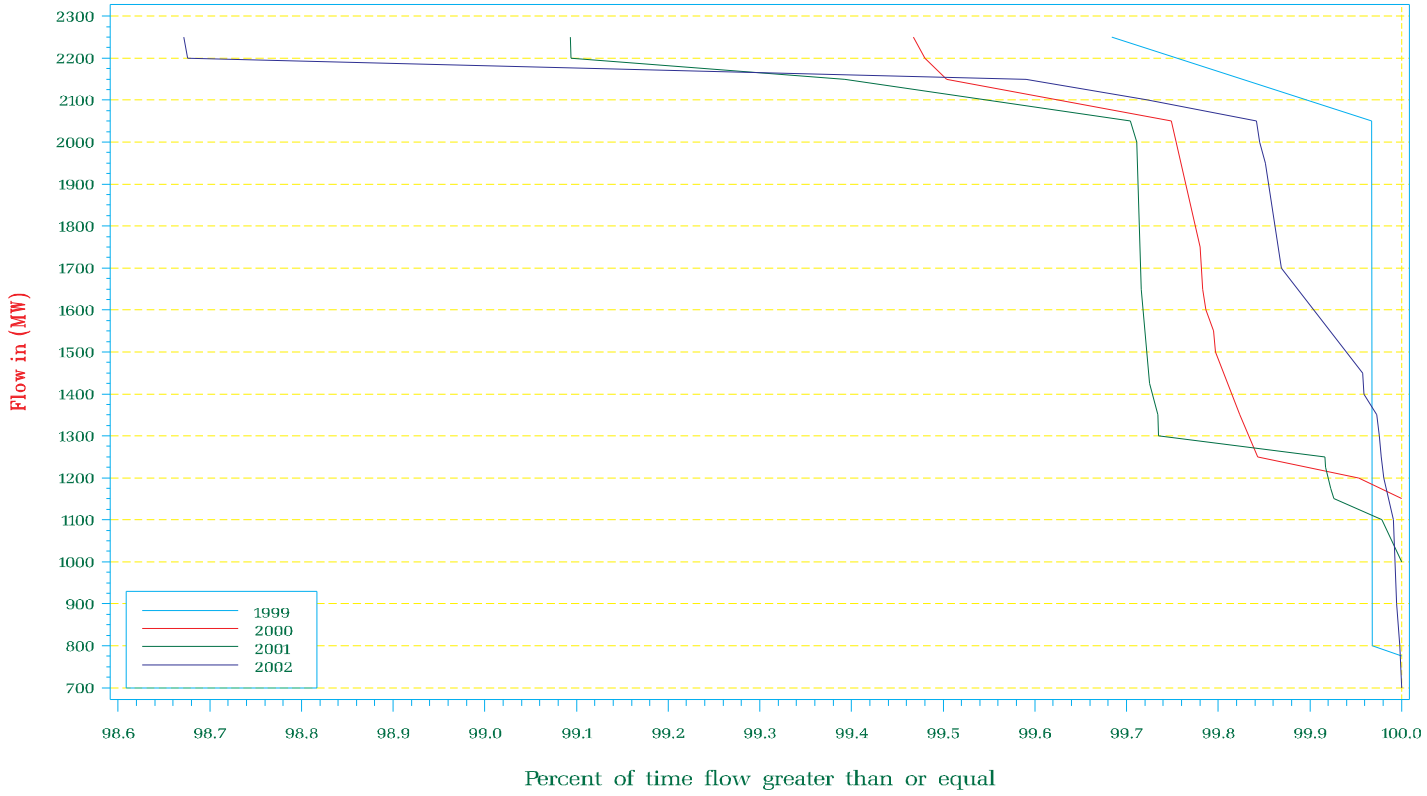
NYISO Frequency Interface Flow For January 1999 – December 2002

West Central Limit



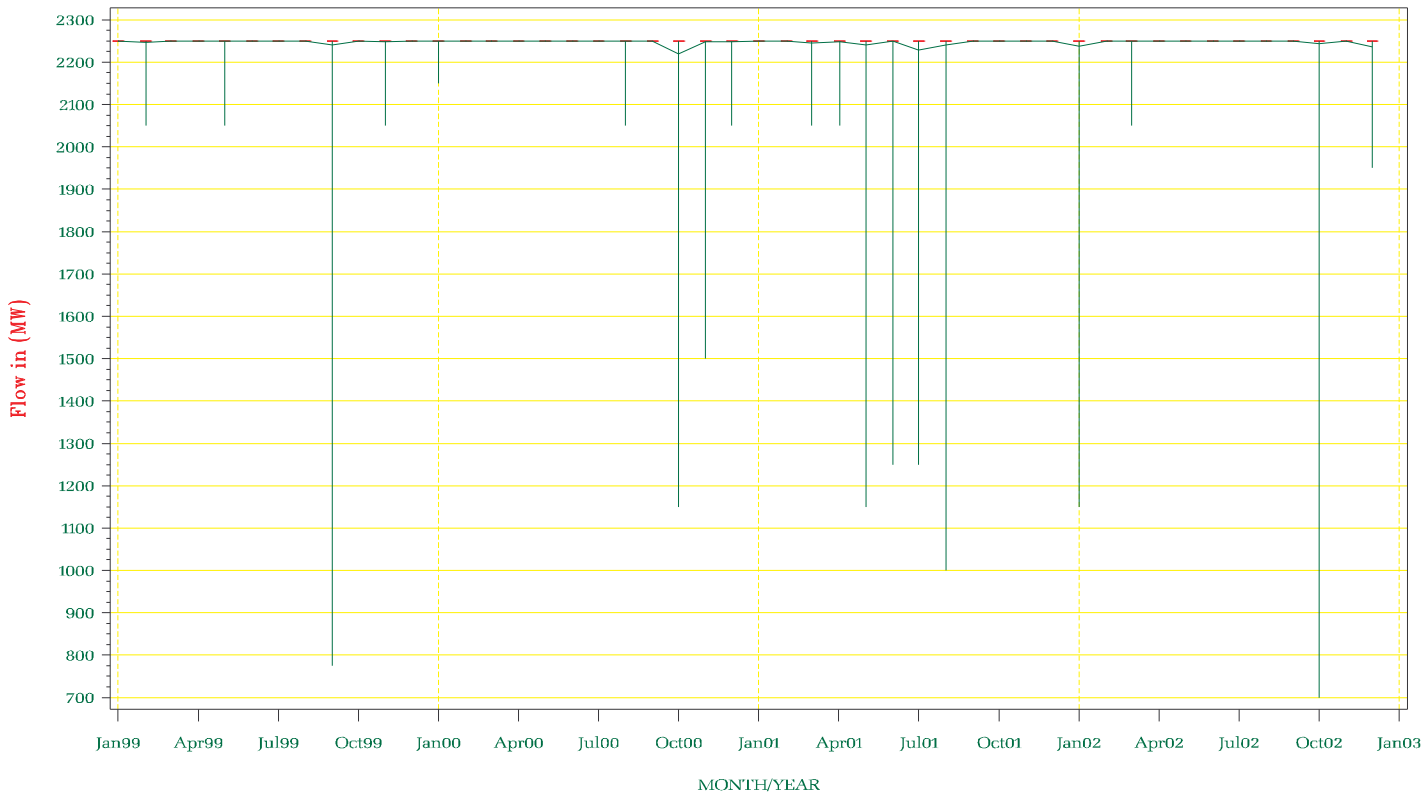
NYISO Percent of time Interface Flow For January 1999 – December 2002

West Central Limit



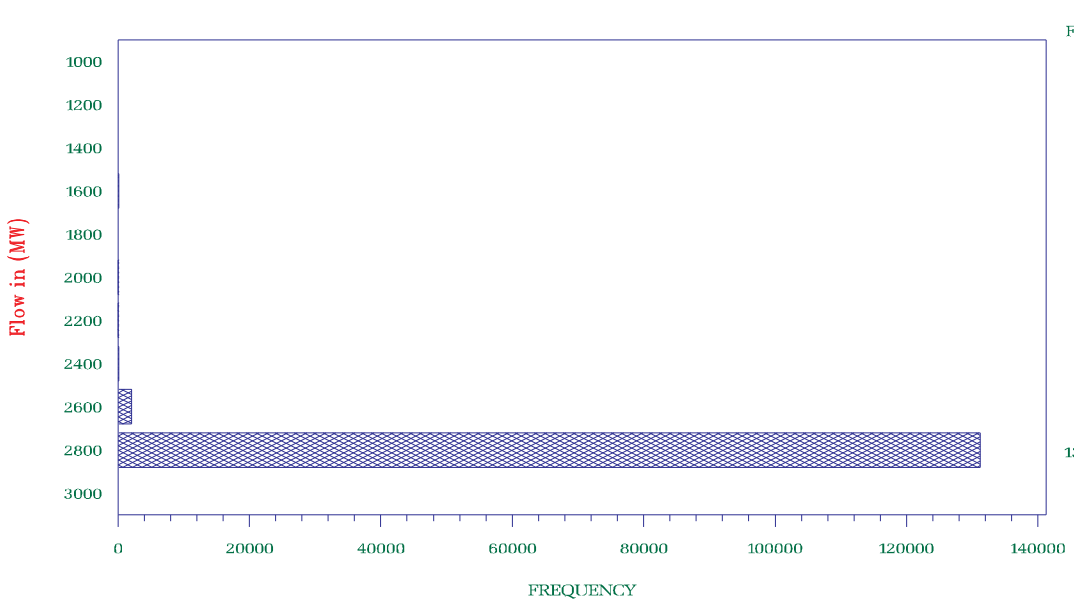
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

West Central Limit



NYISO Frequency Interface Flow For January – December 2002

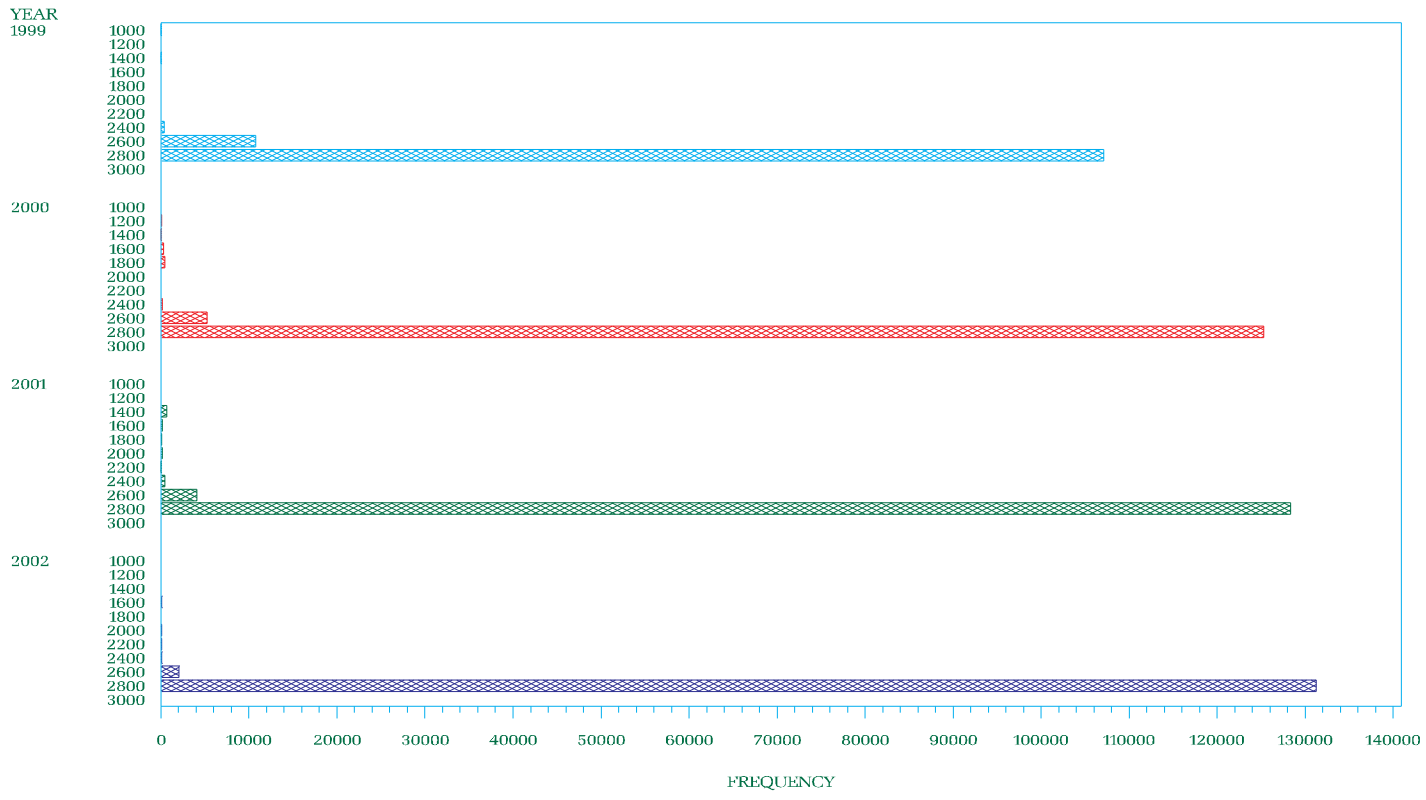
Dysinger East Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1000	0	0	0.00	0.00
1200	0	0	0.00	0.00
1400	0	0	0.00	0.00
1600	87	87	0.07	0.07
1800	0	87	0.00	0.07
2000	46	133	0.03	0.10
2200	48	181	0.04	0.14
2400	92	273	0.07	0.20
2600	2057	2330	1.54	1.74
2800	131245	133575	98.26	100.00
3000	0	133575	0.00	100.00

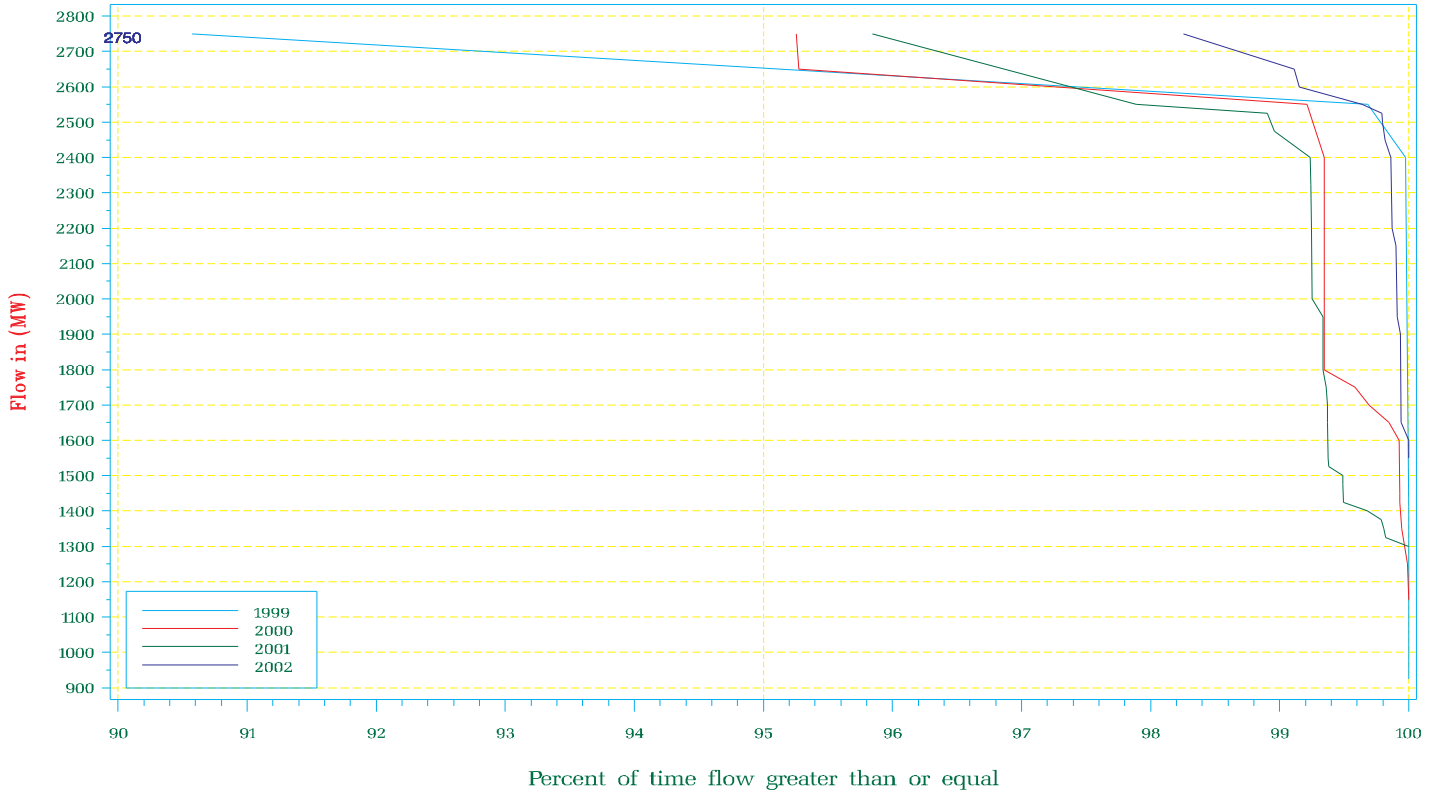
NYISO Frequency Interface Flow For January 1999 – December 2002

Dysinger East Limit



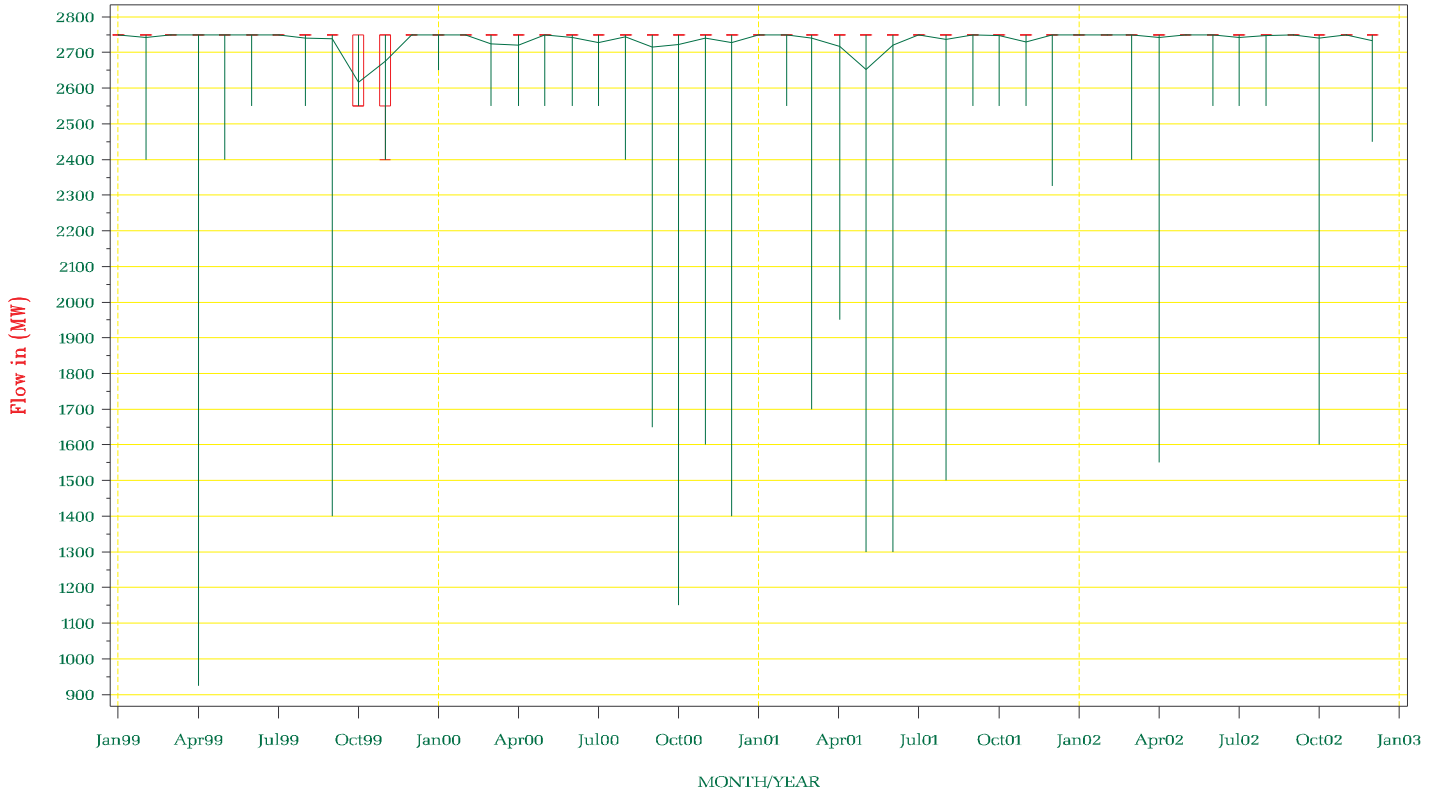
NYISO Percent of time Interface Flow For January 1999 – December 2002

Dysinger East Limit



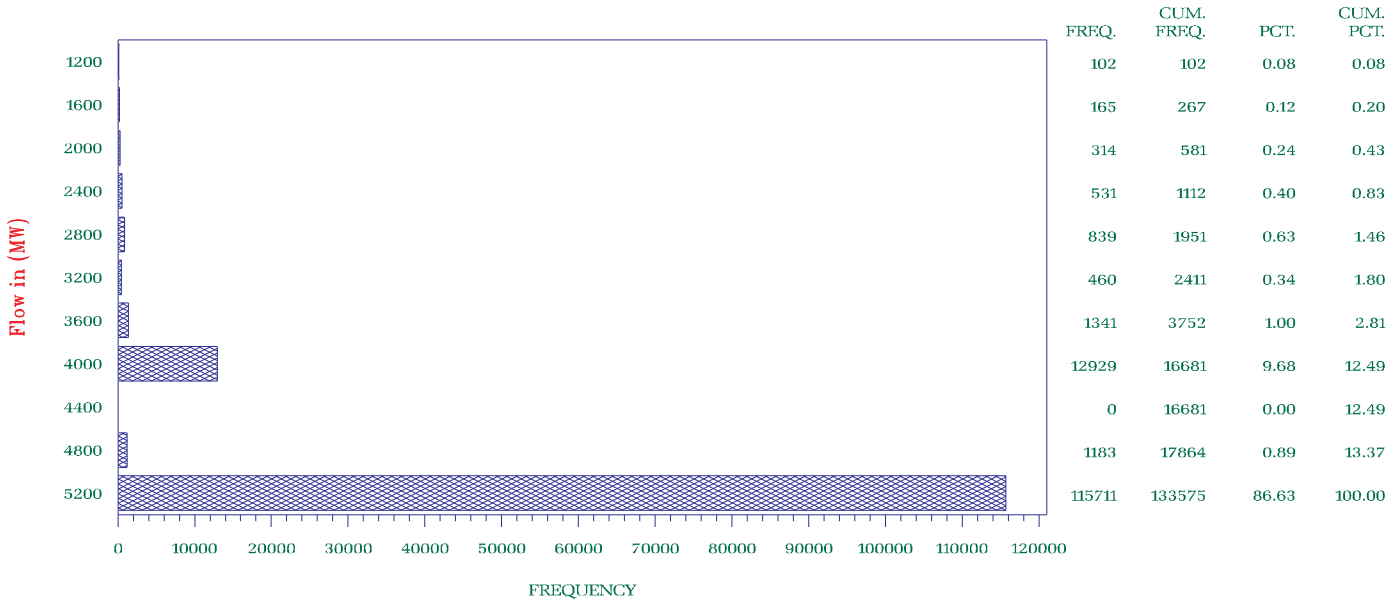
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Dysinger East Limit



NYISO Frequency Interface Flow For January – December 2002

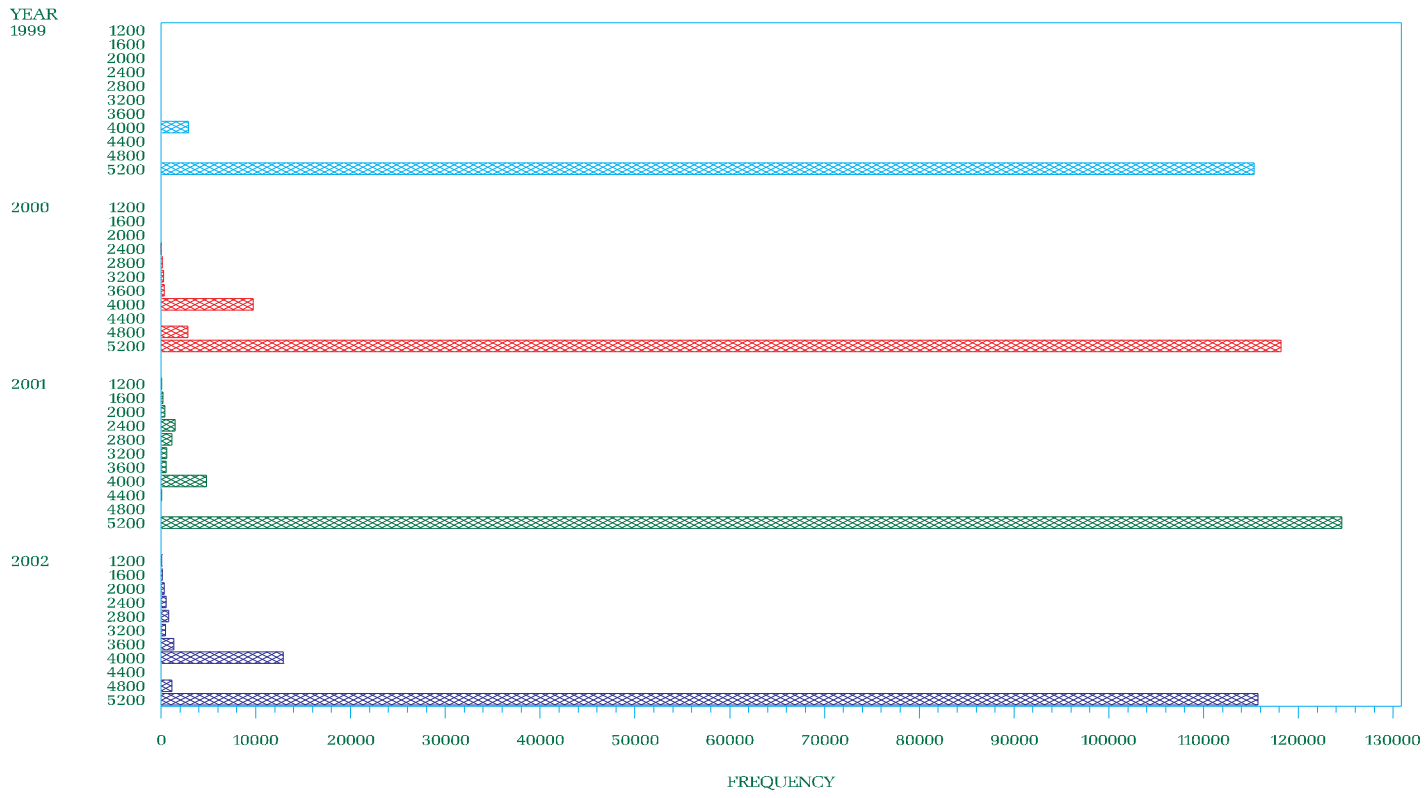
UPNY Con Ed Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1200	102	102	0.08	0.08
1600	165	267	0.12	0.20
2000	314	581	0.24	0.43
2400	531	1112	0.40	0.83
2800	839	1951	0.63	1.46
3200	460	2411	0.34	1.80
3600	1341	3752	1.00	2.81
4000	12929	16681	9.68	12.49
4400	0	16681	0.00	12.49
4800	1183	17864	0.89	13.37
5200	115711	133575	86.63	100.00

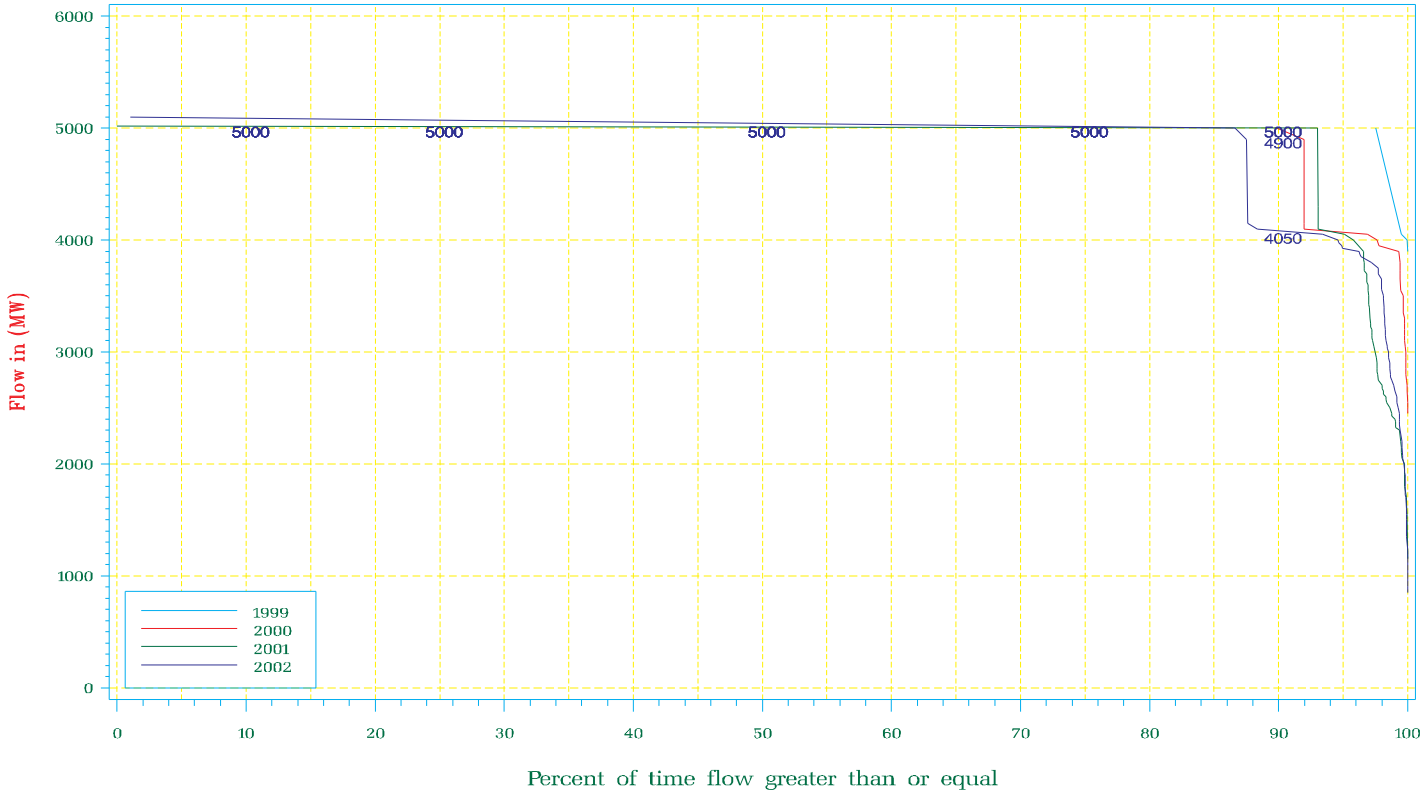
NYISO Frequency Interface Flow For January 1999 – December 2002

UPNY Con Ed Limit



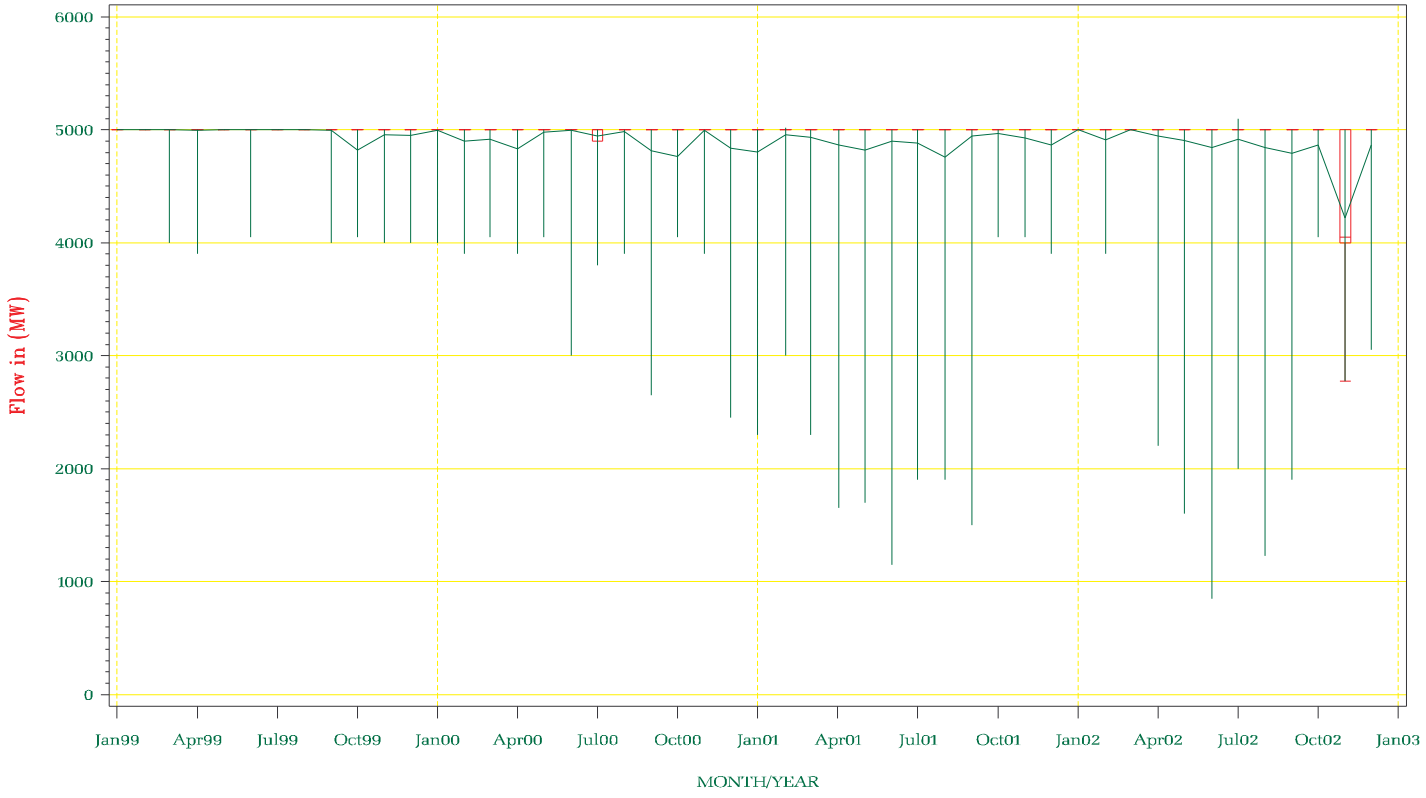
NYISO Percent of time Interface Flow For January 1999 – December 2002

UPNY Con Ed Limit



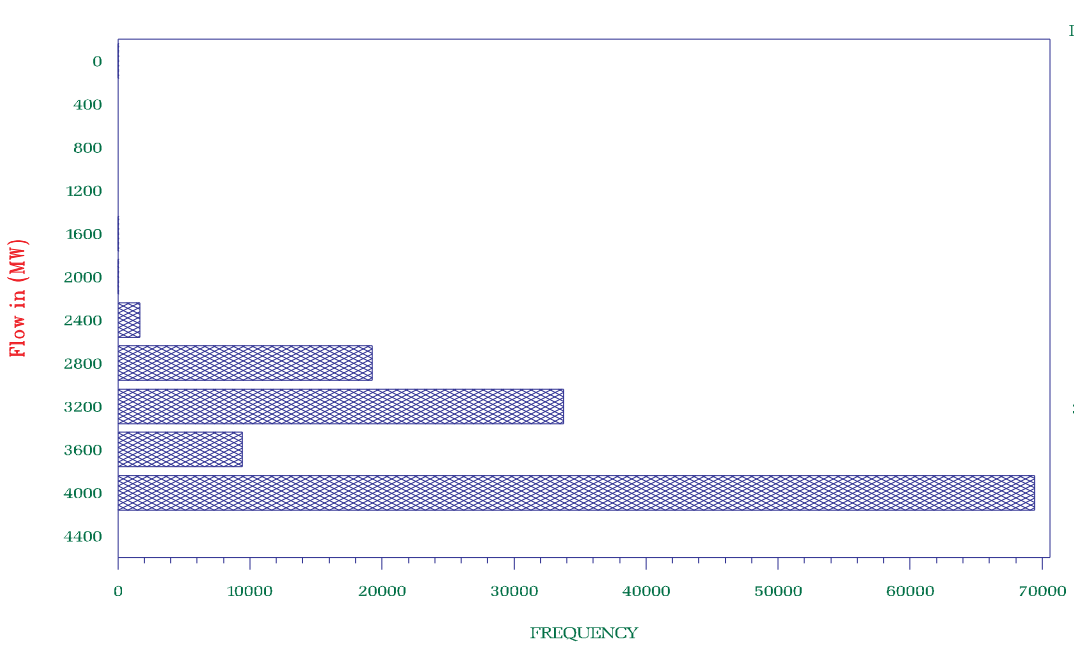
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

UPNY Con Ed Limit



NYISO Frequency Interface Flow For January – December 2002

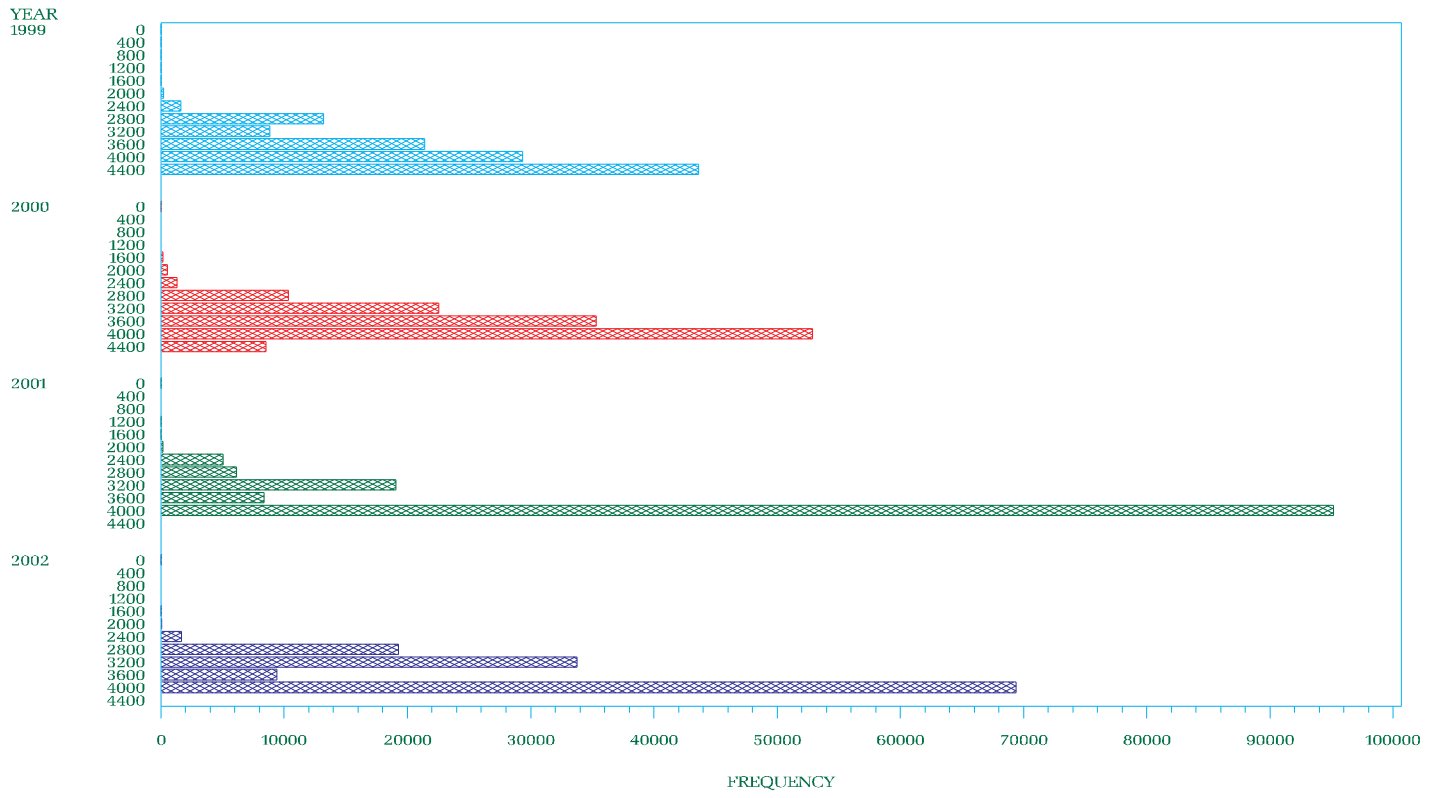
Dunwoodie South Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
0	7	7	0.01	0.01
400	0	7	0.00	0.01
800	0	7	0.00	0.01
1200	0	7	0.00	0.01
1600	3	10	0.00	0.01
2000	37	47	0.03	0.04
2400	1647	1694	1.23	1.27
2800	19269	20963	14.43	15.69
3200	33777	54740	25.29	40.98
3600	9423	64163	7.05	48.04
4000	69412	133575	51.96	100.00
4400	0	133575	0.00	100.00

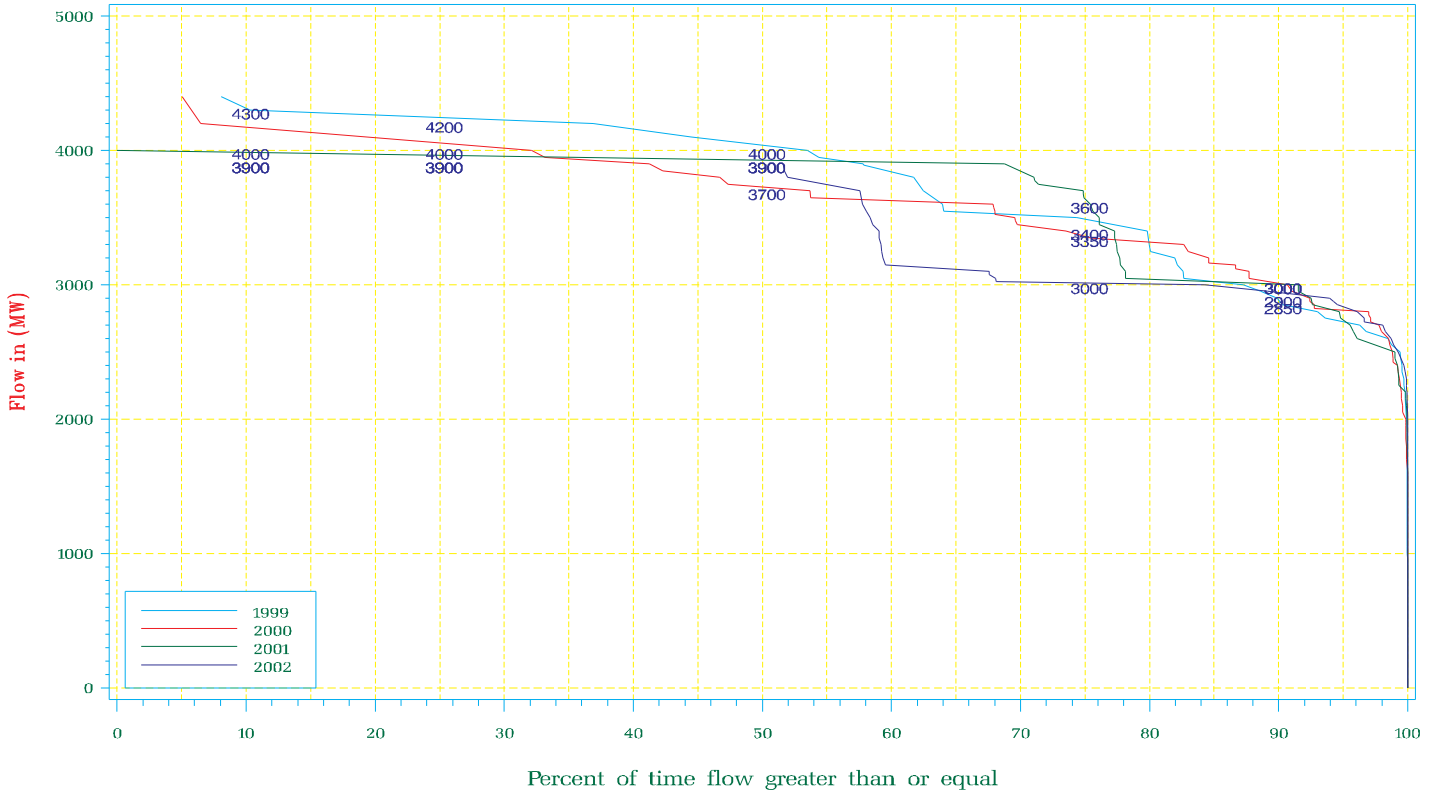
NYISO Frequency Interface Flow For January 1999 – December 2002

Dunwoodie South Limit



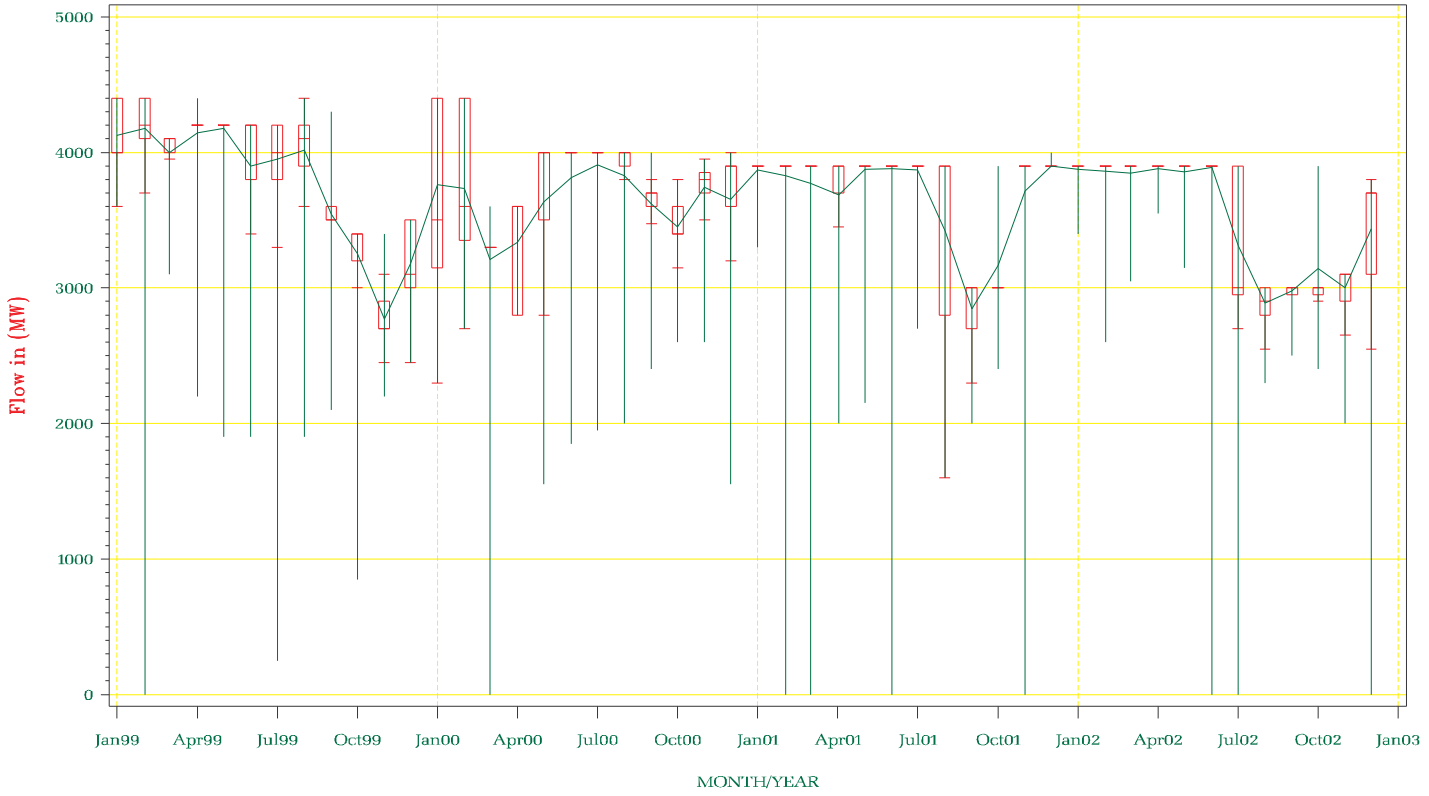
NYISO Percent of time Interface Flow For January 1999 – December 2002

Dunwoodie South Limit



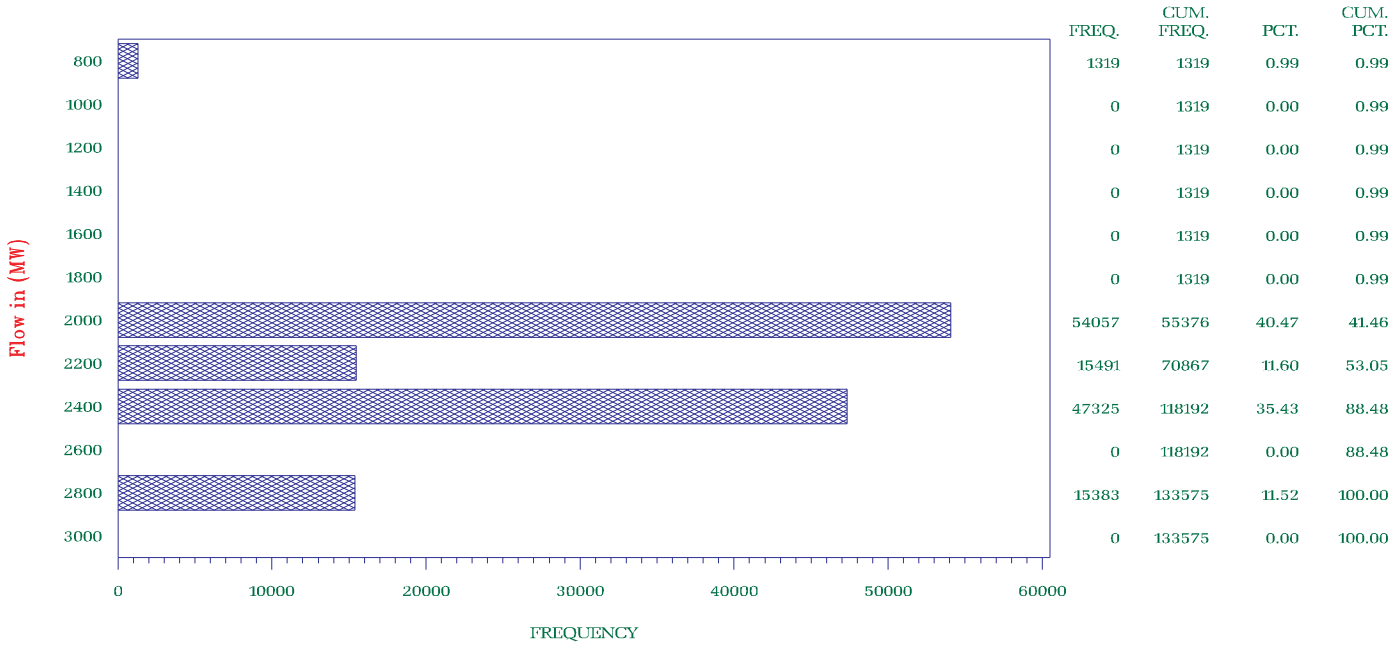
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Dunwoodie South Limit



NYISO Frequency Interface Flow For January – December 2002

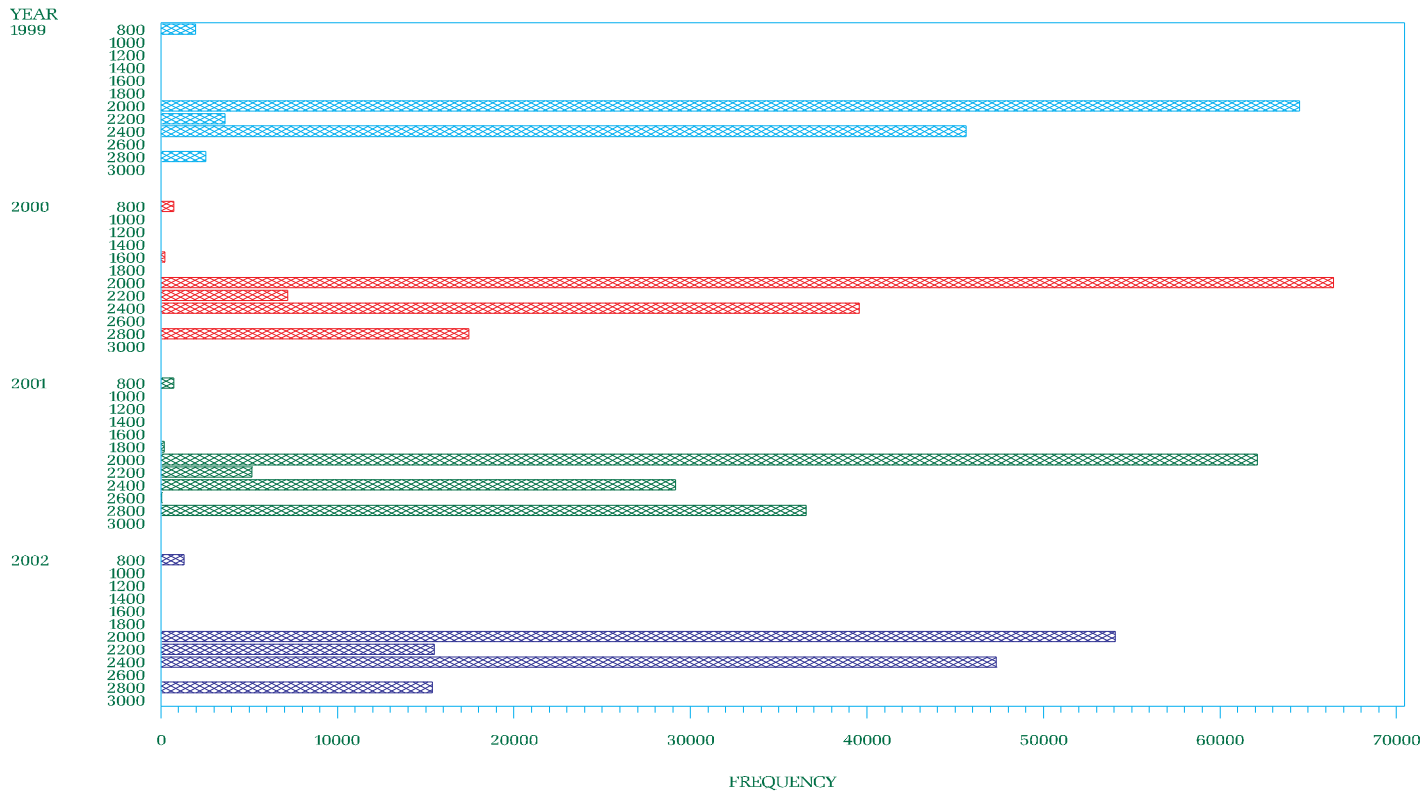
Moses South Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
800	1319	1319	0.99	0.99
1000	0	1319	0.00	0.99
1200	0	1319	0.00	0.99
1400	0	1319	0.00	0.99
1600	0	1319	0.00	0.99
1800	0	1319	0.00	0.99
2000	54057	55376	40.47	41.46
2200	15491	70867	11.60	53.05
2400	47325	118192	35.43	88.48
2600	0	118192	0.00	88.48
2800	15383	133575	11.52	100.00
3000	0	133575	0.00	100.00

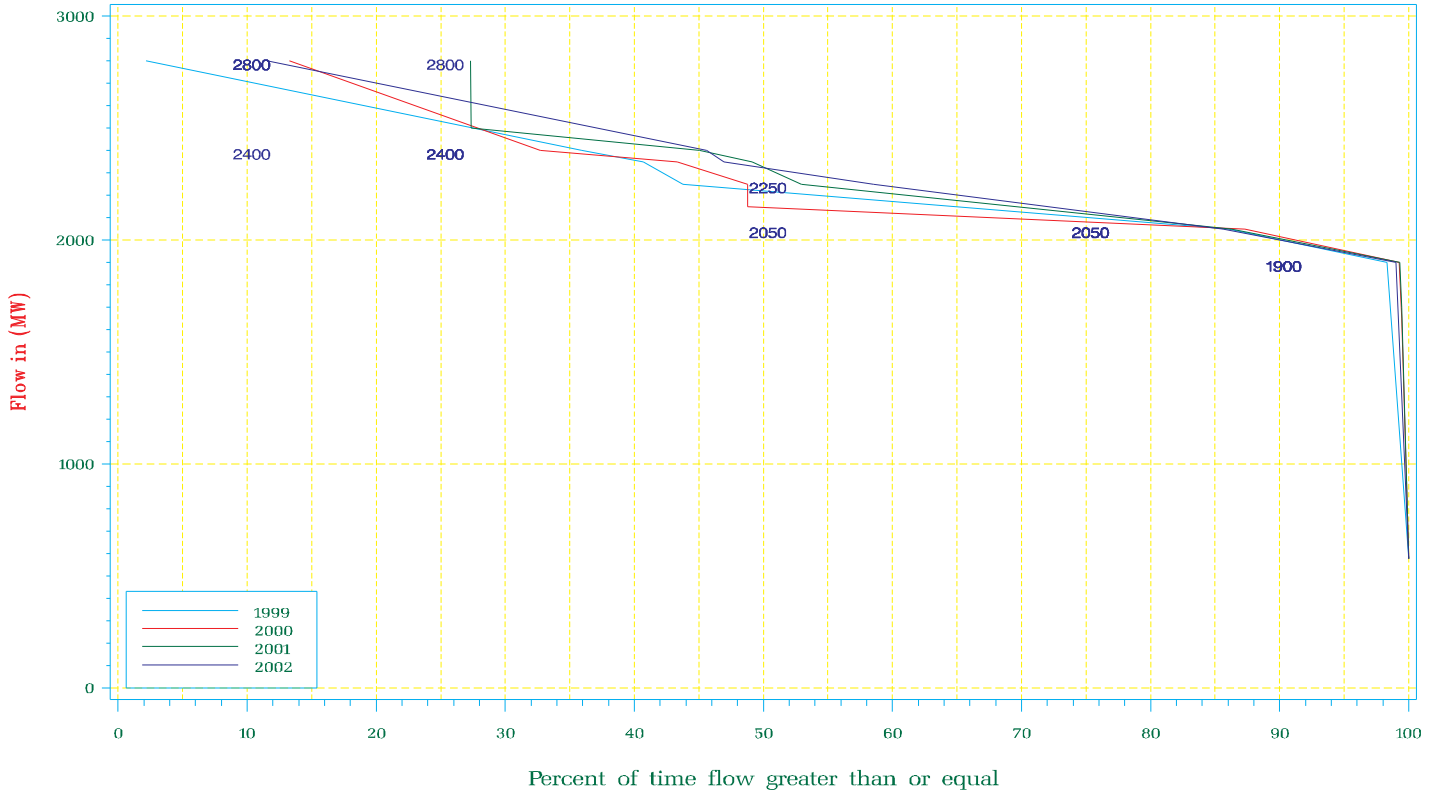
NYISO Frequency Interface Flow For January 1999 – December 2002

Moses South Limit



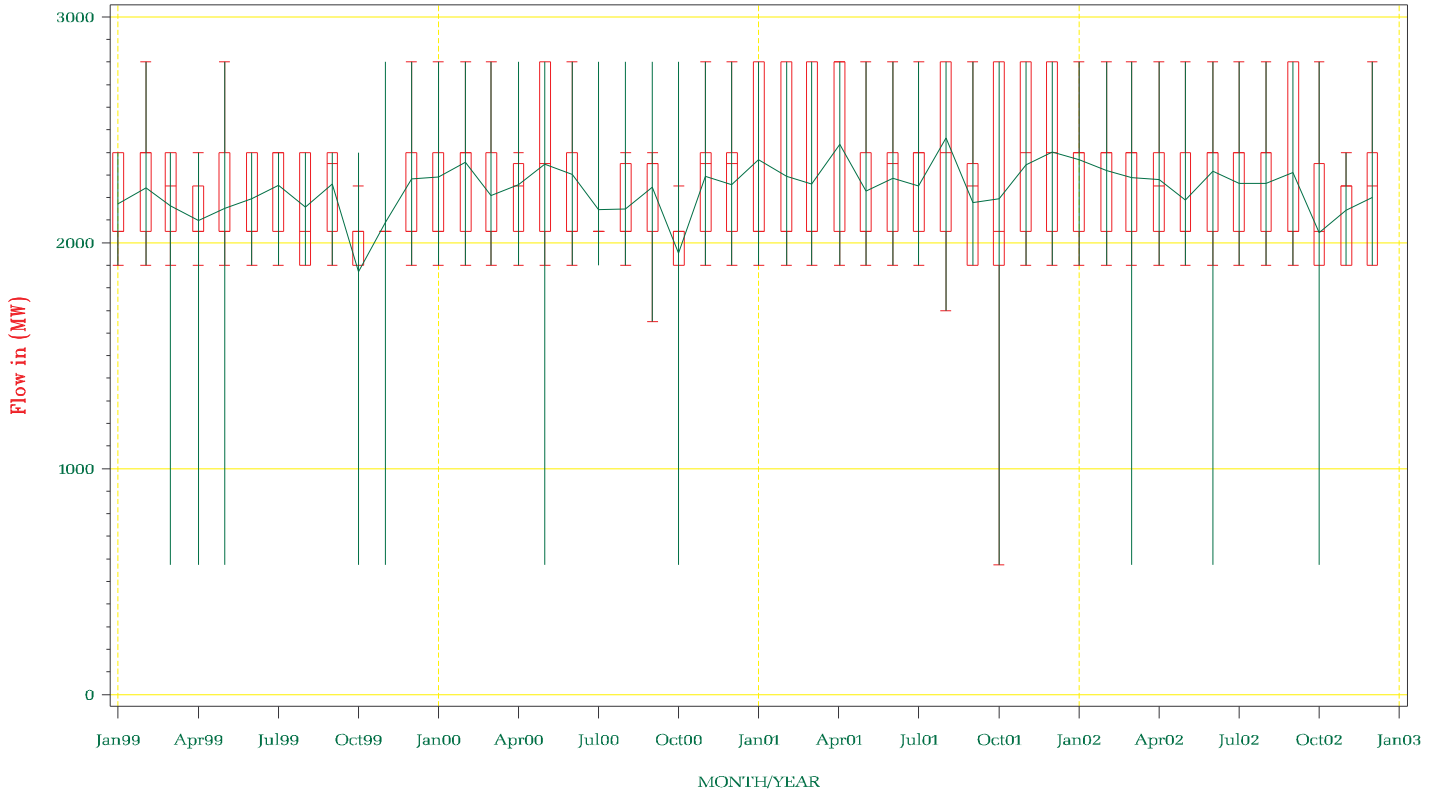
NYISO Percent of time Interface Flow For January 1999 – December 2002

Moses South Limit



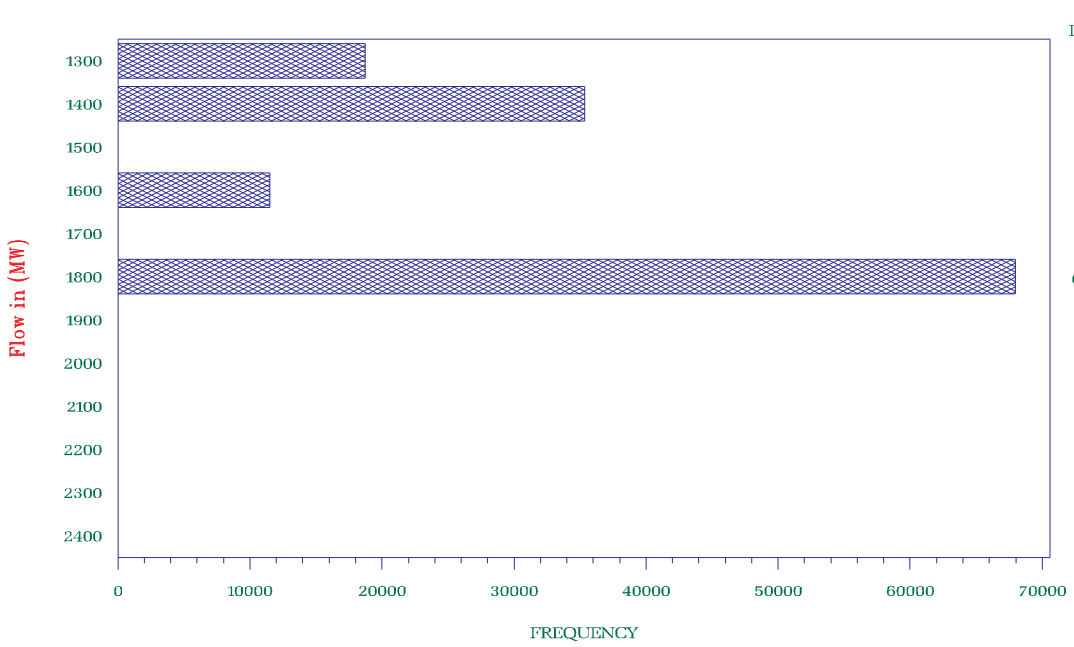
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Moses South Limit



NYISO Frequency Interface Flow For January – December 2002

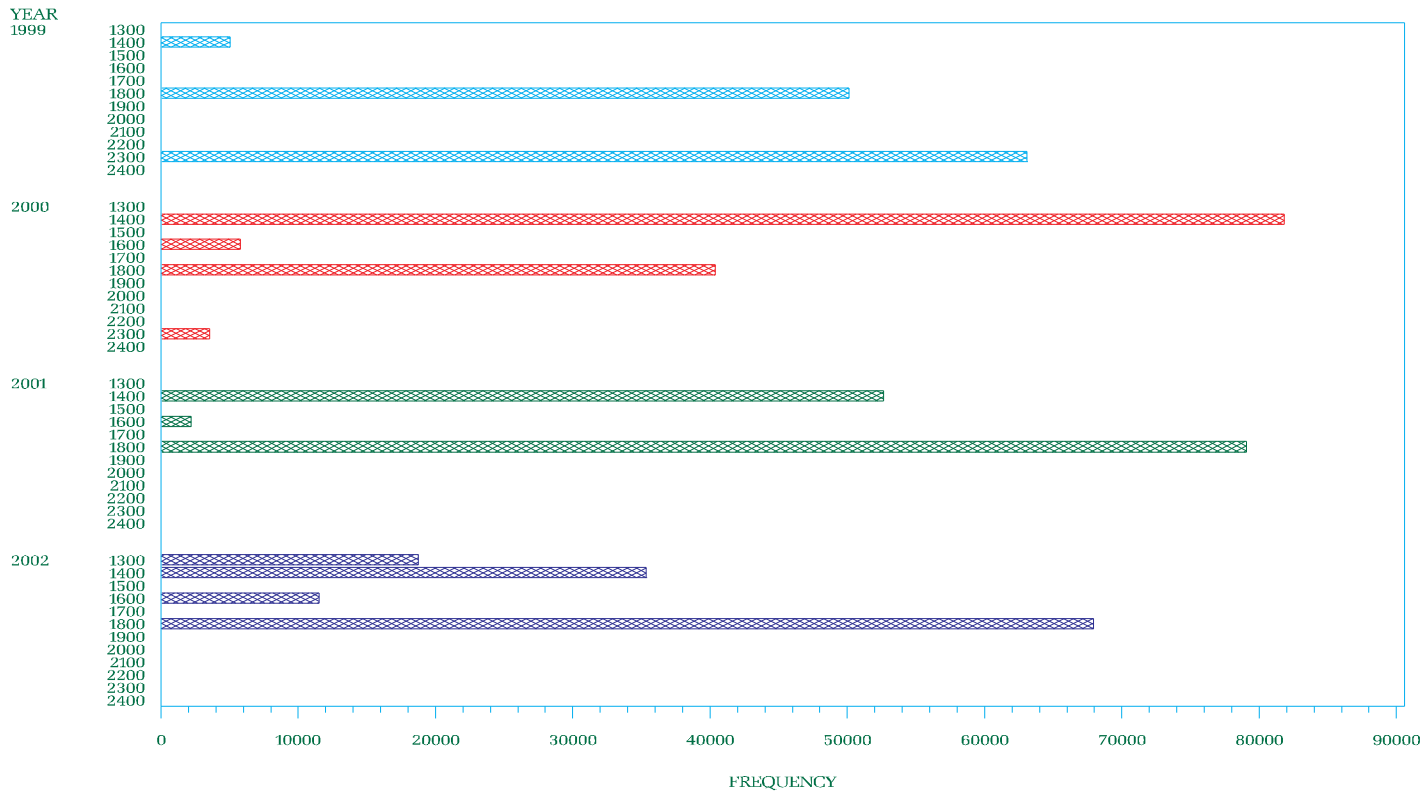
TE – NY Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1300	18747	18747	14.03	14.03
1400	35361	54108	26.47	40.51
1500	0	54108	0.00	40.51
1600	11513	65621	8.62	49.13
1700	0	65621	0.00	49.13
1800	67954	133575	50.87	100.00
1900	0	133575	0.00	100.00
2000	0	133575	0.00	100.00
2100	0	133575	0.00	100.00
2200	0	133575	0.00	100.00
2300	0	133575	0.00	100.00
2400	0	133575	0.00	100.00

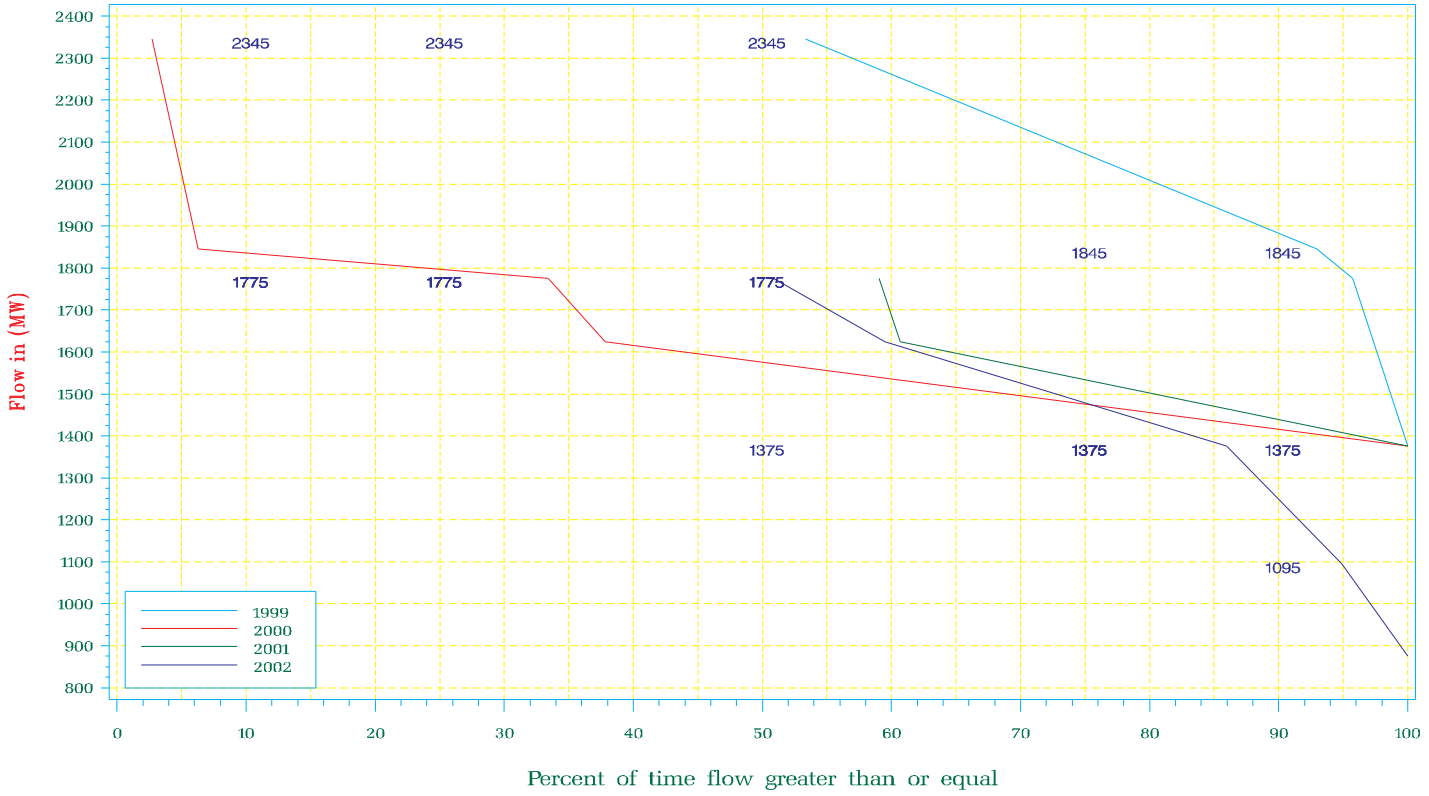
NYISO Frequency Interface Flow For January 1999 – December 2002

TE – NY Limit



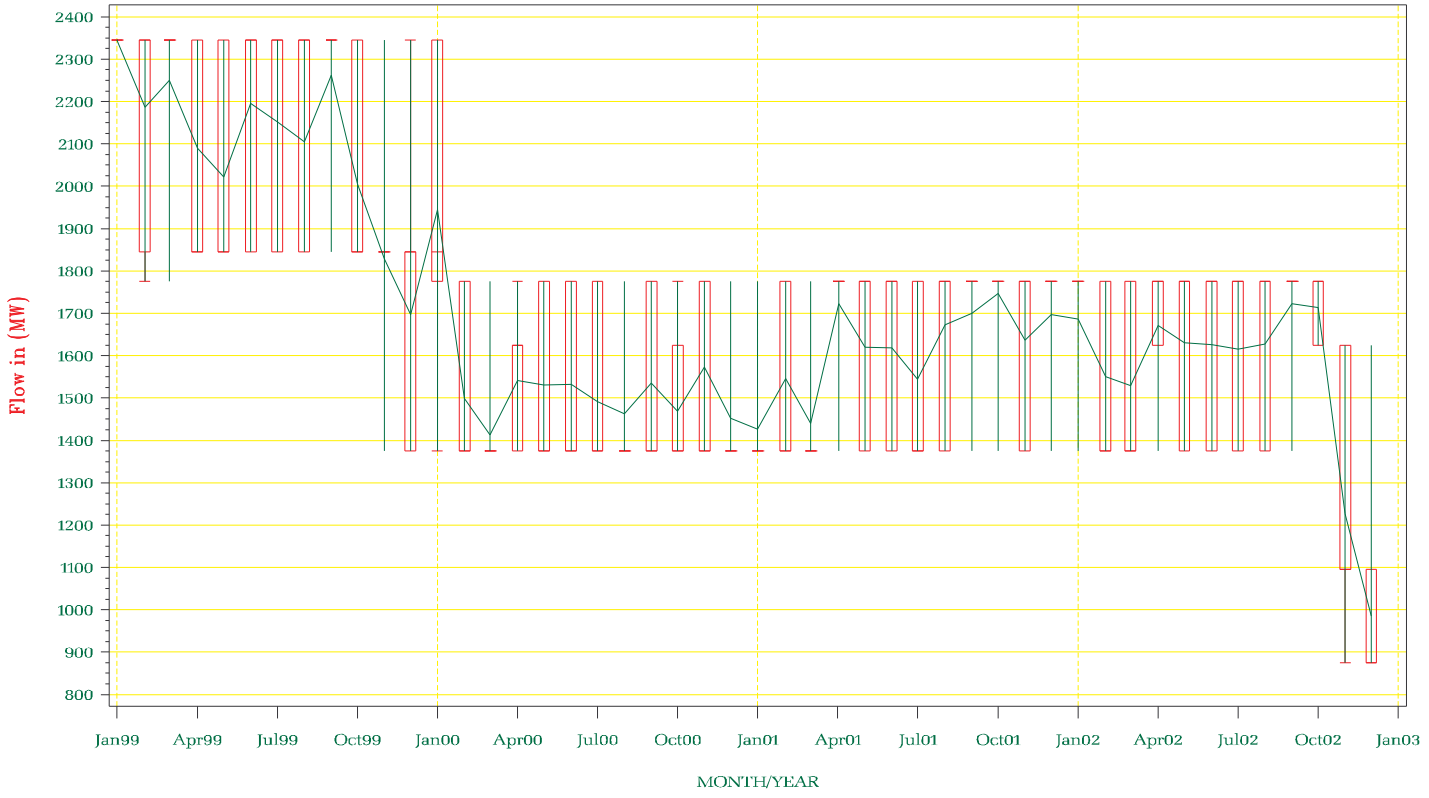
NYISO Percent of time Interface Flow For January 1999 – December 2002

TE – NY Limit



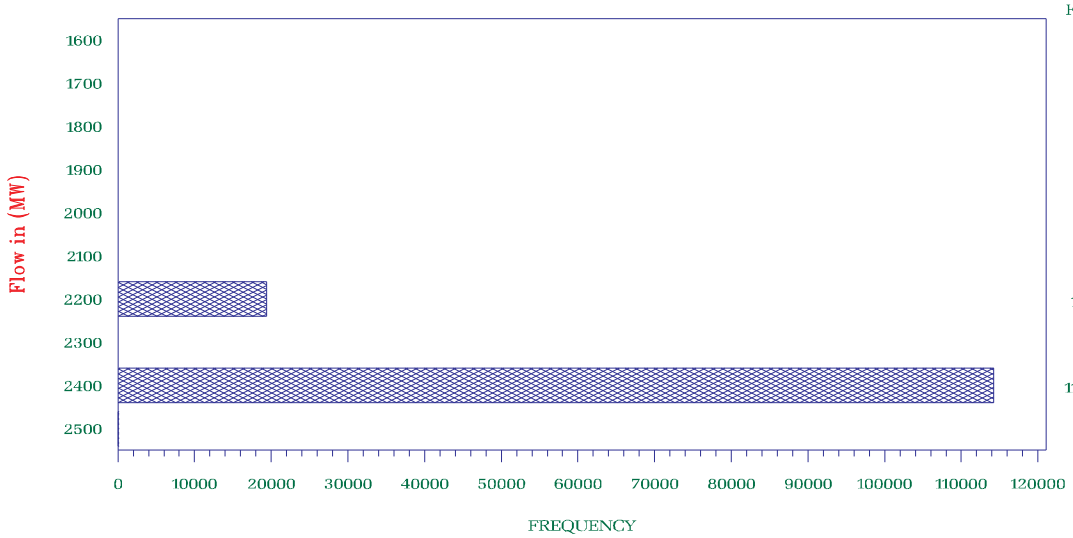
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

TE – NY Limit



NYISO Frequency Interface Flow For January – December 2002

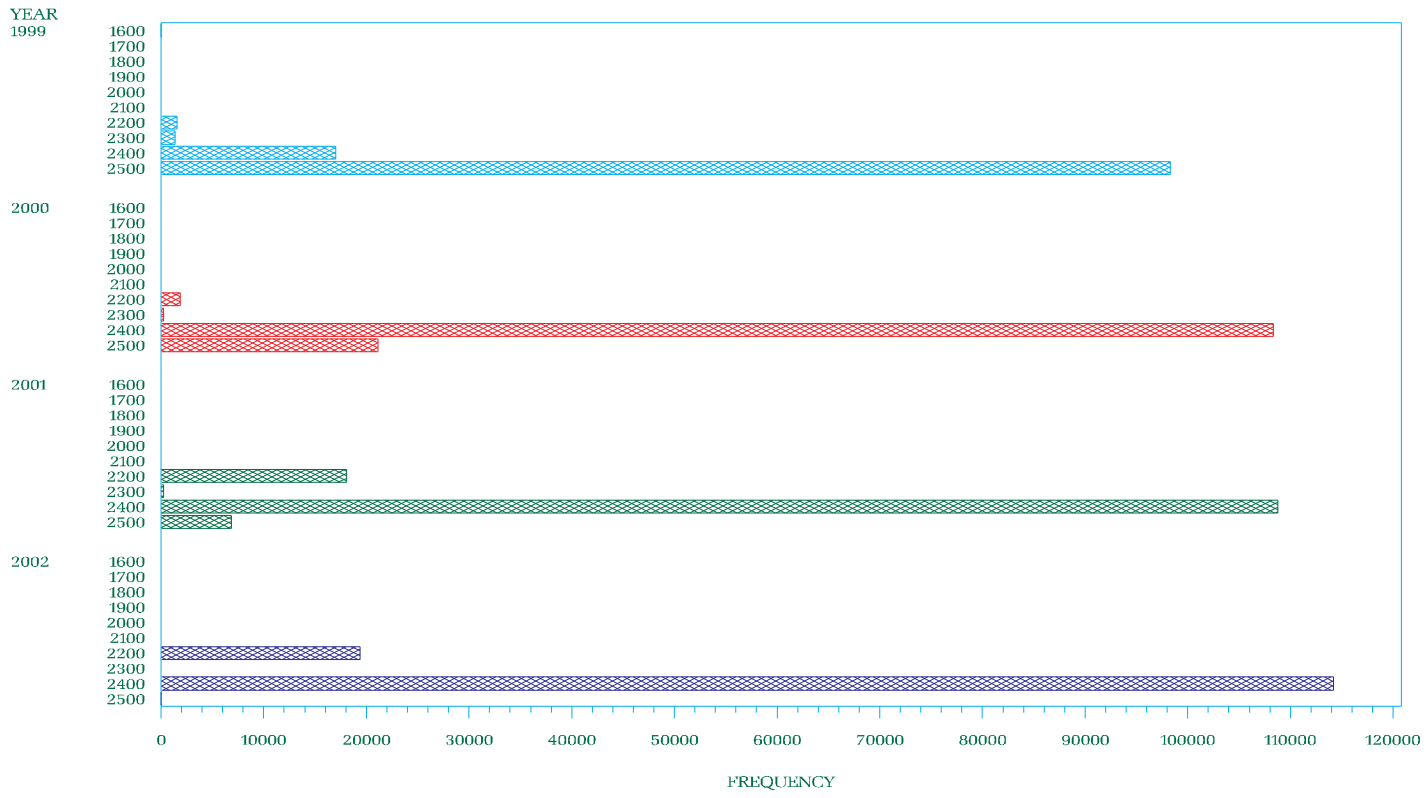
Ontario – NY Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1600	0	0	0.0	0.0
1700	0	0	0.0	0.0
1800	0	0	0.0	0.0
1900	0	0	0.0	0.0
2000	0	0	0.0	0.0
2100	0	0	0.0	0.0
2200	19367	19367	14.5	14.5
2300	0	19367	0.0	14.5
2400	114206	133573	85.5	100.0
2500	2	133575	0.0	100.0

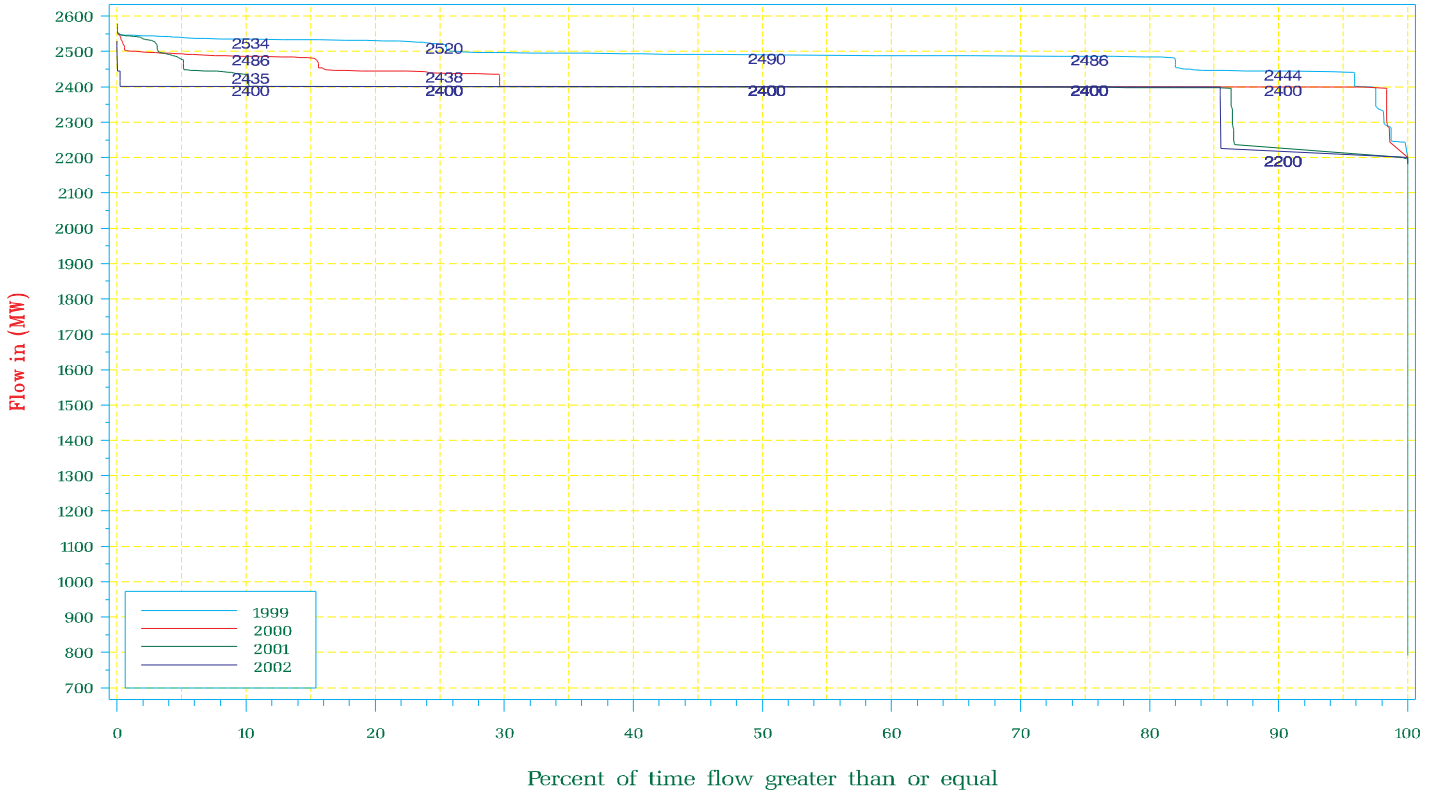
NYISO Frequency Interface Flow For January 1999 – December 2002

Ontario – NY Limit



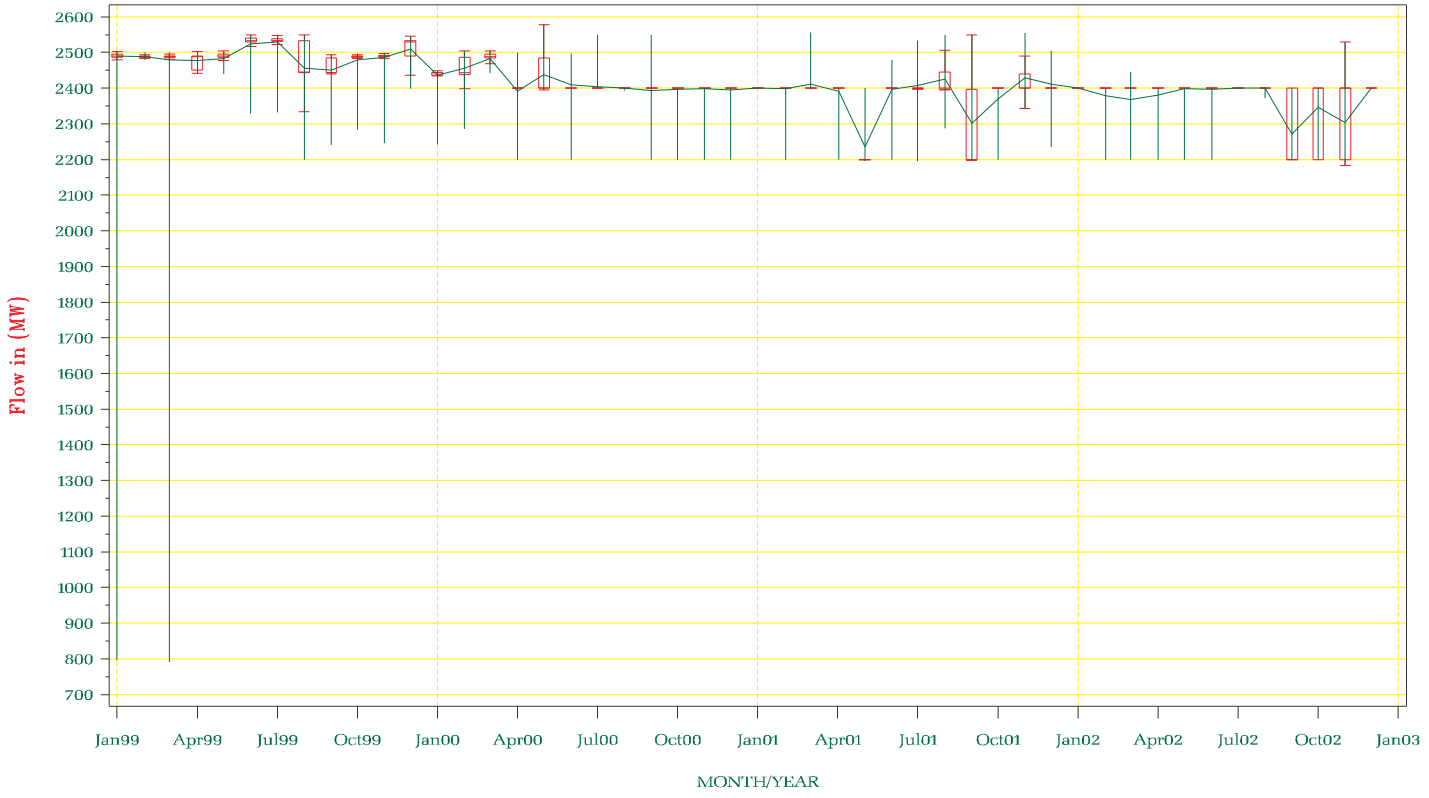
NYISO Percent of time Interface Flow For January 1999 – December 2002

Ontario – NY Limit



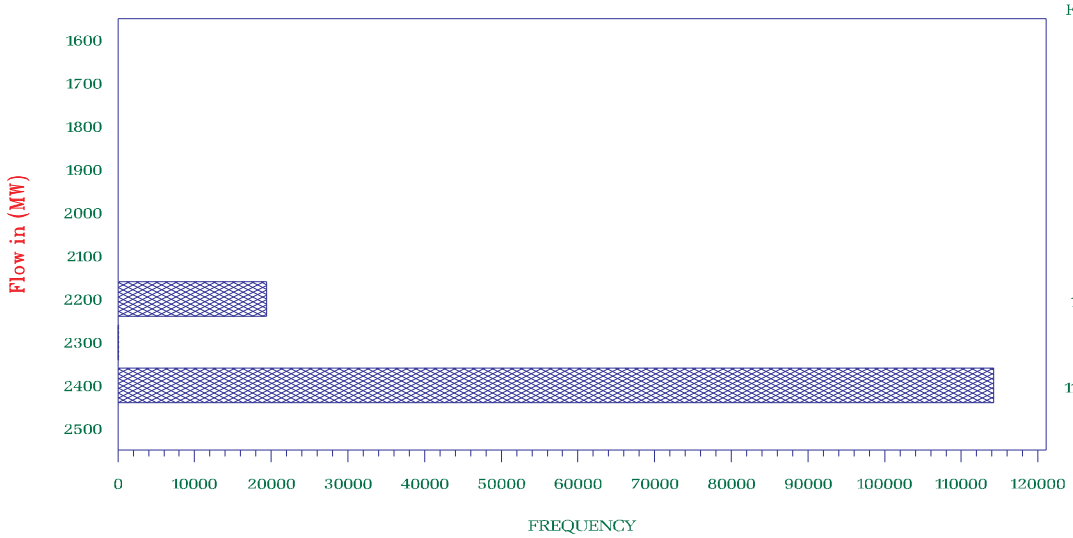
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Ontario – NY Limit



NYISO Frequency Interface Flow For January – December 2002

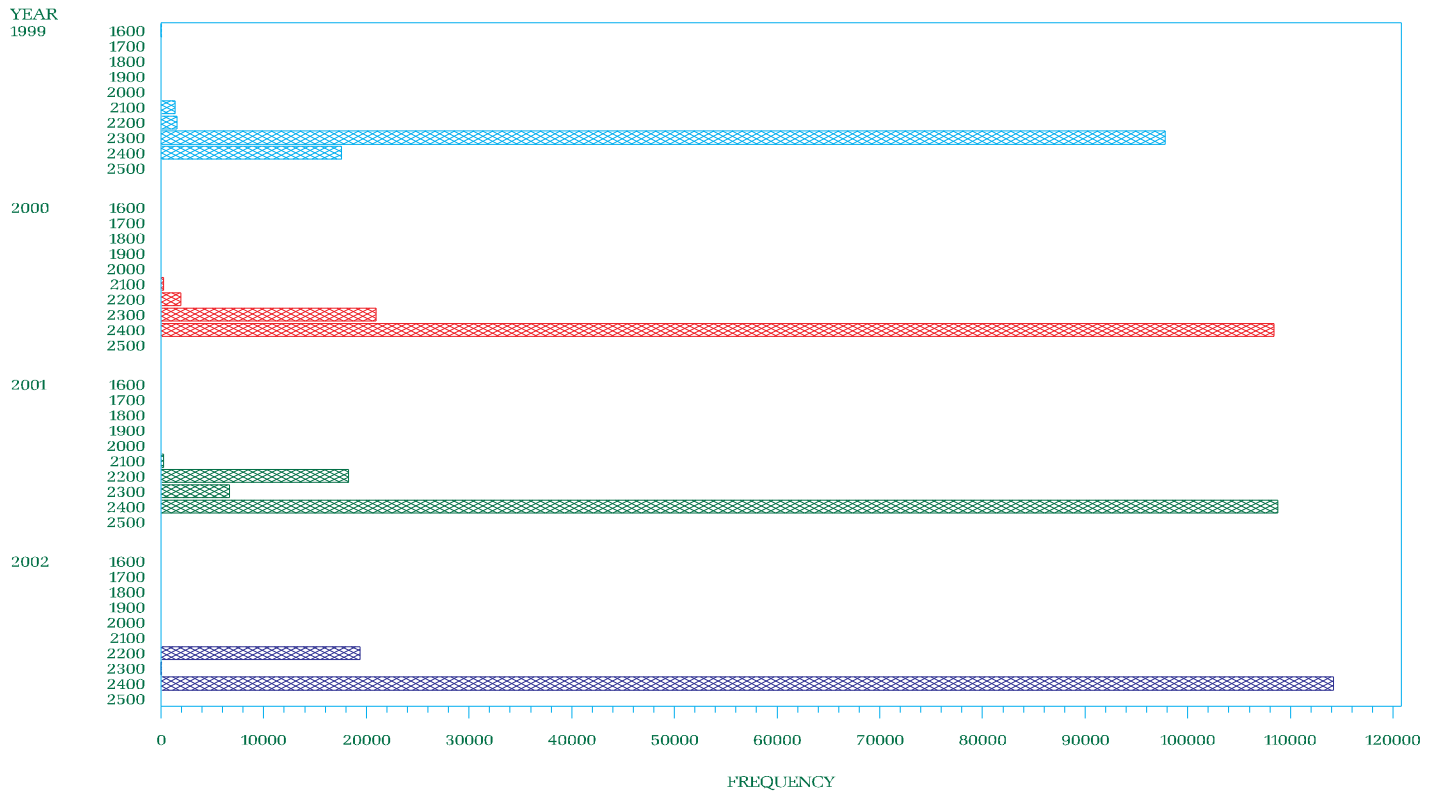
NY – Ontario Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1600	0	0	0.0	0.0
1700	0	0	0.0	0.0
1800	0	0	0.0	0.0
1900	0	0	0.0	0.0
2000	0	0	0.0	0.0
2100	0	0	0.0	0.0
2200	19367	19367	14.5	14.5
2300	2	19369	0.0	14.5
2400	114206	133575	85.5	100.0
2500	0	133575	0.0	100.0

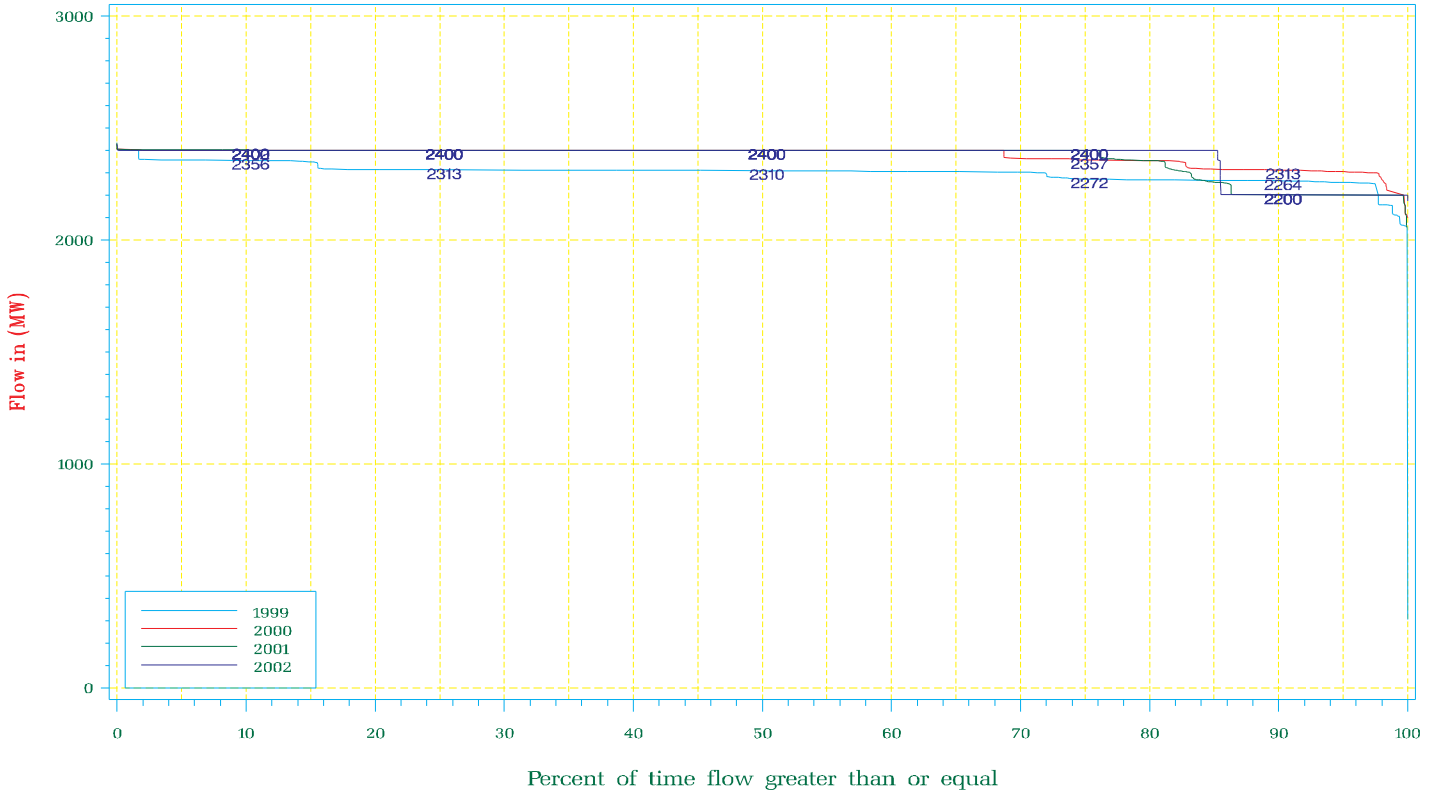
NYISO Frequency Interface Flow For January 1999 – December 2002

NY – Ontario Limit



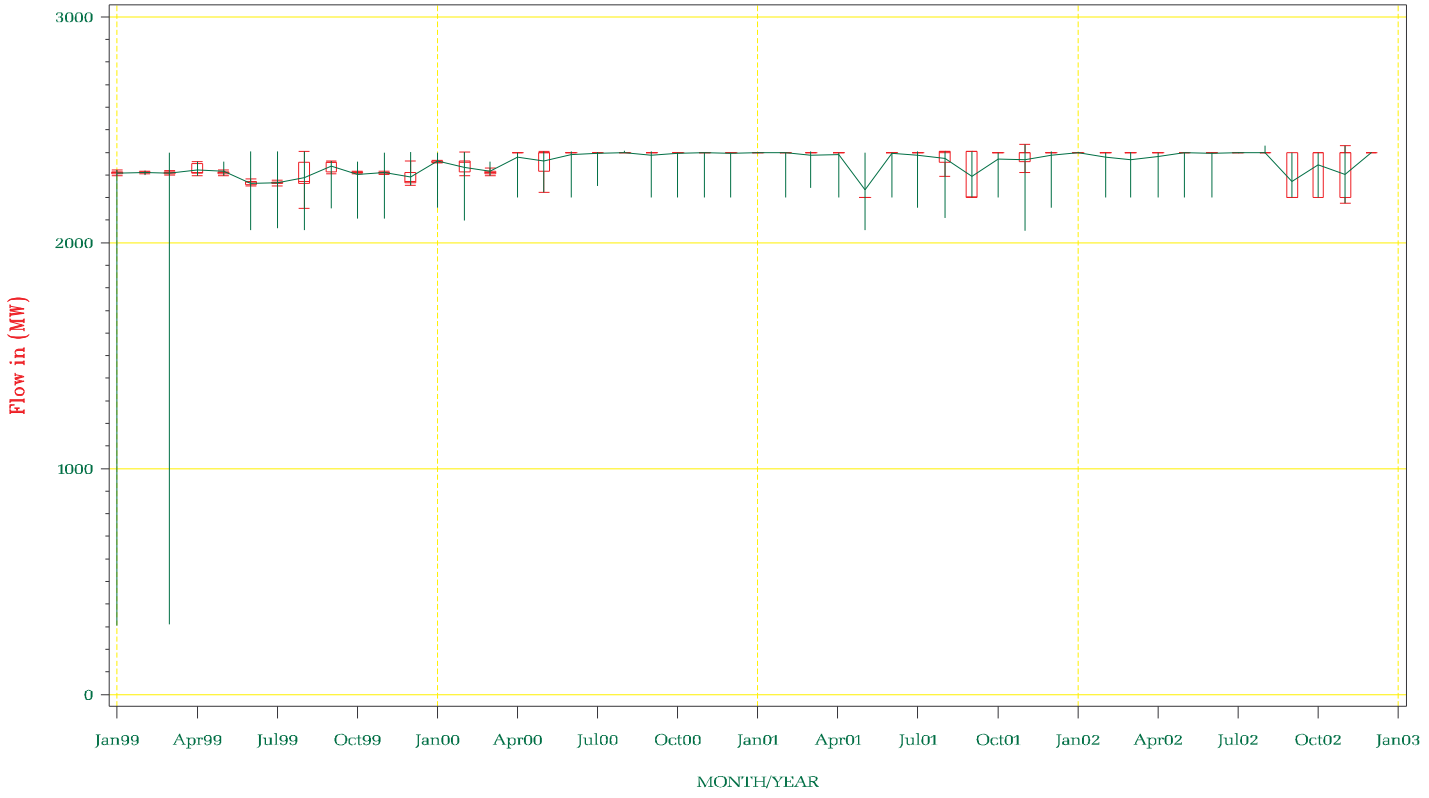
NYISO Percent of time Interface Flow For January 1999 – December 2002

NY – Ontario Limit



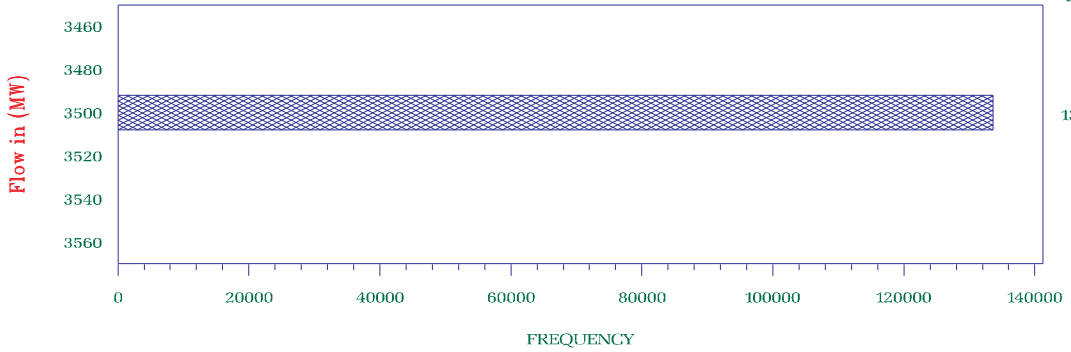
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

NY – Ontario Limit



NYISO Frequency Interface Flow For January – December 2002

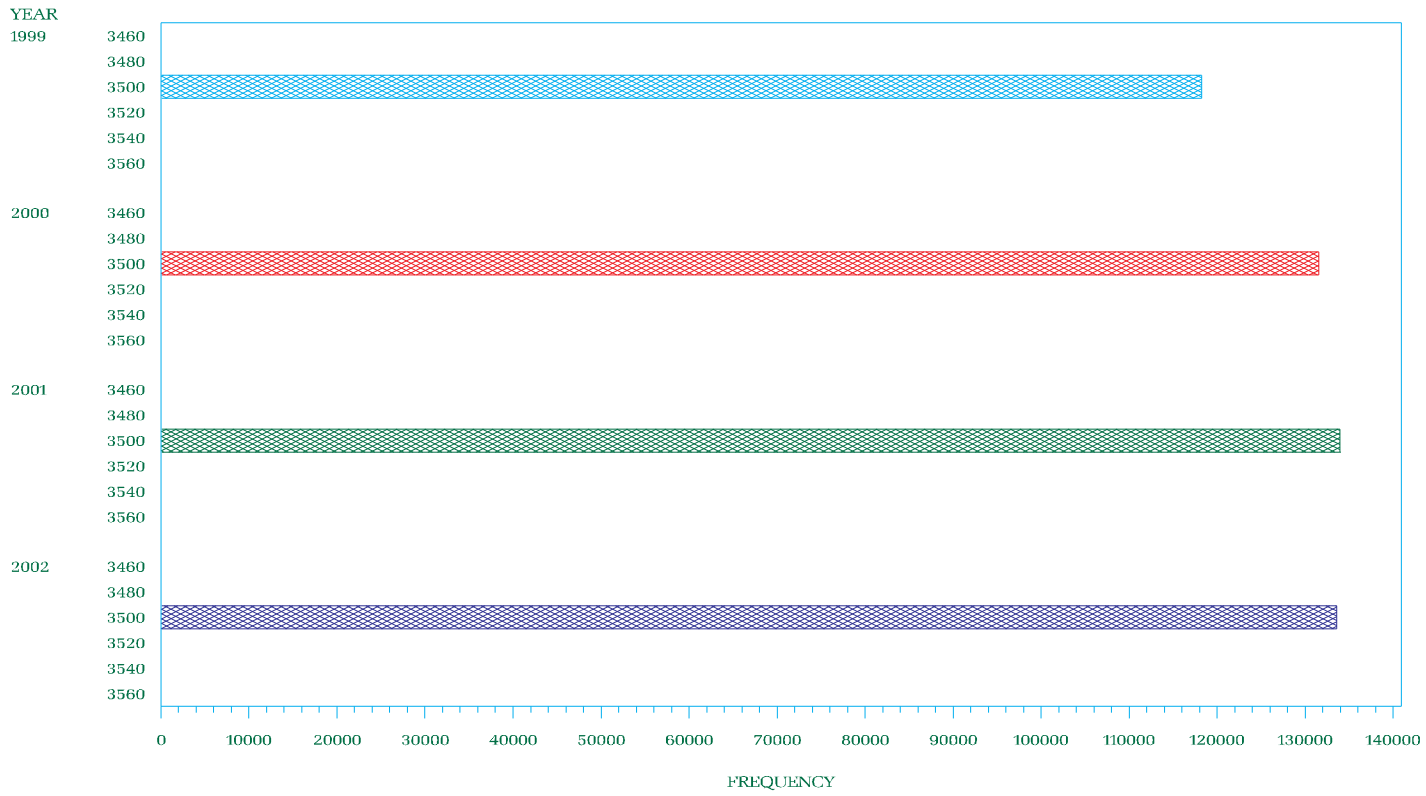
PJM – NY Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
3460	0	0	0	0
3480	0	0	0	0
3500	133575	133575	100	100
3520	0	133575	0	100
3540	0	133575	0	100
3560	0	133575	0	100

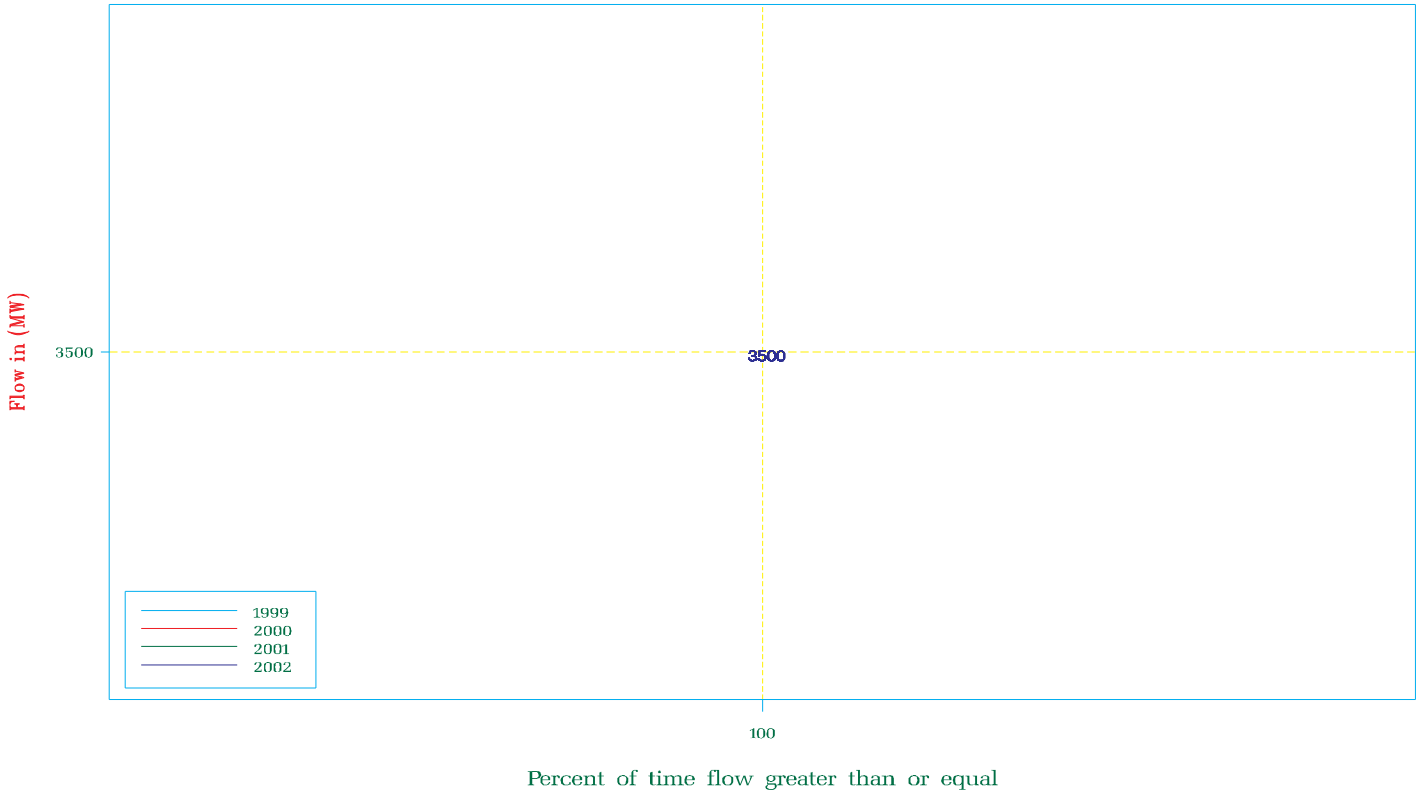
NYISO Frequency Interface Flow For January 1999 – December 2002

PJM – NY Limit



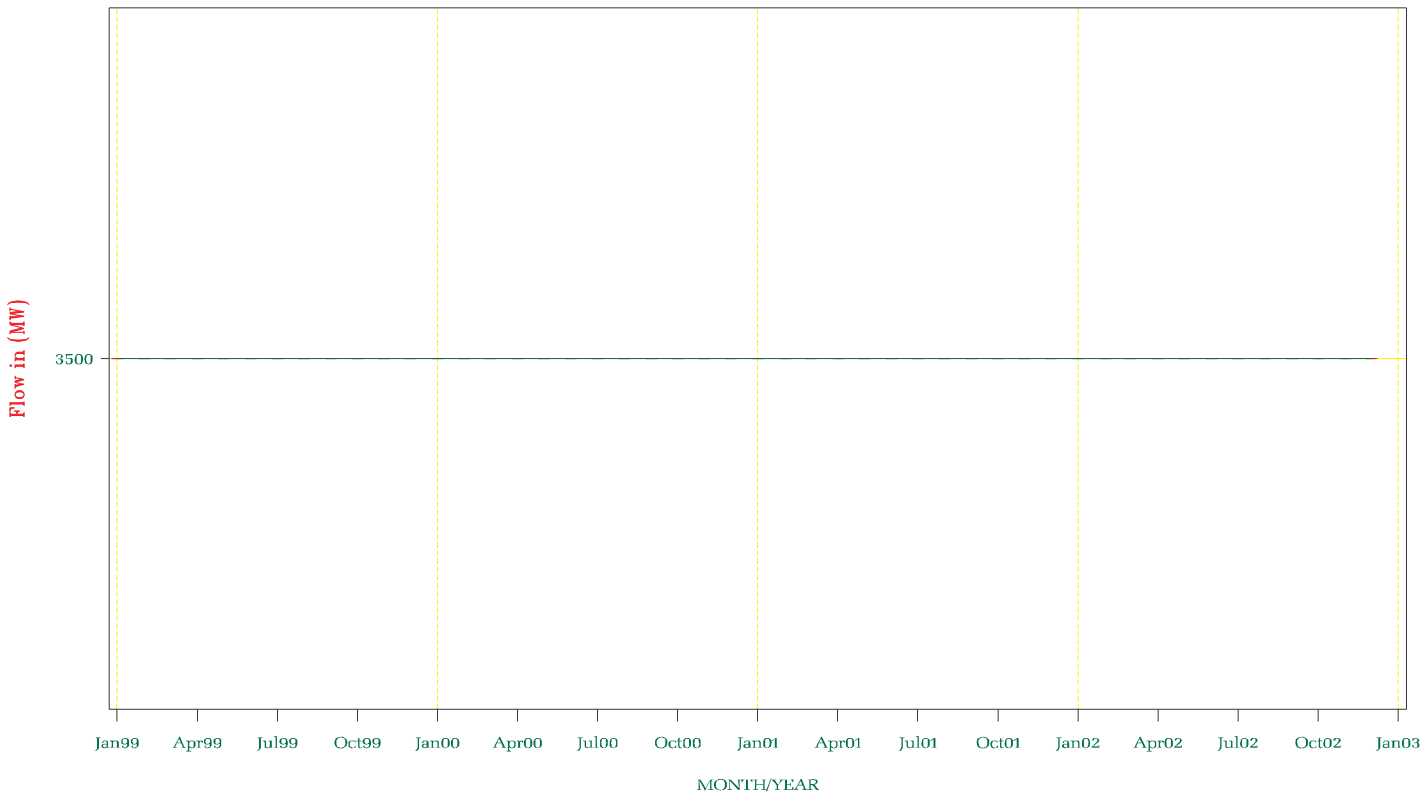
NYISO Percent of time Interface Flow For January 1999 – December 2002

PJM – NY Limit



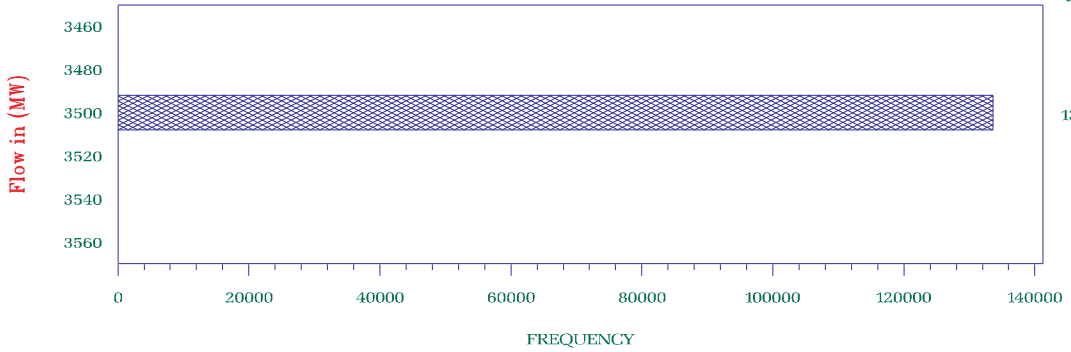
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

PJM – NY Limit



NYISO Frequency Interface Flow For January – December 2002

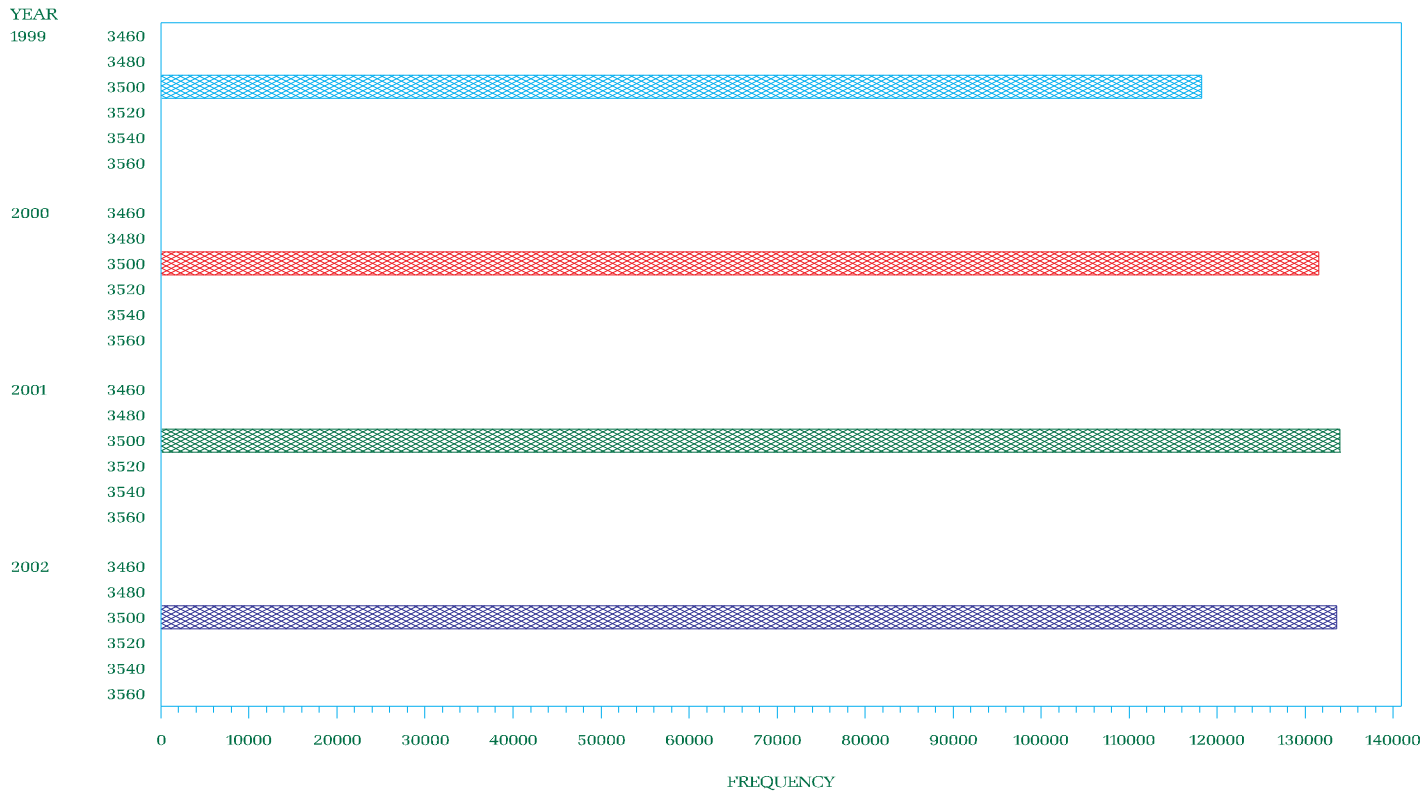
NY – PJM Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
3460	0	0	0	0
3480	0	0	0	0
3500	133575	133575	100	100
3520	0	133575	0	100
3540	0	133575	0	100
3560	0	133575	0	100

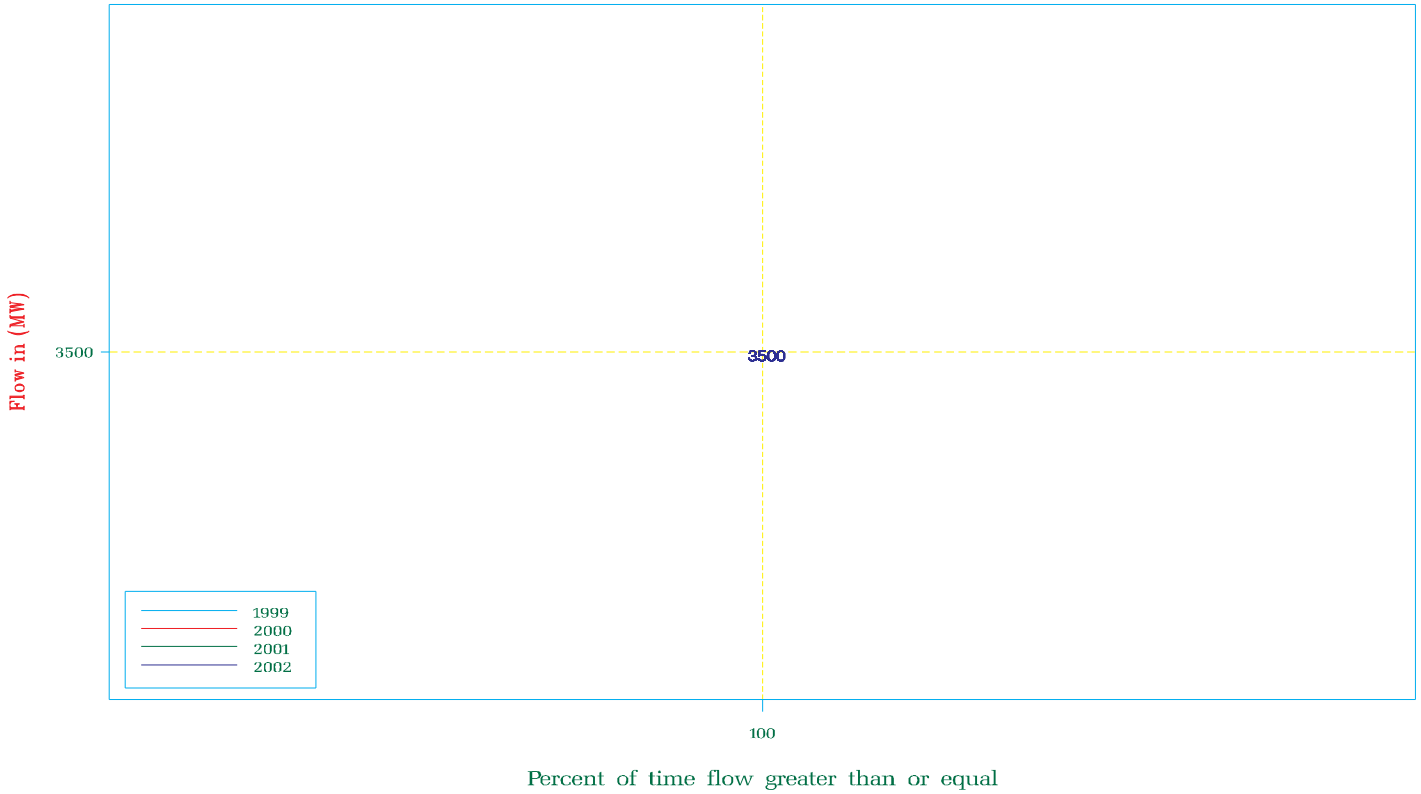
NYISO Frequency Interface Flow For January 1999 – December 2002

NY – PJM Limit



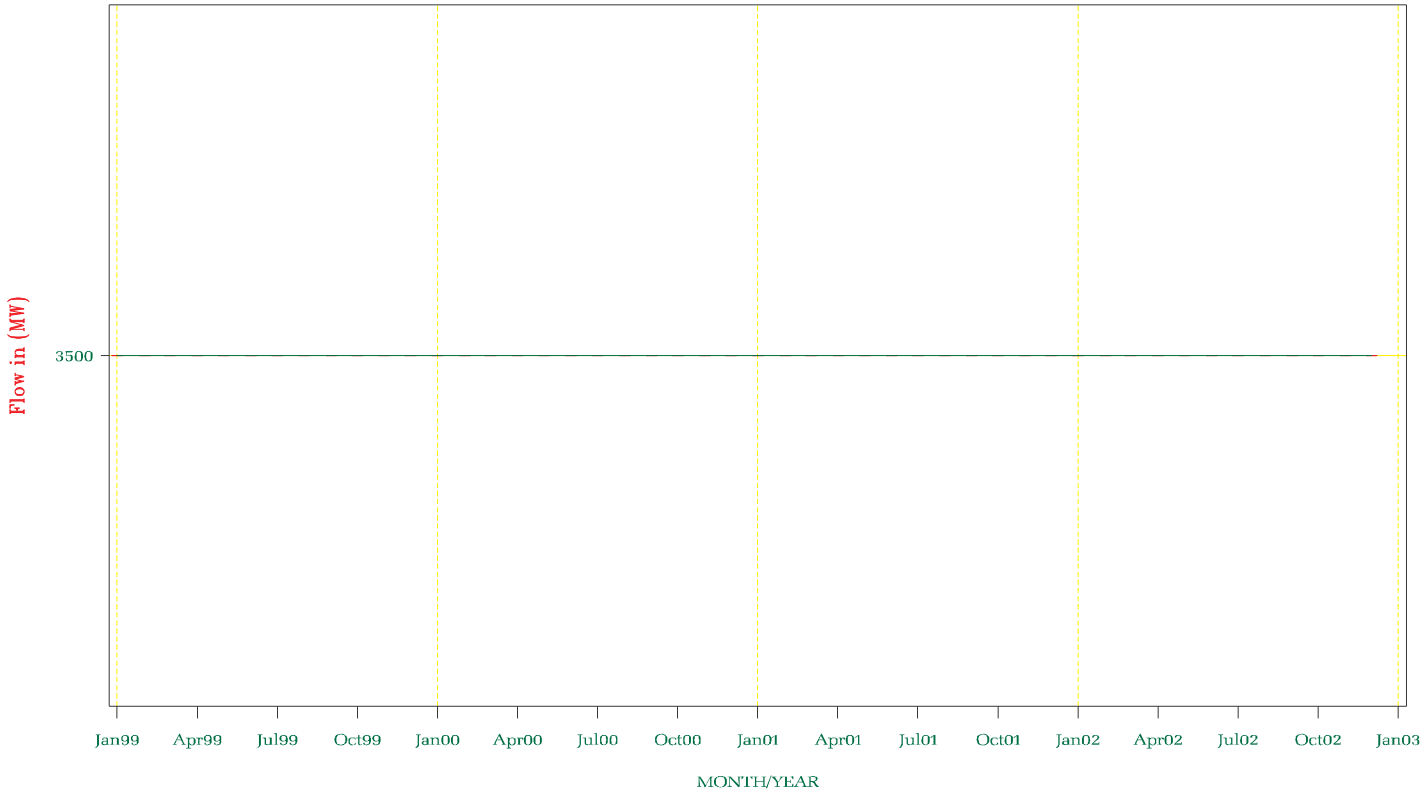
NYISO Percent of time Interface Flow For January 1999 – December 2002

NY – PJM Limit



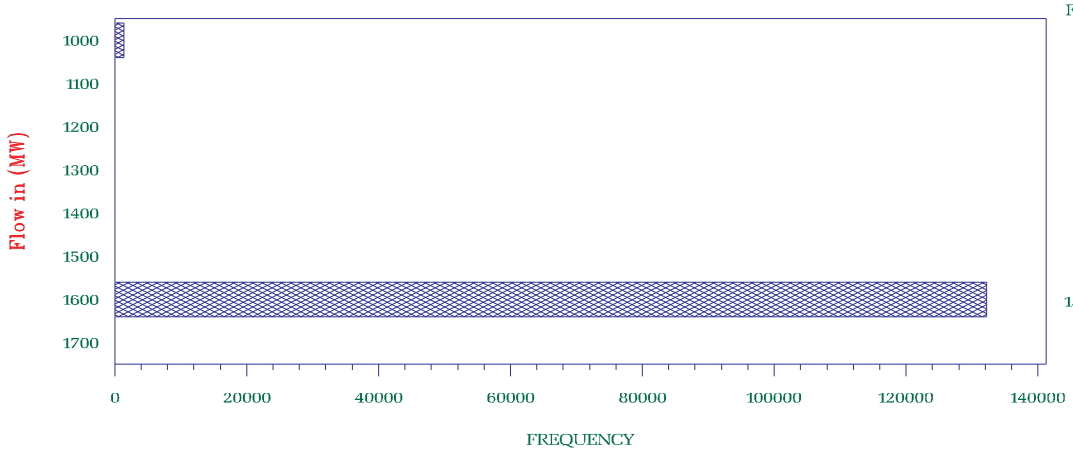
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

NY – PJM Limit



NYISO Frequency Interface Flow For January – December 2002

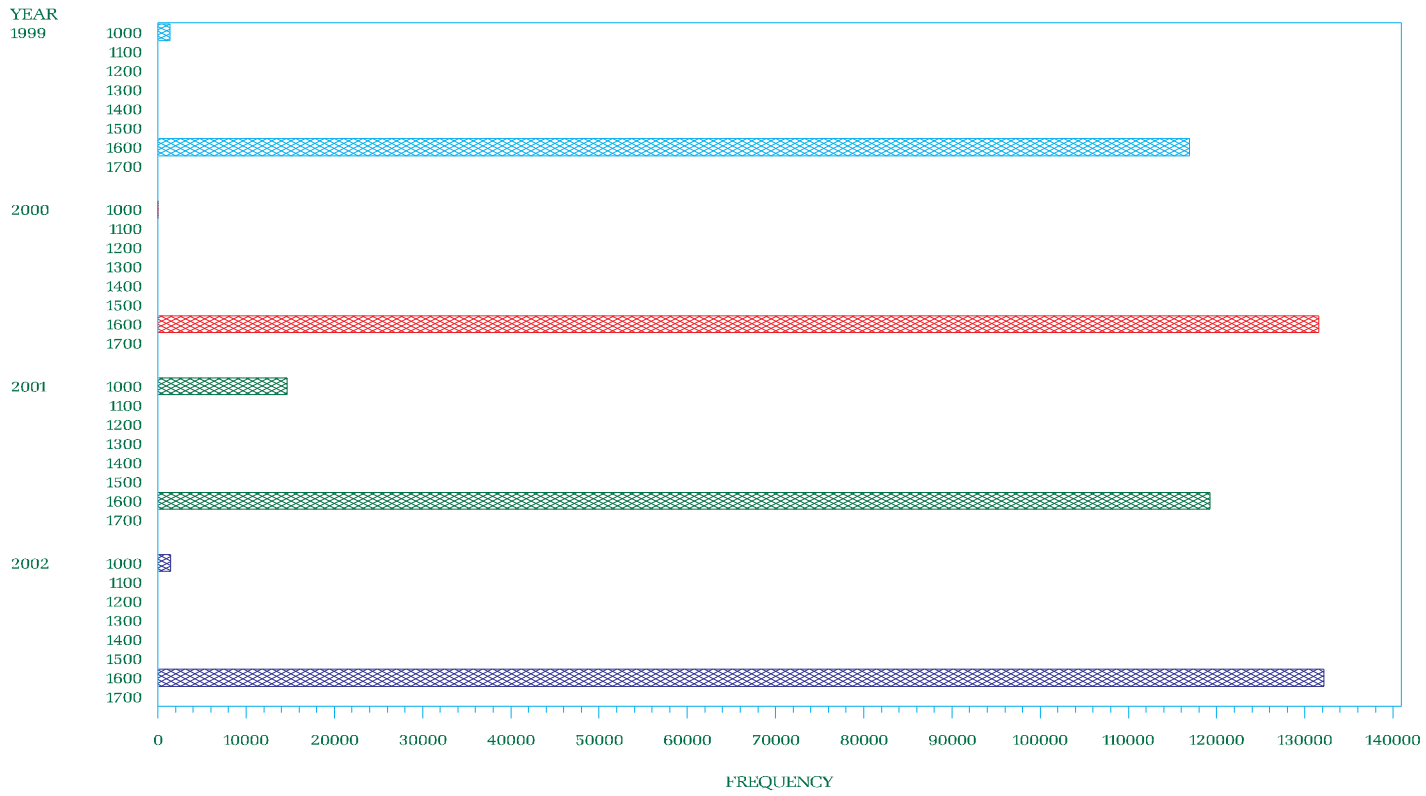
NE – NY Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1000	1411	1411	1.06	1.06
1100	0	1411	0.00	1.06
1200	0	1411	0.00	1.06
1300	0	1411	0.00	1.06
1400	0	1411	0.00	1.06
1500	0	1411	0.00	1.06
1600	132164	133575	98.94	100.00
1700	0	133575	0.00	100.00

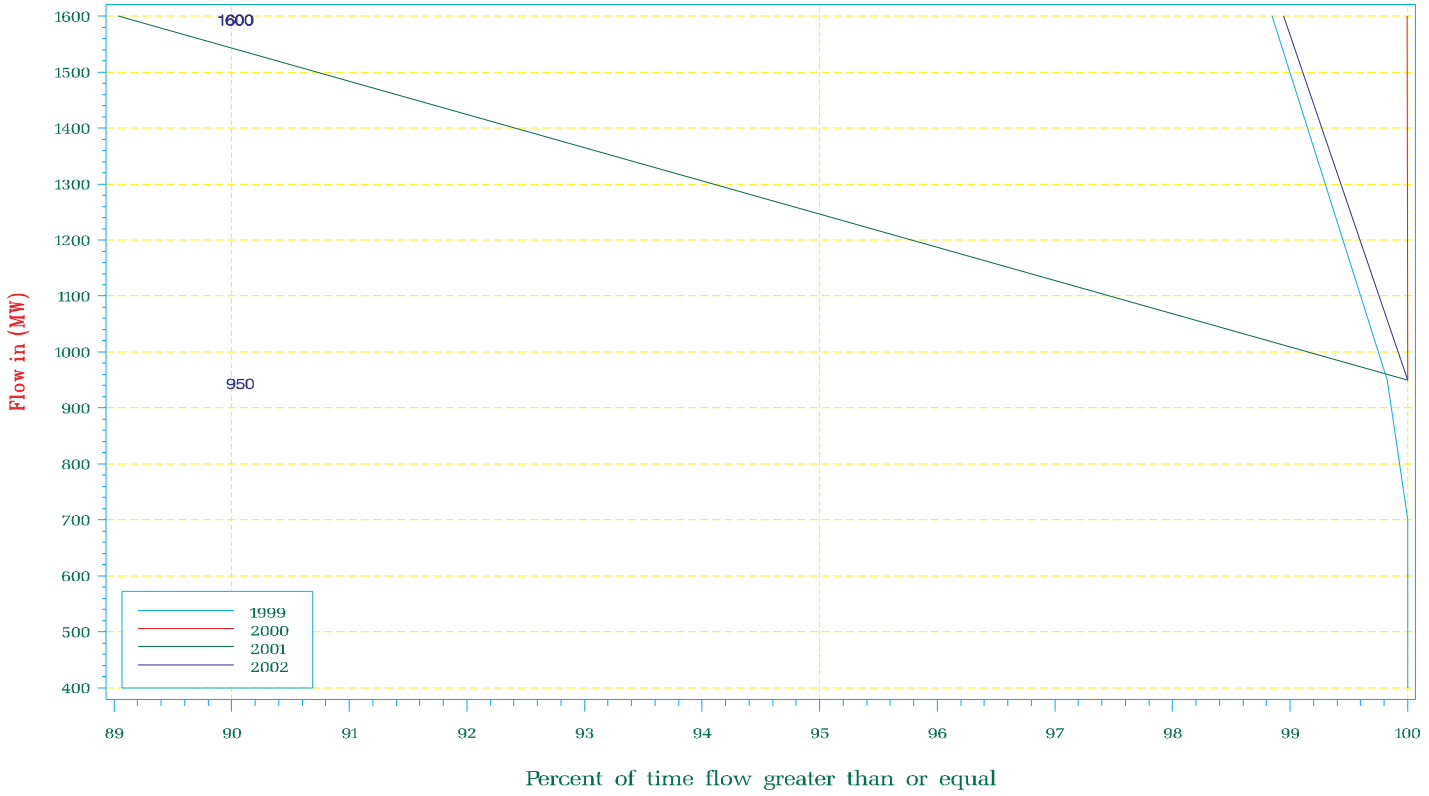
NYISO Frequency Interface Flow For January 1999 – December 2002

NE – NY Limit



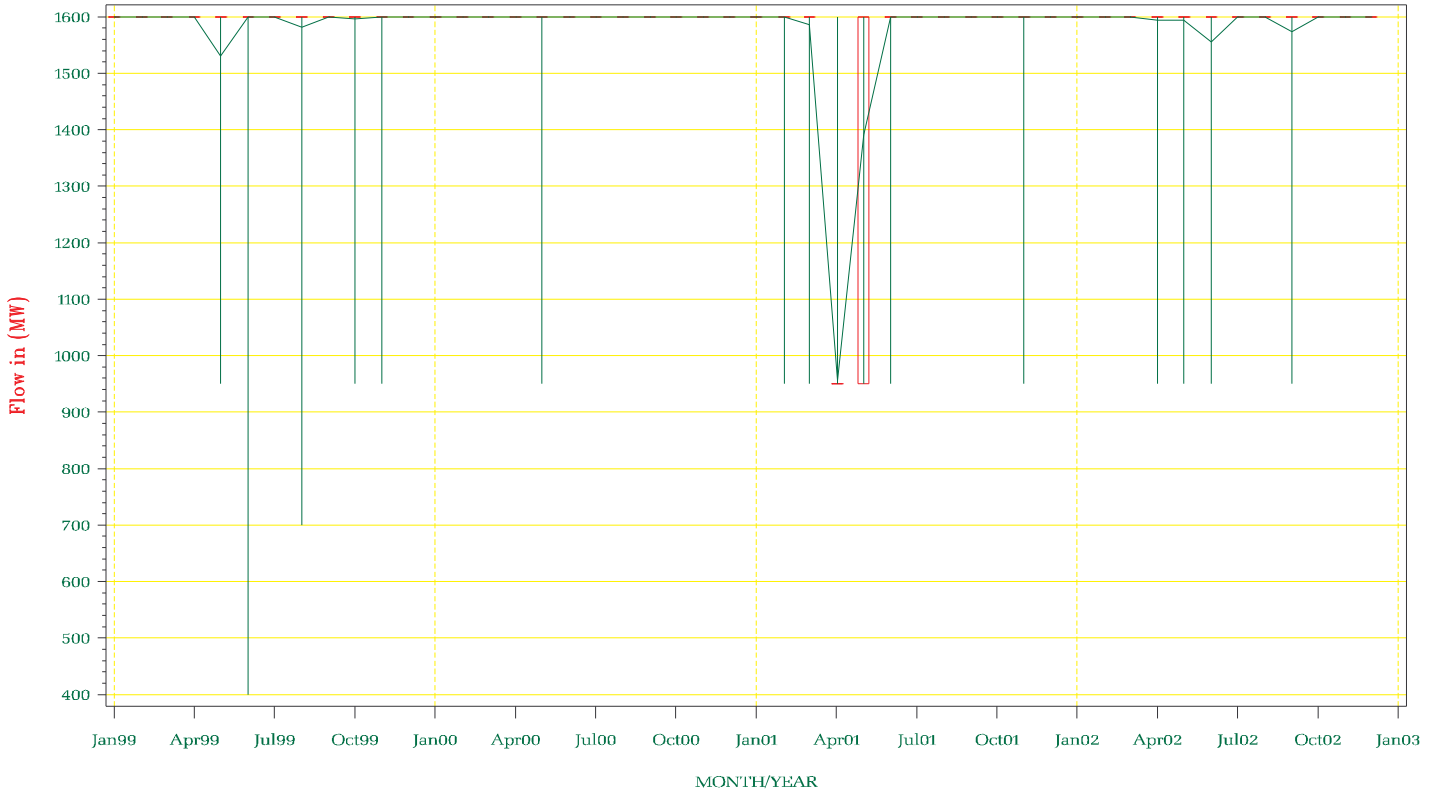
NYISO Percent of time Interface Flow For January 1999 – December 2002

NE – NY Limit



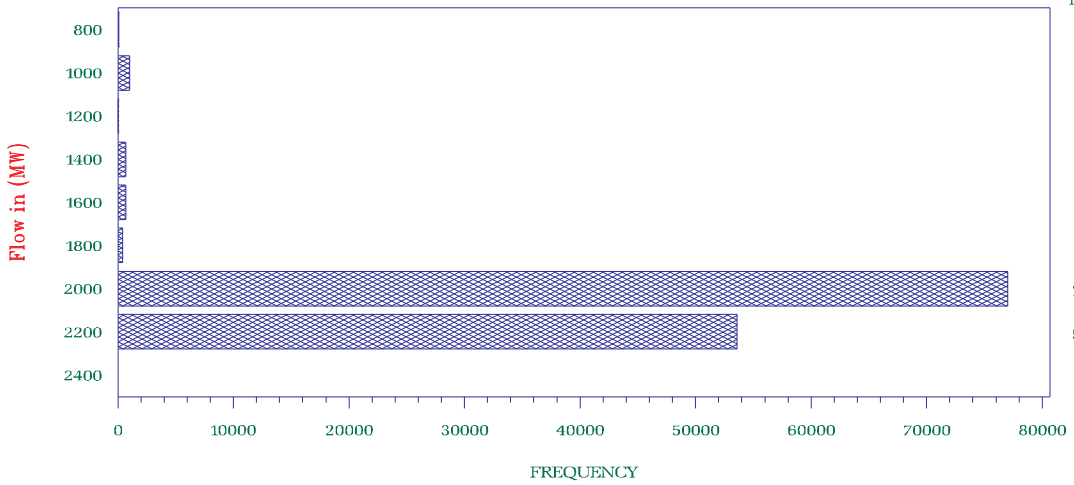
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

NE – NY Limit



NYISO Frequency Interface Flow For January – December 2002

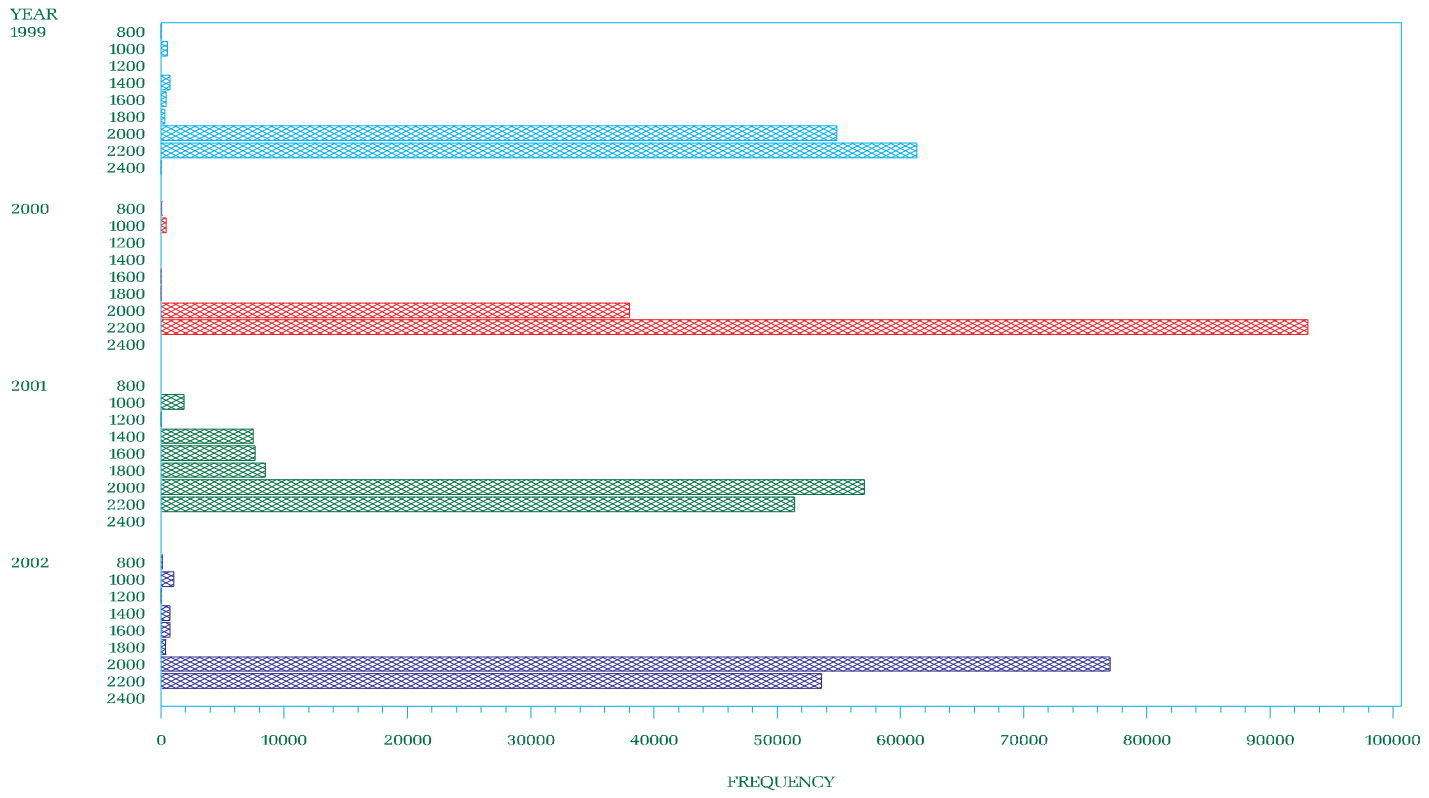
NY – NE Limit



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
800	100	100	0.07	0.07
1000	1045	1145	0.78	0.86
1200	4	1149	0.00	0.86
1400	708	1857	0.53	1.39
1600	709	2566	0.53	1.92
1800	387	2953	0.29	2.21
2000	77029	79982	57.67	59.88
2200	53593	133575	40.12	100.00
2400	0	133575	0.00	100.00

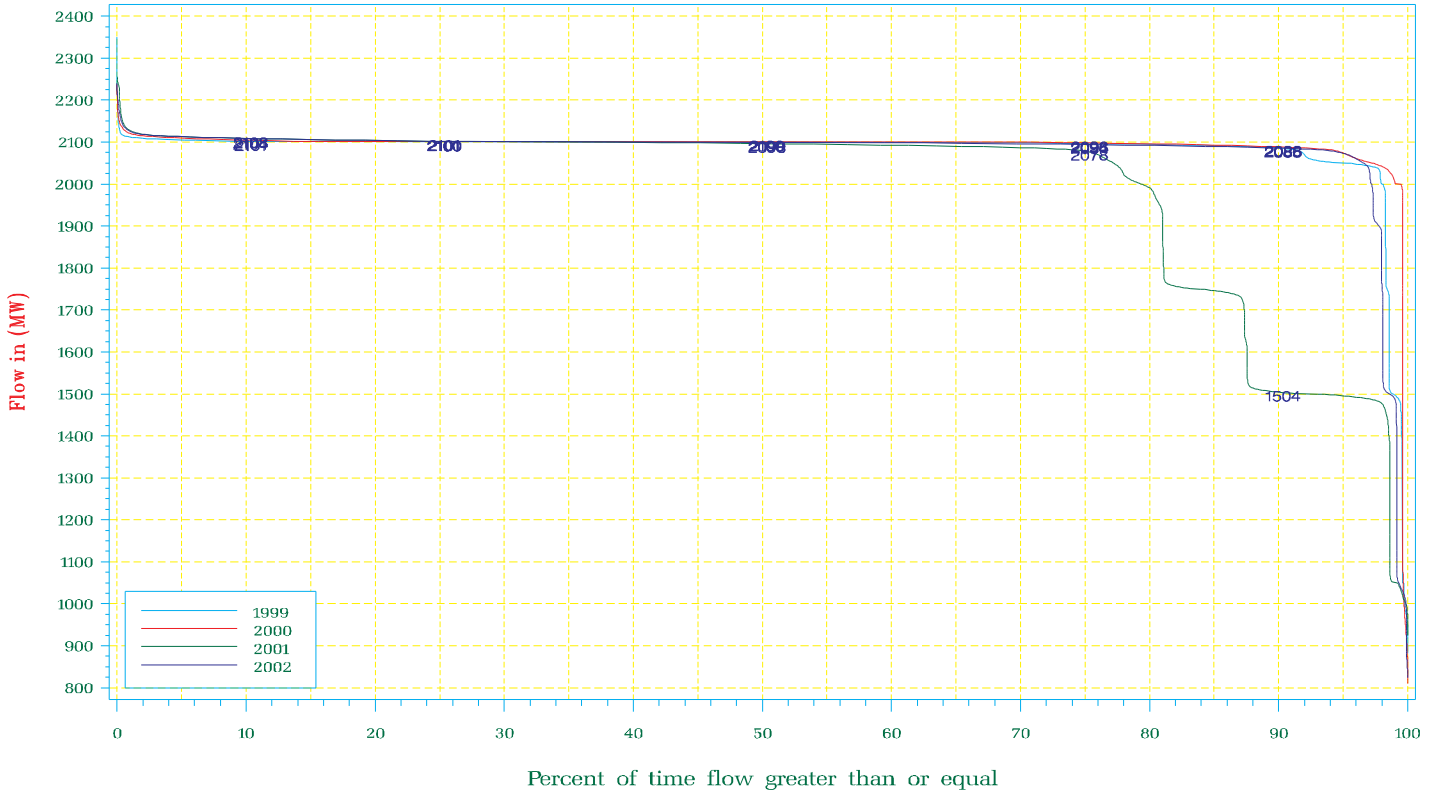
NYISO Frequency Interface Flow For January 1999 – December 2002

NY – NE Limit



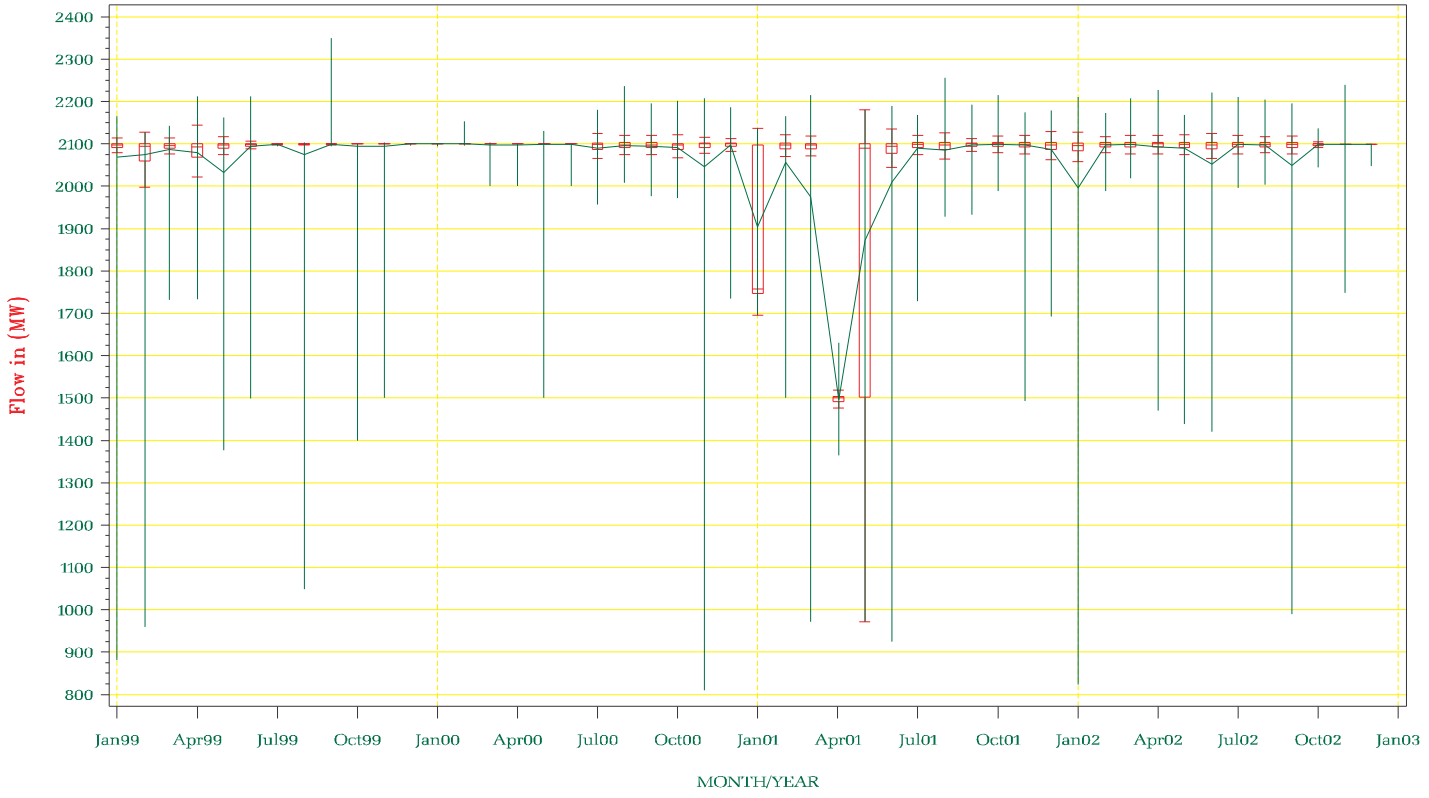
NYISO Percent of time Interface Flow For January 1999 – December 2002

NY – NE Limit



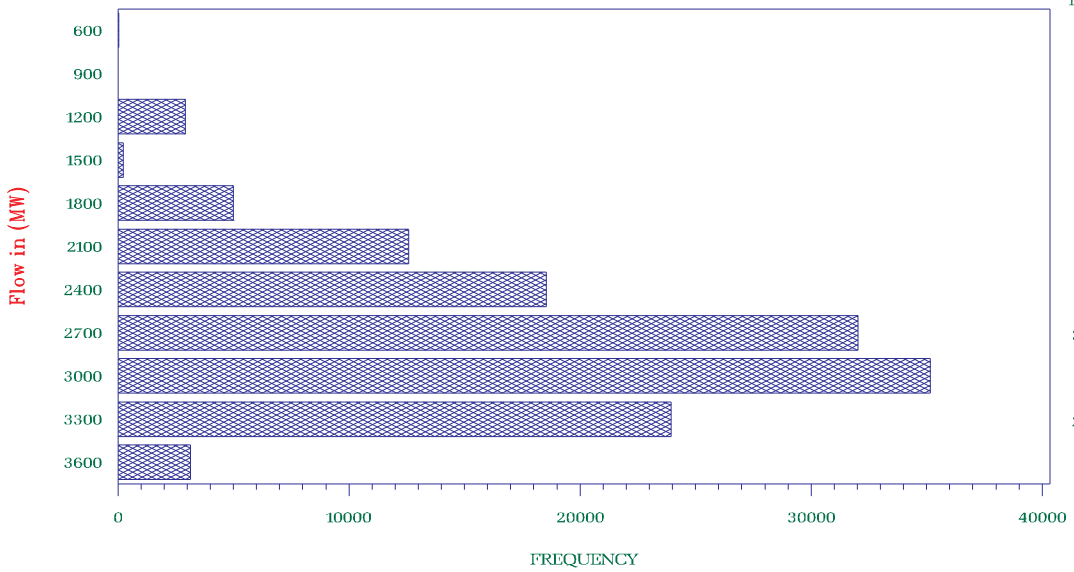
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

NY – NE Limit



NYISO Frequency Interface Flow For January – December 2002

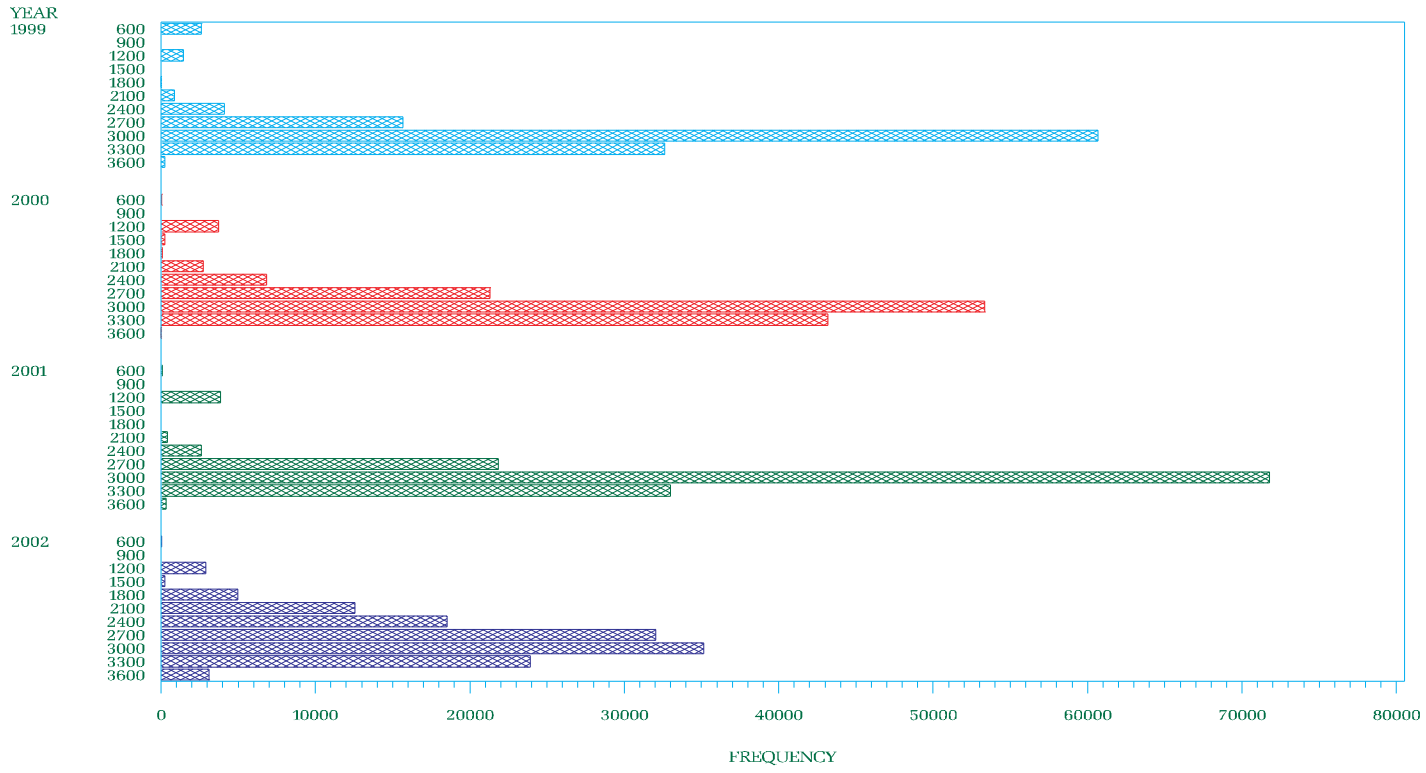
Central East Post – Contingency Voltage Collapse Limit
l/o New England Generation



	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
600	26	26	0.02	0.02
900	0	26	0.00	0.02
1200	2906	2932	2.18	2.20
1500	244	3176	0.18	2.38
1800	4996	8172	3.74	6.12
2100	12579	20751	9.42	15.54
2400	18547	39298	13.89	29.42
2700	32036	71334	23.99	53.41
3000	35166	106500	26.33	79.74
3300	23933	130433	17.92	97.66
3600	3128	133561	2.34	100.00

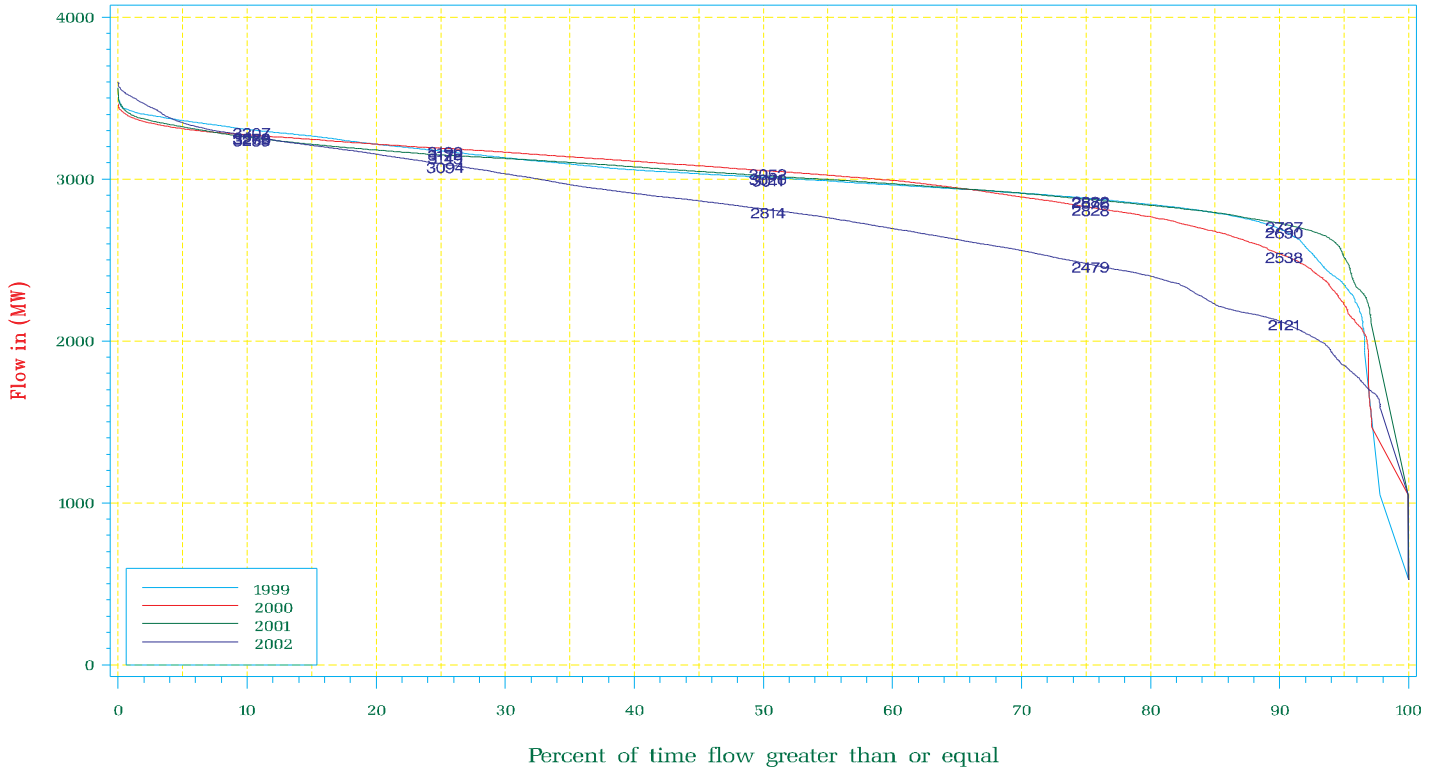
NYISO Frequency Interface Flow For January 1999 – December 2002

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



NYISO Percent of time Interface Flow For January 1999 – December 2002

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



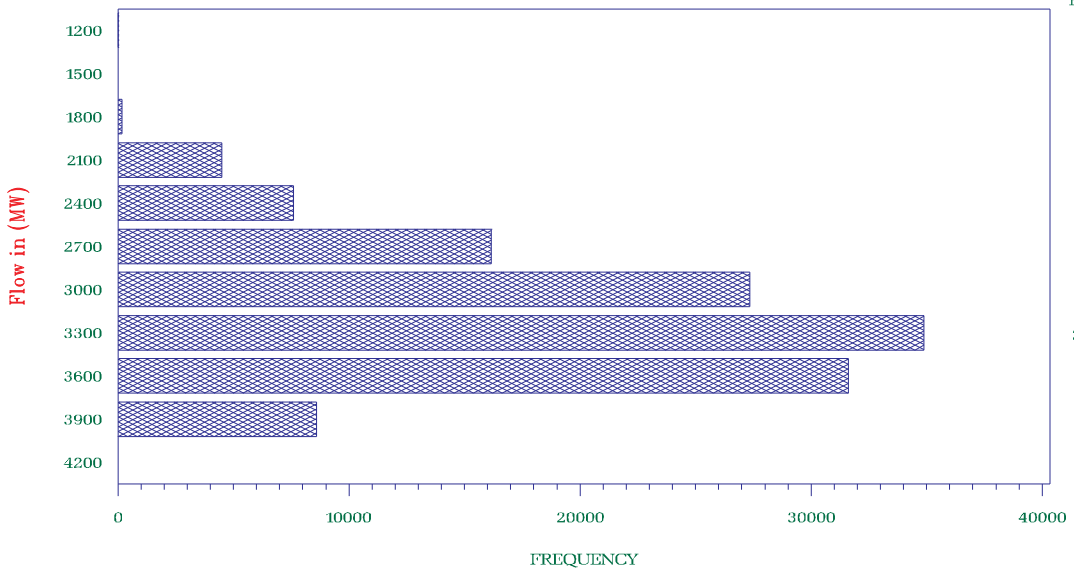
NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

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

NYISO Frequency Interface Flow For January – December 2002

Central East Post – Contingency Voltage Collapse Limit

l/o Marcy South Tower

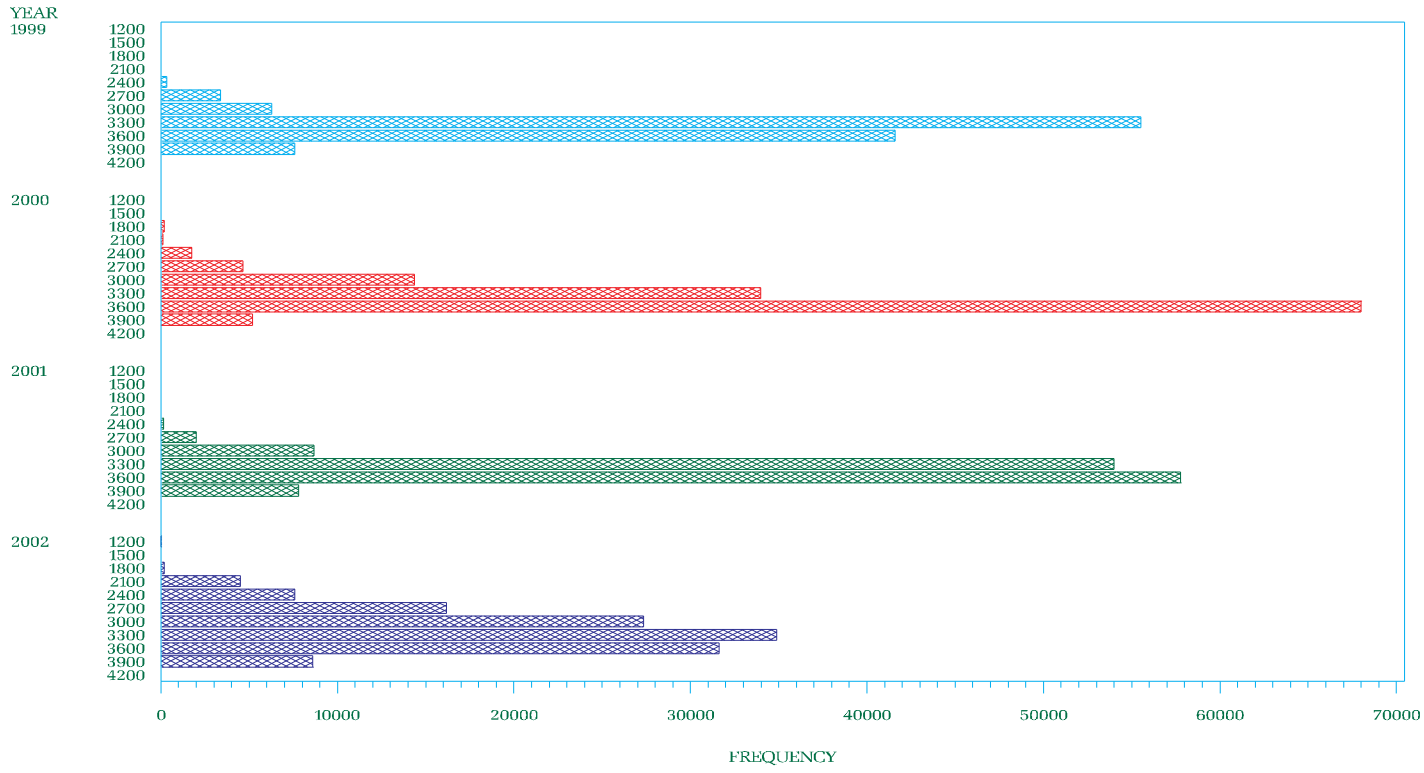


Flow in (MW)	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
1200	1	1	0.00	0.00
1500	0	1	0.00	0.00
1800	173	174	0.13	0.13
2100	4510	4684	3.45	3.58
2400	7592	12276	5.80	9.38
2700	16171	28447	12.35	21.73
3000	27351	55798	20.90	42.63
3300	34884	90682	26.65	69.28
3600	31610	122292	24.15	93.43
3900	8600	130892	6.57	100.00
4200	0	130892	0.00	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

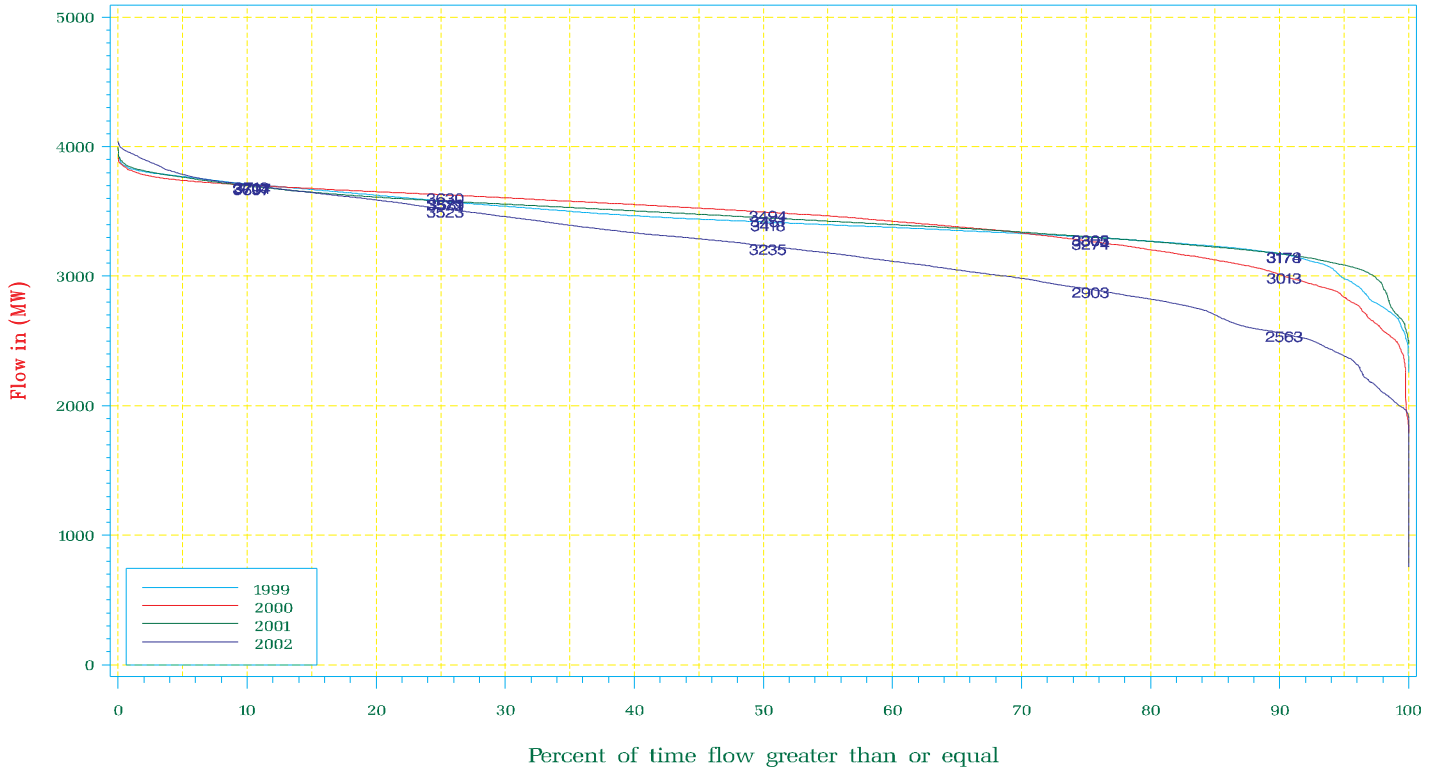
Central East Post – Contingency Voltage Collapse Limit

l/o Marcy South Tower



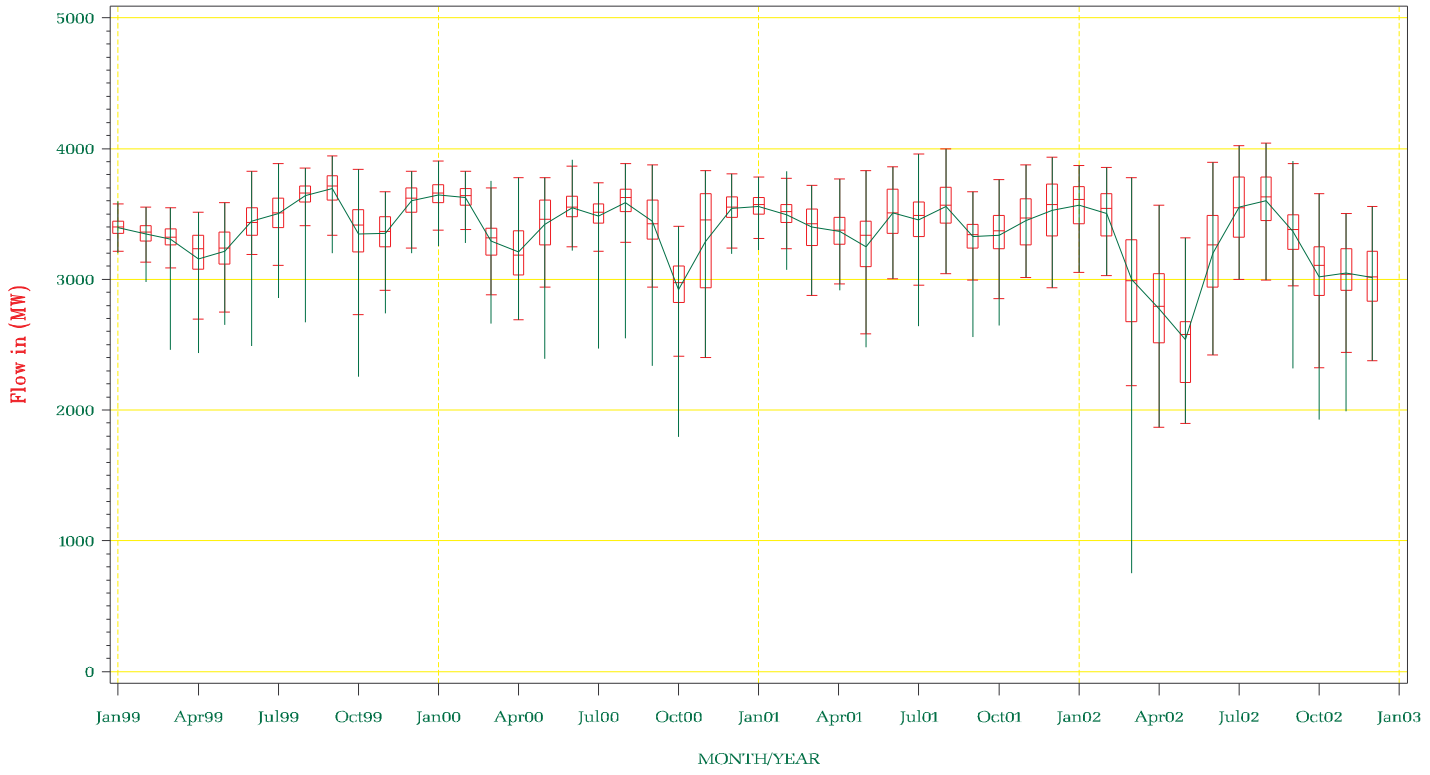
NYISO Percent of time Interface Flow For January 1999 – December 2002

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



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

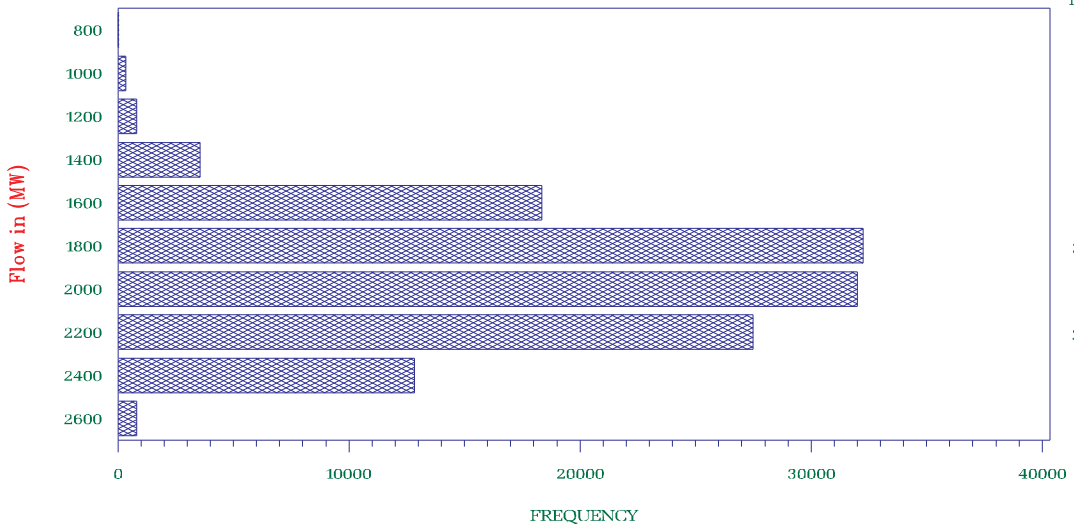
Central East Post – Contingency Voltage Collapse Limit
l/o Marcy South Tower



NYISO Frequency Interface Flow For January – December 2002

Central East Post – Contingency Voltage Collapse Limit

l/o New Scotland 99 Bus

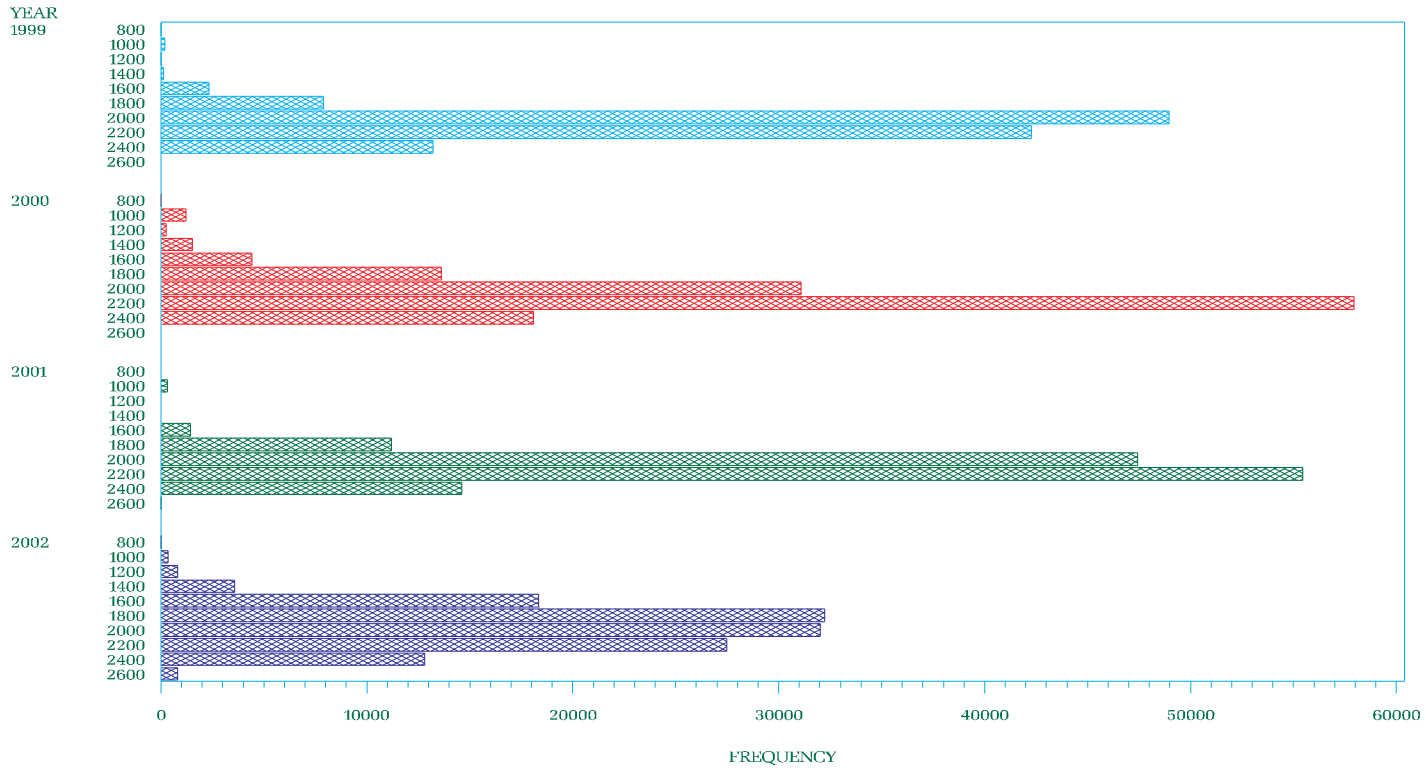


	FREQ.	CUM. FREQ.	PCT.	CUM. PCT.
800	6	6	0.00	0.00
1000	346	352	0.27	0.27
1200	807	1159	0.63	0.90
1400	3563	4722	2.77	3.68
1600	18340	23062	14.28	17.96
1800	32239	55301	25.10	43.06
2000	32013	87314	24.93	67.99
2200	27484	114798	21.40	89.39
2400	12821	127619	9.98	99.37
2600	804	128423	0.63	100.00

NYISO Frequency Interface Flow For January 1999 – December 2002

Central East Post – Contingency Voltage Collapse Limit

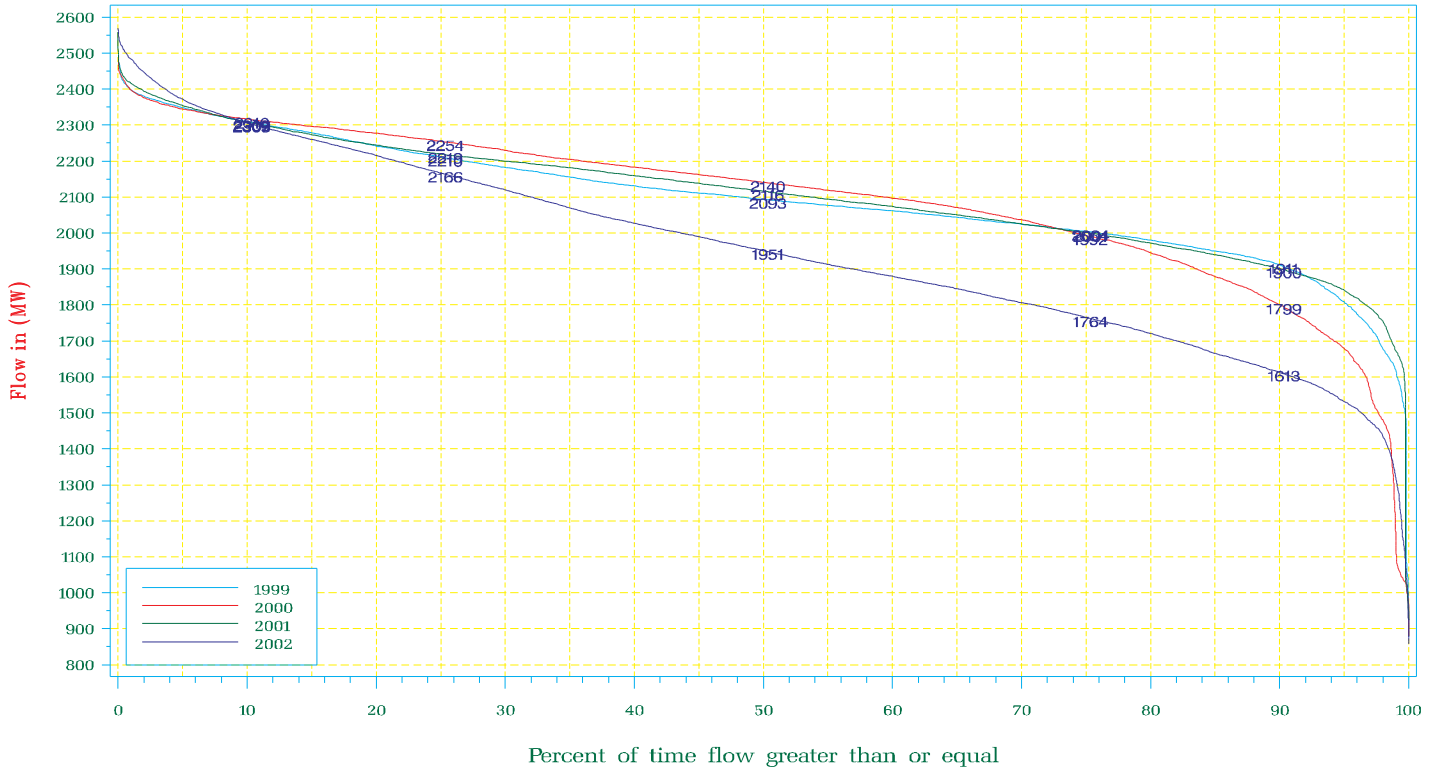
l/o New Scotland 99 Bus



NYISO Percent of time Interface Flow For January 1999 – December 2002

Central East Post – Contingency Voltage Collapse Limit

l/o New Scotland 99 Bus



NYISO Average Monthly Interface Flow For January 01, 1999 – December 31, 2002

Central East Post – Contingency Voltage Collapse Limit

l/o New Scotland 99 Bus

This page is intentionally left blank.

Appendix D – Interfaces Simultaneously Constraining

Prepare by : Tu Minh Thi Nguyen

Interfaces Simultaneously Constraning	1999		2000		2001		2002	
	Nr.of Hour	% of Year	Nr.of Hour	% of Year	Nr.of Hour	% of Year	Nr.of Hour	% of Year
C_EAST DYS_EAST	.	.	8	0.10%	1	0.00%	7	0.10%
C_EAST TE-NYISO	.	.	96	1.00%	99	1.00%	108	1.00%
C_EAST S/D/WOODIE	8	0.10%	109	1.00%	30	0.30%	48	0.50%
C_EAST S/D/WOODIE DYS_EAST	.	.	4	0.00%	.	.	3	0.00%
C_EAST S/D/WOODIE TE-NYISO	.	.	18	0.20%	21	0.20%	23	0.30%
C_EAST M_SOUTH	2	0.00%	.	.	.	.	.	.
C_EAST M_SOUTH S/D/WOODIE TE-NYISO	.	.	1	0.00%	.	.	.	.
C_EAST UPNY CON ED	.	.	10	0.10%	20	0.20%	21	0.20%
C_EAST UPNY CON ED DYS_EAST	.	.	3	0.00%	.	.	.	.
C_EAST UPNY CON ED TE-NYISO	.	.	3	0.00%	6	0.10%	2	0.00%
C_EAST UPNY CON ED S/D/WOODIE	.	.	7	0.10%	3	0.00%	2	0.00%
C_EAST UPNY CON ED S/D/WOODIE DYS_EAST	.	.	4	0.00%	.	.	1	0.00%
C_EAST UPNY CON ED S/D/WOODIE TE-NYISO	.	.	.	.	3	0.00%	6	0.10%
C_EAST TOTAL EAST	.	.	3	0.00%	1	0.00%	.	.
C_EAST C_E NET P/C	94	1.00%	1440	16.00%	694	8.00%	946	11.00%
C_EAST C_E NET DYS_EAST DYS_EAST	.	.	.	.	6	0.10%	2	0.00%
C_EAST C_E NET DYS_EAST TE-NYISO	.	.	235	3.00%	128	1.00%	101	1.00%
C_EAST C_E NET DYS_EAST S/D/WOODIE	19	0.20%	192	2.00%	61	0.70%	21	0.20%
C_EAST C_E NET DYS_EAST S/D/WOODIE DYS_EAST	.	.	1	0.00%	1	0.00%	2	0.00%
C_EAST C_E NET DYS_EAST S/D/WOODIE TE-NYISO	.	.	47	0.50%	24	0.30%	1	0.00%
C_EAST C_E NET DYS_EAST M_SOUTH	2	0.00%	2	0.00%	.	.	1	0.00%
C_EAST C_E NET DYS_EAST M_SOUTH TE-NYISO	.	.	2	0.00%	.	.	1	0.00%
C_EAST C_E NET DYS_EAST M_SOUTH S/D/WOODIE	1	0.00%	.	.	.	.	.	.
C_EAST C_E NET DYS_EAST M_SOUTH S/D/WOODIE TE-NYISO	.	.	1	0.00%	.	.	.	.
C_EAST C_E NET P/C UPNY CON ED	1	0.00%	18	0.20%	42	0.50%	7	0.10%
C_EAST C_E NET P/C UPNY CON ED TE-NYISO	.	.	6	0.10%	4	0.00%	1	0.00%
C_EAST C_E NET P/C UPNY CON ED S/D/WOODIE	.	.	.	.	1	0.00%	.	.
C_EAST C_E NET P/C UPNY CON ED S/D/WOODIE TE-NYISO	.	.	.	.	2	0.00%	.	.
C_EAST C_E NET P/C TOTAL EAST	2	0.00%	22	0.30%	4	0.00%	.	.
C_EAST C_E NET P/C TOTAL EAST DYS_EAST	.	.	1	0.00%	.	.	.	.
C_EAST C_E NET P/C TOTAL EAST S/D/WOODIE	.	.	4	0.00%	.	.	.	.
C_EAST NET DYS_EAST DYS_EAST	1	0.00%	8	0.10%	16	0.20%	3	0.00%
C_EAST NET DYS_EAST TE-NYISO	.	.	233	3.00%	210	2.00%	150	2.00%
C_EAST NET DYS_EAST TE-NYISO DYS_EAST	.	.	2	0.00%	.	.	.	.
C_EAST NET DYS_EAST S/D/WOODIE	312	4.00%	599	7.00%	277	3.00%	41	0.50%
C_EAST NET DYS_EAST S/D/WOODIE DYS_EAST	.	.	2	0.00%	5	0.10%	.	.
C_EAST NET DYS_EAST S/D/WOODIE TE-NYISO	.	.	55	0.60%	43	0.50%	2	0.00%
C_EAST NET DYS_EAST S/D/WOODIE TE-NYISO DYS_EAST	.	.	1	0.00%	.	.	.	.
C_EAST NET DYS_EAST M_SOUTH TE-NYISO	.	.	1	0.00%	.	.	.	.
C_EAST NET P/C UPNY CON ED	9	0.10%	19	0.20%	83	0.90%	11	0.10%
C_EAST NET P/C UPNY CON ED TE-NYISO	.	.	5	0.10%	1	0.00%	1	0.00%
C_EAST NET P/C UPNY CON ED S/D/WOODIE	.	.	3	0.00%	3	0.00%	2	0.00%
C_EAST NET P/C UPNY CON ED S/D/WOODIE TE-NYISO	.	.	1	0.00%	.	.	.	.
C_EAST NET P/C TOTAL EAST	20	0.20%	22	0.30%	4	0.00%	.	.
C_EAST NET P/C TOTAL EAST S/D/WOODIE	1	0.00%	.	.	.	.	.	.
TE-NYISO DYS_EAST	.	.	1	0.00%	.	.	.	.
M_SOUTH TE-NYISO	.	.	1	0.00%	5	0.10%	.	.
M_SOUTH S/D/WOODIE TE-NYISO	.	.	.	.	1	0.00%	.	.
S/D/WOODIE DYS_EAST	.	.	14	0.20%	5	0.10%	13	0.10%
S/D/WOODIE TE-NYISO	.	.	68	0.80%	67	0.80%	71	0.80%
UPNY CON ED DYS_EAST	.	.	3	0.00%	1	0.00%	.	.
UPNY CON ED TE-NYISO	.	.	11	0.10%	17	0.20%	23	0.30%
UPNY CON ED S/D/WOODIE	.	.	16	0.20%	31	0.40%	57	0.70%
UPNY CON ED S/D/WOODIE DYS_EAST	.	.	1	0.00%	.	.	.	.
UPNY CON ED S/D/WOODIE TE-NYISO	.	.	2	0.00%	.	.	9	0.10%
W_CENT DYS_EAST	3	0.00%	15	0.20%	2	0.00%	49	0.60%

W_CENT S/D/WOODIE	.	.	1	0.00%	2	0.00%	2	0.00%
W_CENT S/D/WOODIE DYS_EAST	.	.	2	0.00%	.	.	5	0.10%
W_CENT TOTAL EAST	.	.	.	.	2	0.00%	.	.
W_CENT C_EAST NET P/C	1	0.00%	12	0.10%	5	0.10%	12	0.10%
W_CENT C_EAST NET DYS_EAST DYS_EAST	.	.	14	0.20%	3	0.00%	7	0.10%
W_CENT C_EAST NET DYS_EAST S/D/WOODIE	.	.	6	0.10%	.	.	1	0.00%
W_CENT C_EAST NET DYS_EAST S/D/WOODIE DYS_EAST	.	.	5	0.10%	.	.	.	.
W_CENT C_EAST	.	.	.	.	.	.	2	0.00%
W_CENT C_EAST C_E NET P/C	.	.	.	.	5	0.10%	.	.
W_CENT C_EAST C_E NET DYS_EAST DYS_EAST	.	.	.	.	3	0.00%	.	.
W_CENT C_EAST C_E NET DYS_EAST S/D/WOODIE DYS_EAST	.	.	1	0.00%	.	.	.	.
W_CENT C_EAST C_E NET P/C UPNY CON ED	.	.	.	.	3	0.00%	.	.
W_CENT C_EAST C_E NET P/C UPNY CON ED DYS_EAST	.	.	.	.	1	0.00%	.	.
	=====	=====	=====	=====	=====	=====	=====	=====
Total 69	476	5.00%	3361	38.00%	1946	22.00%	1765	20.00%
C_EAST/C_EAST Net P/C excluded	382	4.00%	1921	22.00%	1252	14.00%	819	9.00%
C_EAST/Total East excluded	360	3.80%	1874	21.40%	1243	14.00%	819	9.00%

This page is intentionally left blank.

Appendix E – NYISO Operating

Interfaces & OASIS Transmission Paths

TABLE OF CONTENTS

This page is intentionally left blank.

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
East Springfield - Inghams*	942	115
Inghams Bus Tie	PAR	115

TOTAL EAST		
Central-Capital/MidHudson		
Name	**Line ID**	**Voltage (kV)**
Coopers-Middletown*	CCRT-34	345
Coopers-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
East Springfield - Inghams*	942	115
Inghams Bus Tie	PAR	115
West Woodbourne*115/69	T152	115/69
PJM East-Capital/MidHudson		
Branchburg-Ramapo*	5018	500
*Waldwick- S.Mahwah	J3410	345
* Waldwick-S.Mahwah	K3411	345
PJM East-New York City		
Hudson-Farragut*	C3403	345
Hudson-Farragut*	B3402	345
Linden-Goethals*	A2253	230
Adirondack-ISO-NE		
*Plattsburgh-Grand Isle	PV-20	115
PJM (Rockland Electric) - MidHudson		
Closter – Sparkill	751	69
Harings Corners – W. Nyack	701	69
Harings Corners – Burns	702	138
Montvale – Pearl River	491	69
Harings Corners – Pearl River	45	34
S. Mahwah – Ramapo	51	138
S. Mahwah - Hilburn	65	69
S. Mahwah 138/345		138/345

* indicates the metered end of circuit

MOSES SOUTH		
Adirondack-Central		
Name	Line ID	**Voltage (kV)**
*Massena-Marcy	MSU1	765
*Moses-Adirondack	MA-1	230
*Moses-Adirondack	MA-2	230
*Dennison-Colton	4	115
*Dennison-Colton	5	115
*Alcoa-N. Ogdensburg	13	115
Malone-Colton*	3	115

DYSINGER EAST		
Frontier-Genessee		
Name	**Line ID**	**Voltage (kV)**
*AES Somerset-Rochester (Sta 80)	SR-1/39	345
Niagara-Rochester*	NR2	345
*Stolle-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-Farmington	4	115
*Station 121-Sleight Road		115
St. 162 - S. Perry	906	115
*Clyde 199-Sleight Rd		115
Clyde 199-Clinton Corn		115
Hook Rd (RGE-NMPC)	TB#3	34.5/115
(Farmington 34.5/115kV)	#1	34.5/115
(Farmington 34.5/ 115kV)	#4	34.5/115

* indicates the metered end of circuit

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-Millwood	F31	345
*Ramapo-Buchanan North	Y94	345
Roseton-E. Fishkill*	305	345
East Fishkill – Sylvan Lake	A/990	115
East Fishkill 115/345		115/345

SPRAINBROOK-DUNWOODIE SOUTH		
Name	**Line ID**	**Voltage(kV)**
*Dunwoodie-Rainey	71	345
*Dunwoodie-Rainey	72	345
Sprainbrook-Tremont*	28	345
*Sprainbrook-West 49th Street	M51	345
*Sprainbrook-West 49th Street	M52	345
*Lake Success-Jamaica	903	138
*Valley Stream-Jamaica	901L/M	138
*Dunwoodie-Sherman Creek	99031	138
Dunwoodie-Sherman Creek*	99032	138
*Dunwoodie-East 179th Street	99153	138

CONED - LIPA		
Westchester - Long Island		
Name	**Line ID**	**Voltage (kV)**
*Dunwoodie-Shore Road	Y50	345
*Sprainbrook-East Garden City	Y49	345
New York City - Long Island		
Jamaica-Valley Stream*	901L/M	138
Jamaica-Lake Success*	903	138
NYISO-ISO-NE		
Adirondack-ISO-NE		
Name	**Line ID**	**Voltage (kV)**
*Plattsburgh-Grand Isle	PV-20	115
Capital / MidHudson -ISO-NE		
*Alps-Berkshire	393	345
*Pleasant Valley-Long Mnt.	398	345
Rotterdam-Bear Swamp*	E205W	230
North Troy-Bennington*	6	115
*Whitehall-Rutland (Velco)	7/K37	115
*Smithfield-Salisbury		69
Long Island-ISO-NE		
*Northport-Norwalk	1385	138

* indicates the metered end of circuit

PJM-NYISO			
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
	*Warren-Falconer	171	115
PJM East-Capital/MidHudson			
	Branchburg-Ramapo*	5018	500
	*Waldwick-S.Mahwah	J3410	345
	*Waldwick-S.Mahwah	K3411	345
PJM (Rockland Electric) - MidHudson			
	Closter – Sparkill	751	69
	Harings Corners – W. Nyak	701	69
	Harings Corners – Burns	702	138
	Montvale – Pearl River	491	69
	Harings Corners – Pearl River	45	34
	S. Mahwah – Ramapo	51	138
	S. Mahwah - Hilburn	65	69
	S. Mahwah 138/345		138/345

IMO (Ontario)-NYISO			
Ontario East-Adirondack			
	Name	**Line ID**	**Voltage (kV)**
	St. Lawrence-Moses*	L33P	240
	St.Lawrence-Moses*	L34P	230
Ontario South-Frontier			
	Beck-Niagara*	PA301	345
	Beck-Niagara*	PA302	345
	Beck-Niagara*	PA27	230
	*Beck-Packard	BP76	230

TE-NY *note: TE-NYISO is MSC7040 line flow alone*			
TE-Adirondack			
	Name	**Line ID**	**Voltage(kV)**
	*Chateauguay-Massena	MSC7040	765
	Rosemont-Dennison*	1	115
	Rosemont-Dennison*	2	115

* indicates the metered end of circuit

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

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

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

Appendix F – Power Flows
On-peak vs. Off-peak

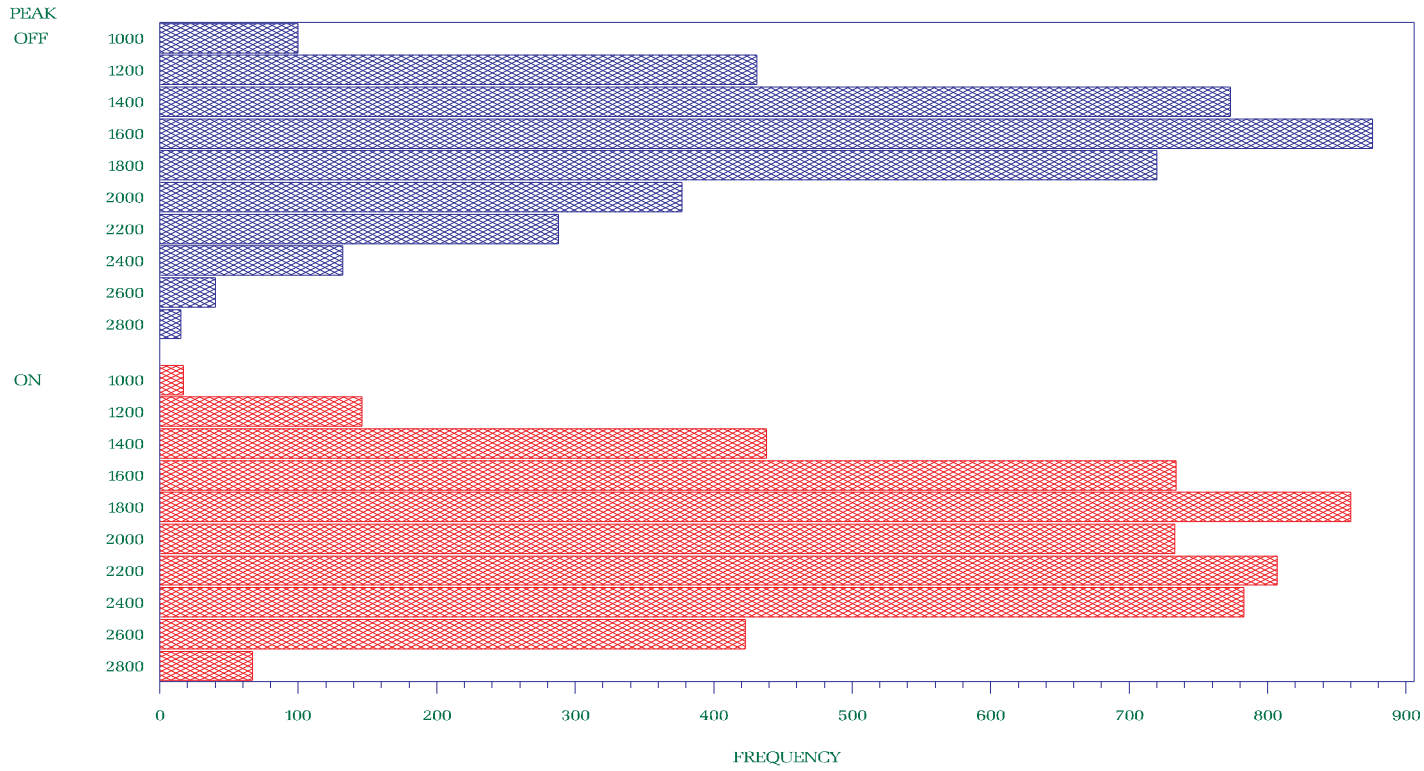
TABLE OF CONTENTS

Prepared by: Tu Minh Thi Nguyen

This page is intentionally left blank.

NYISO Frequency Interface Flow For January – December 2002

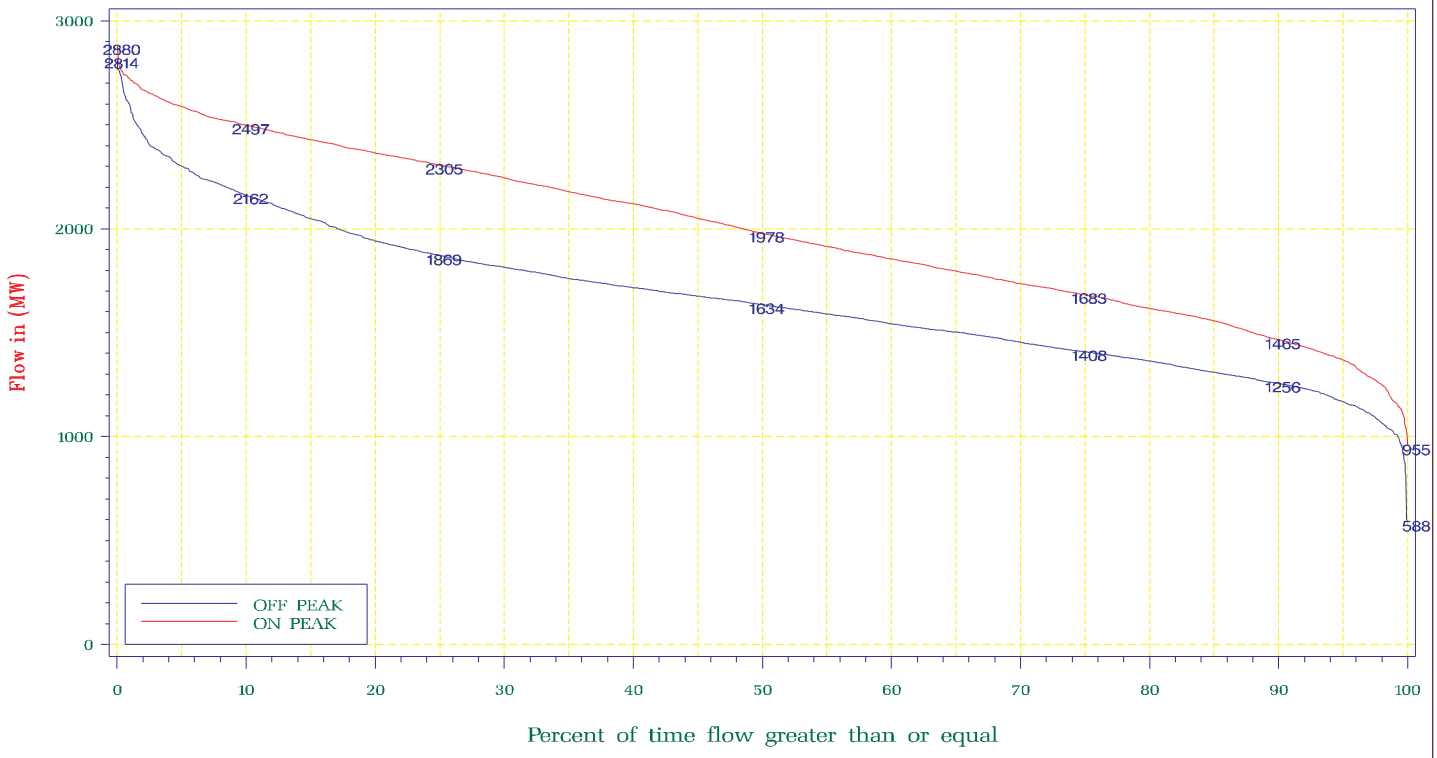
CENTRAL EAST



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

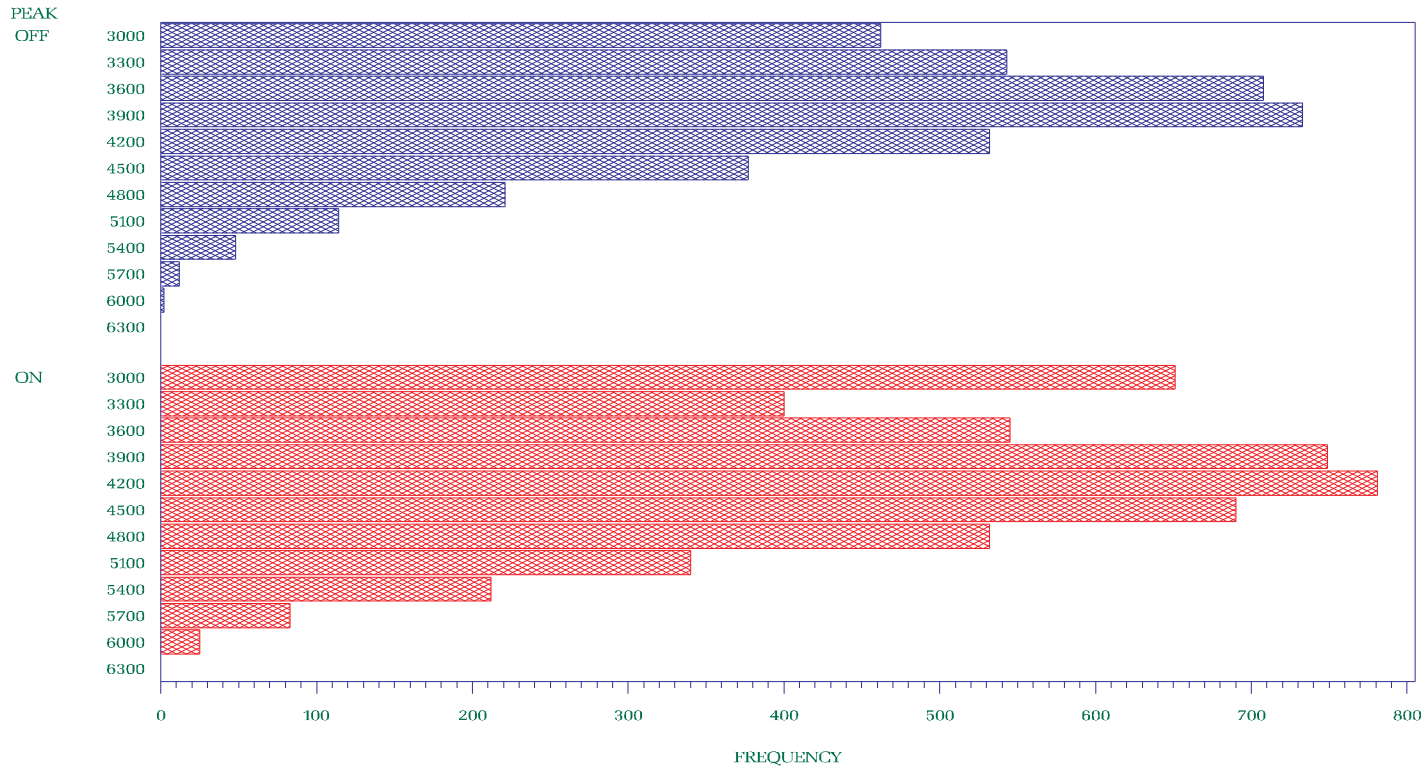
CENTRAL EAST



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

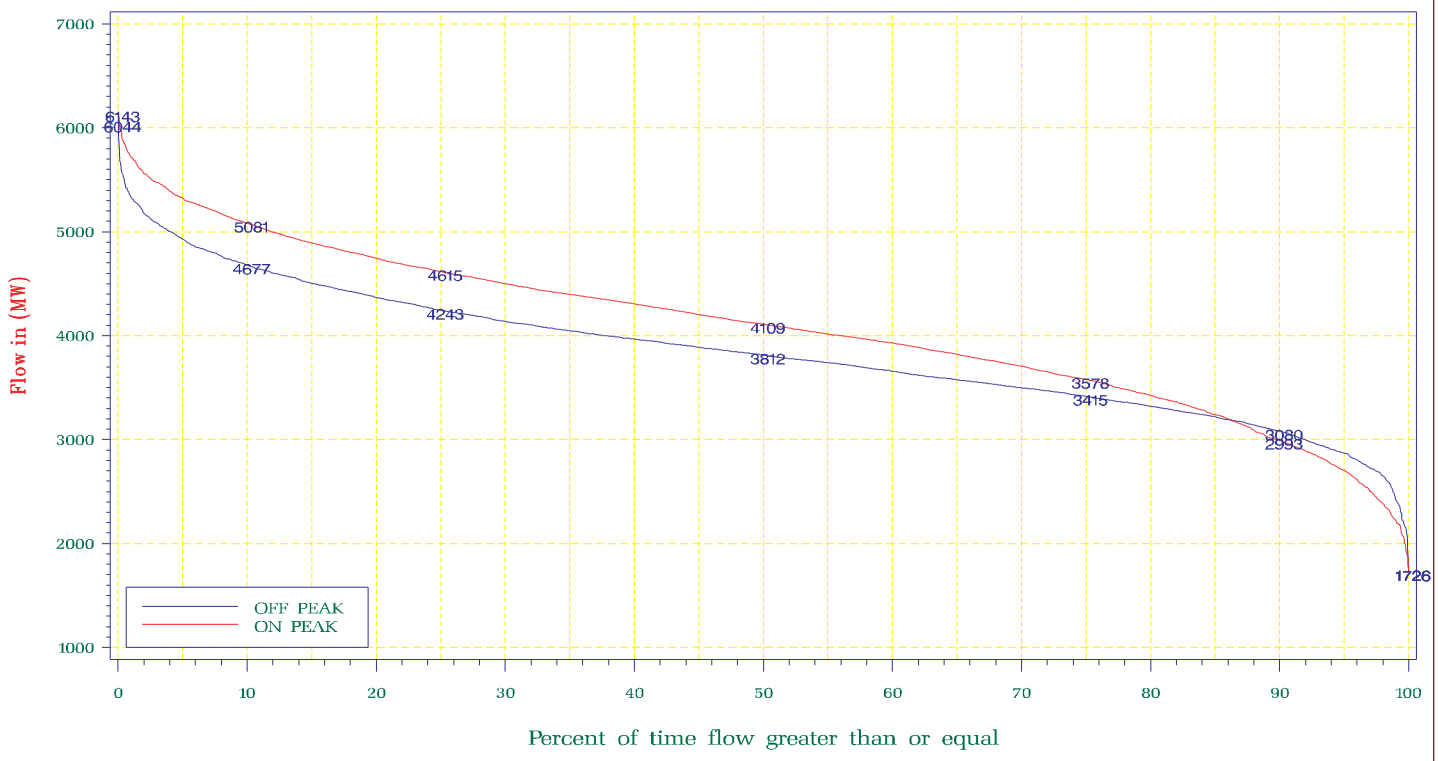
TOTAL EAST



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

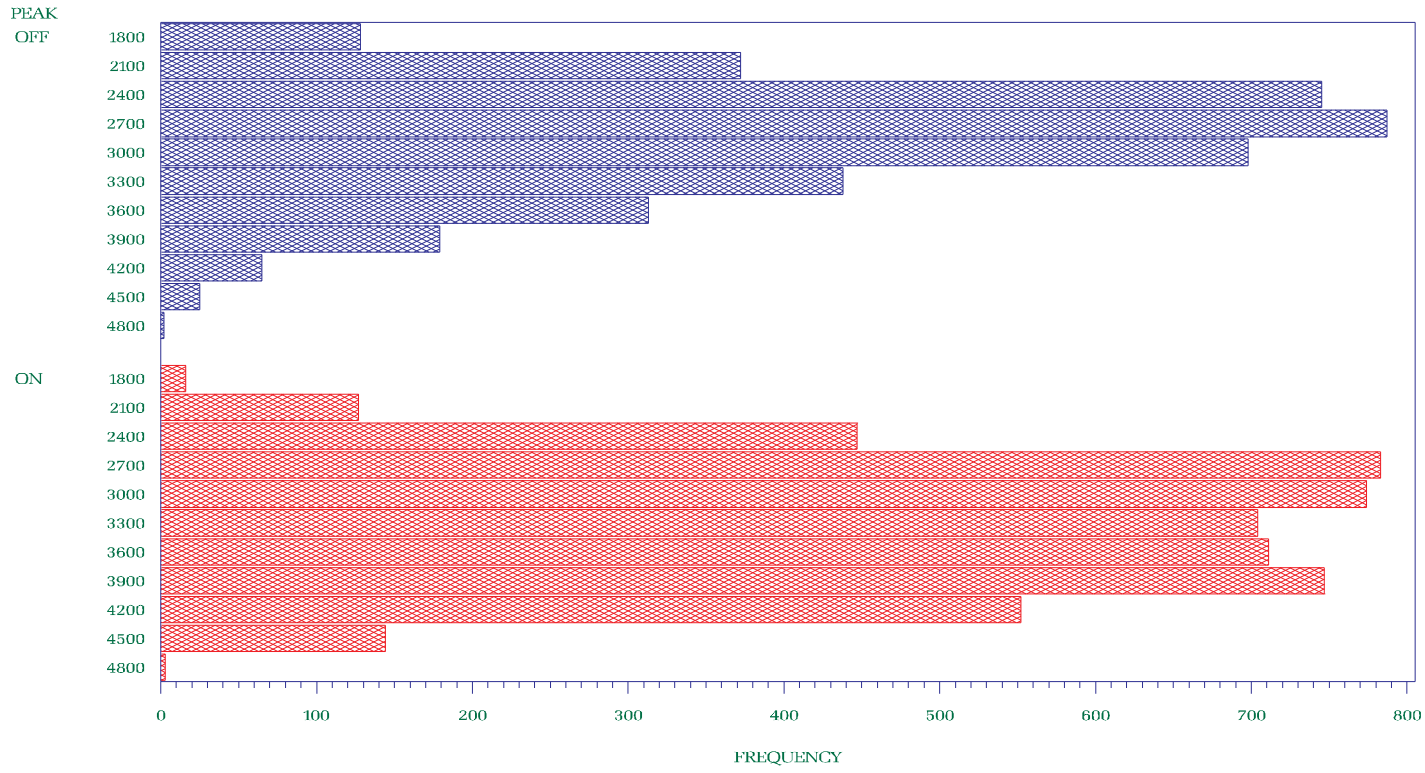
TOTAL EAST



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

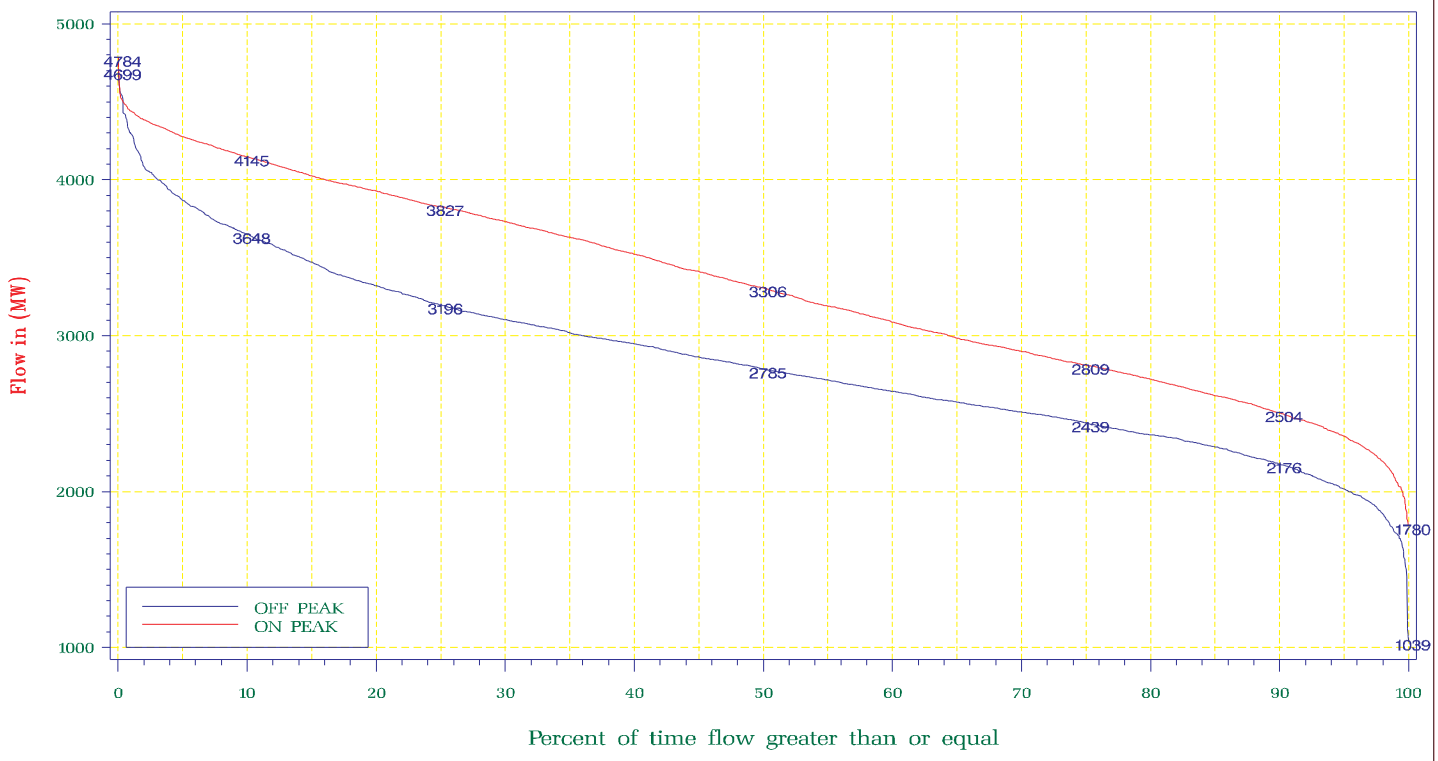
Central – Capital/Mid Hudson



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

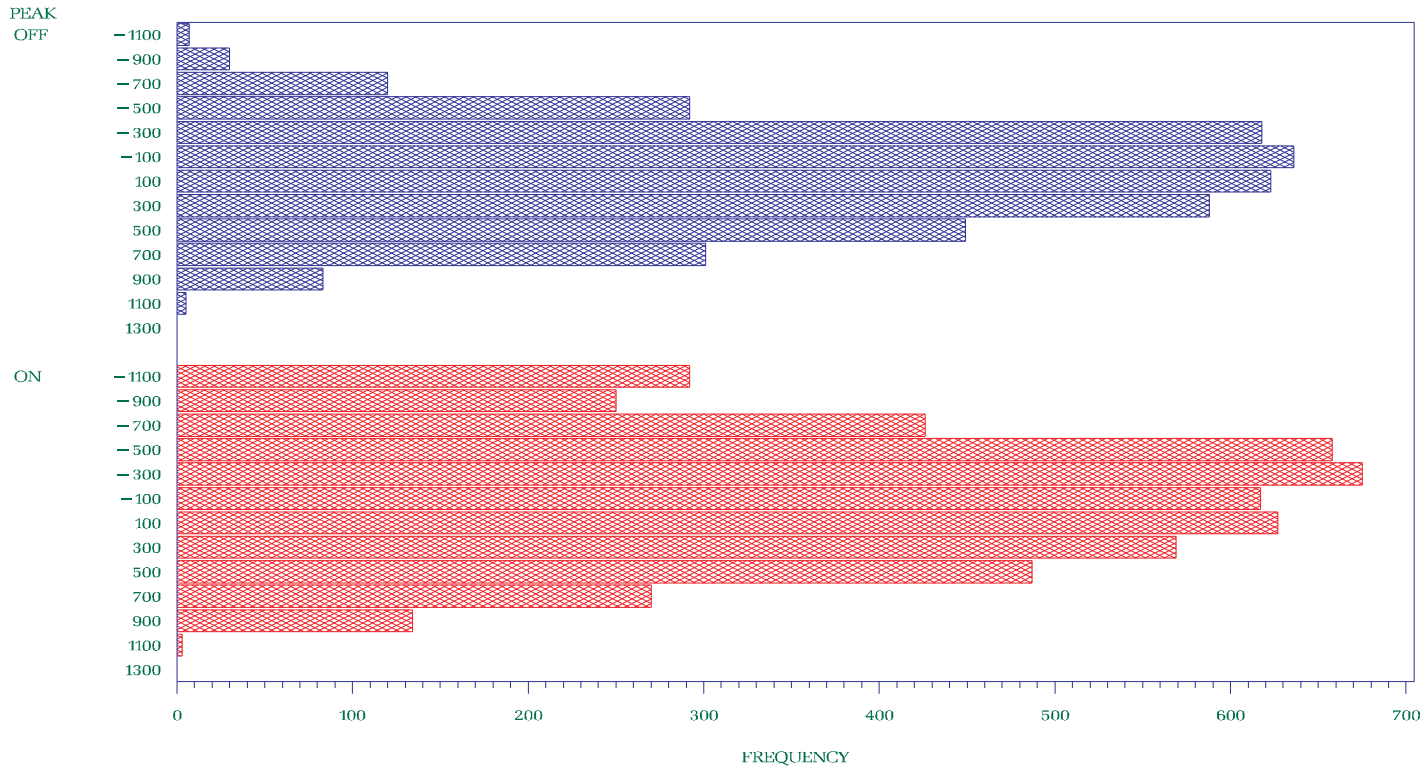
Central – Capital/Mid Hudson



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

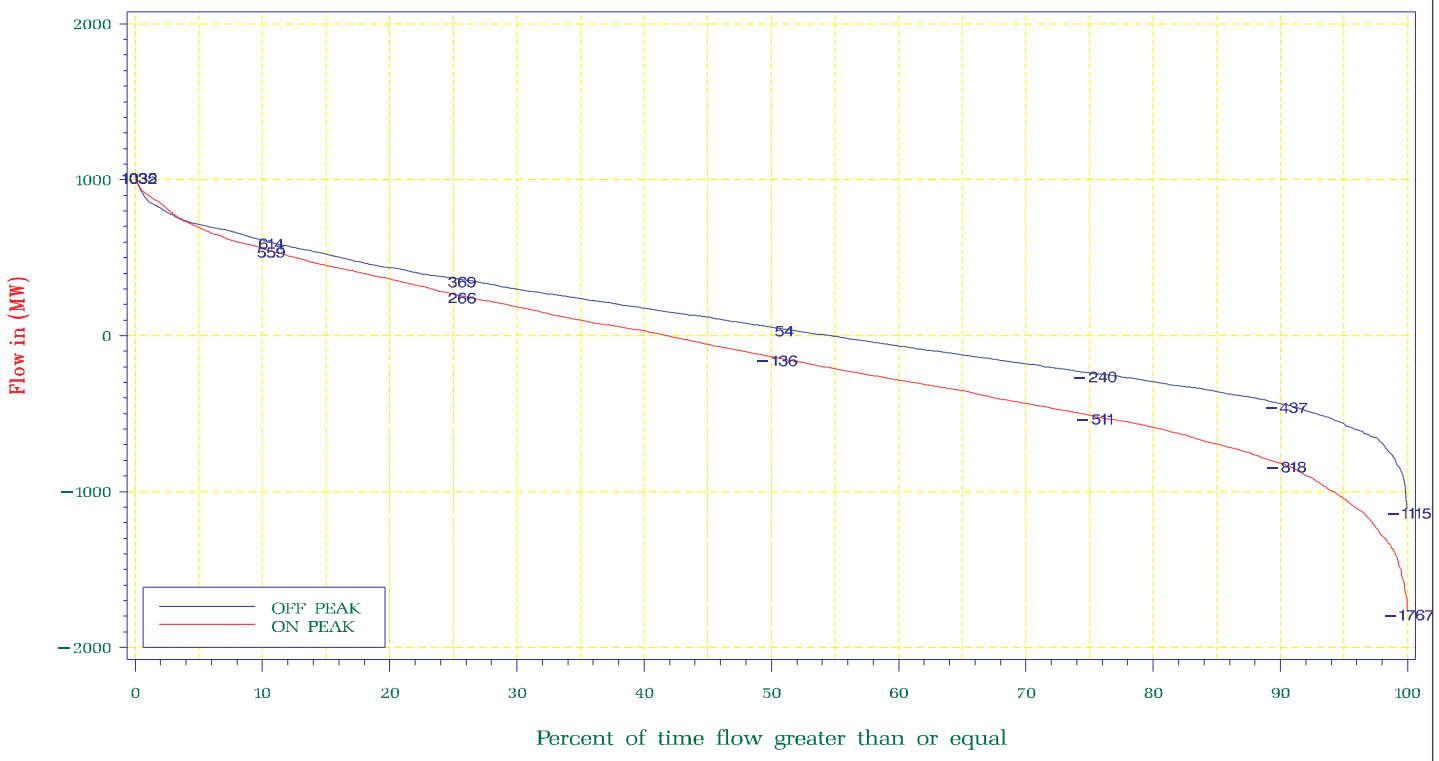
PJM East – Capital/Mid Hudson



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

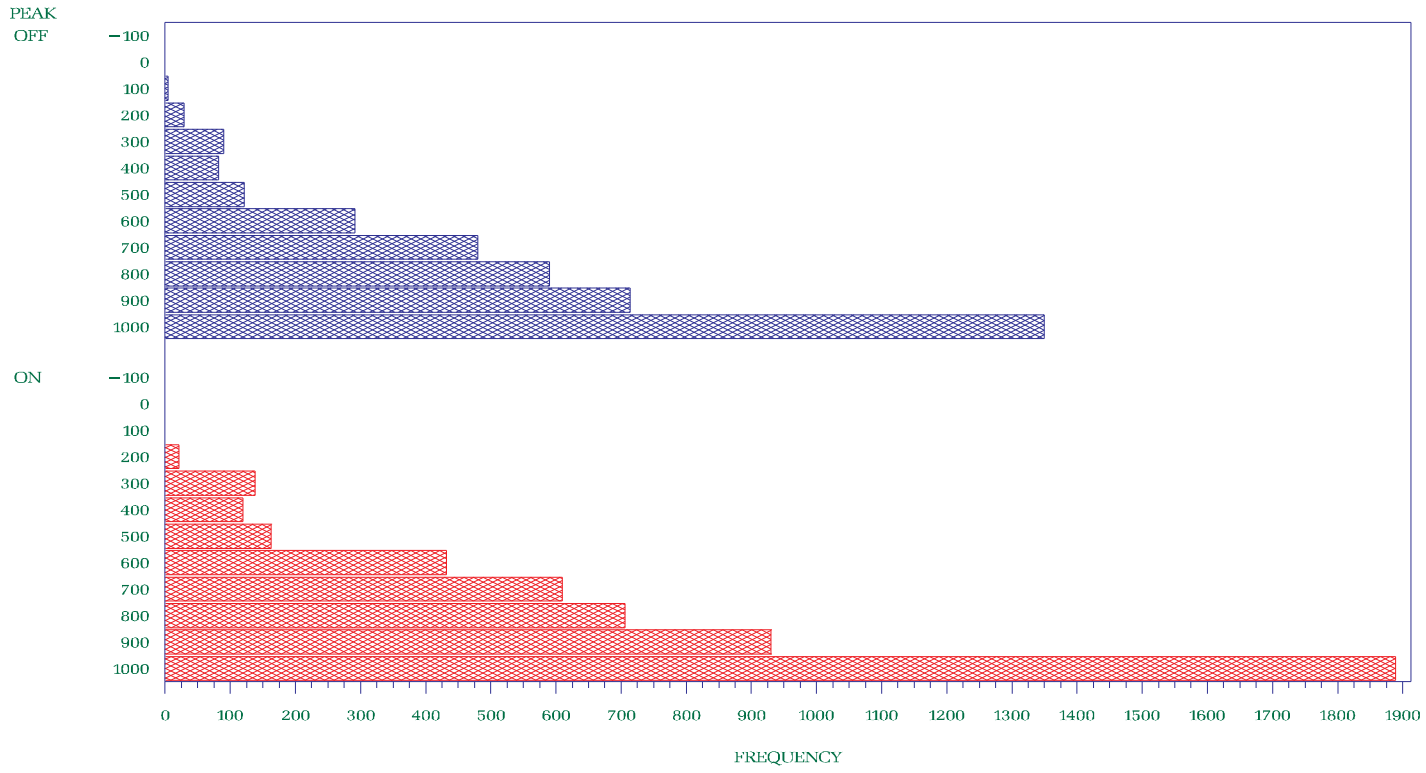
PJM East – Capital/Mid Hudson



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

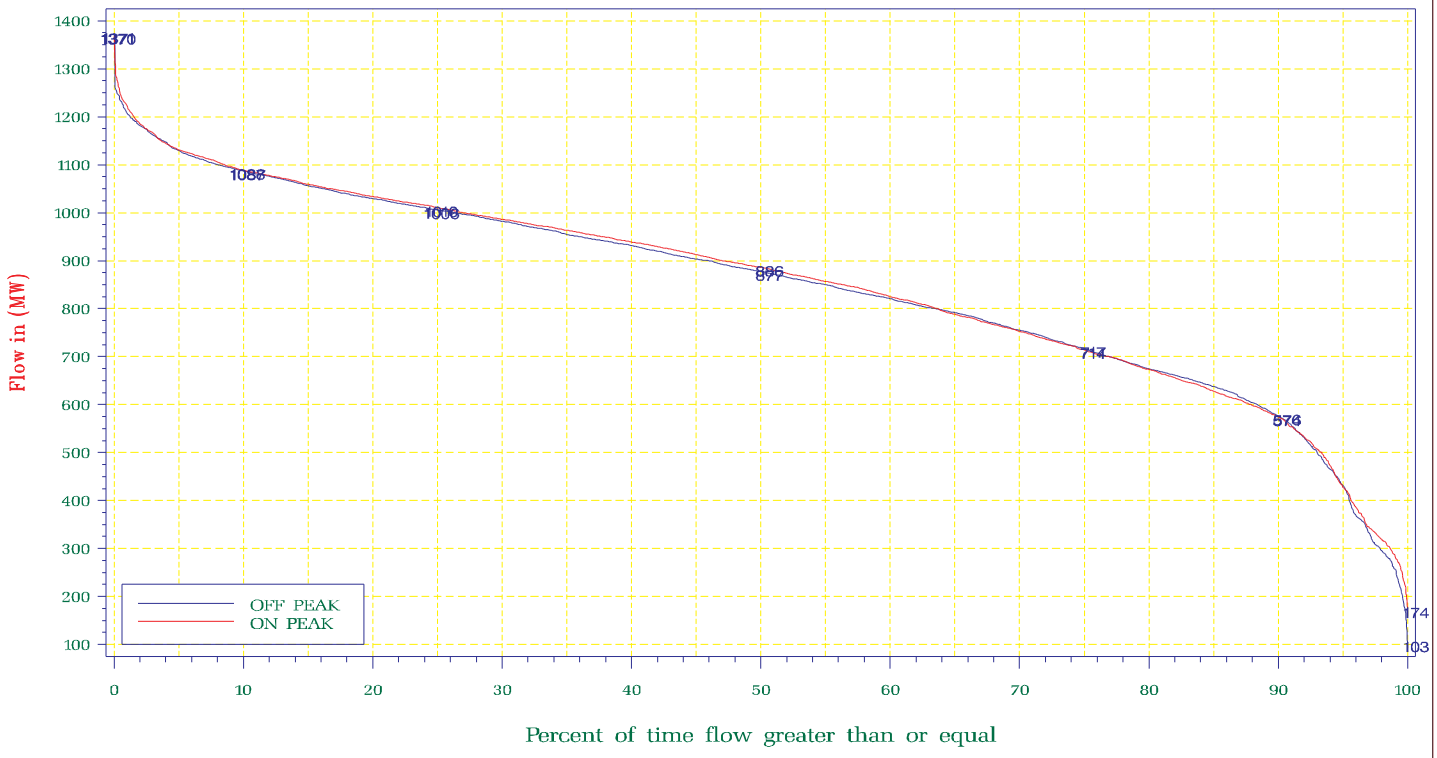
PJM East – New York City



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

PJM East – New York City

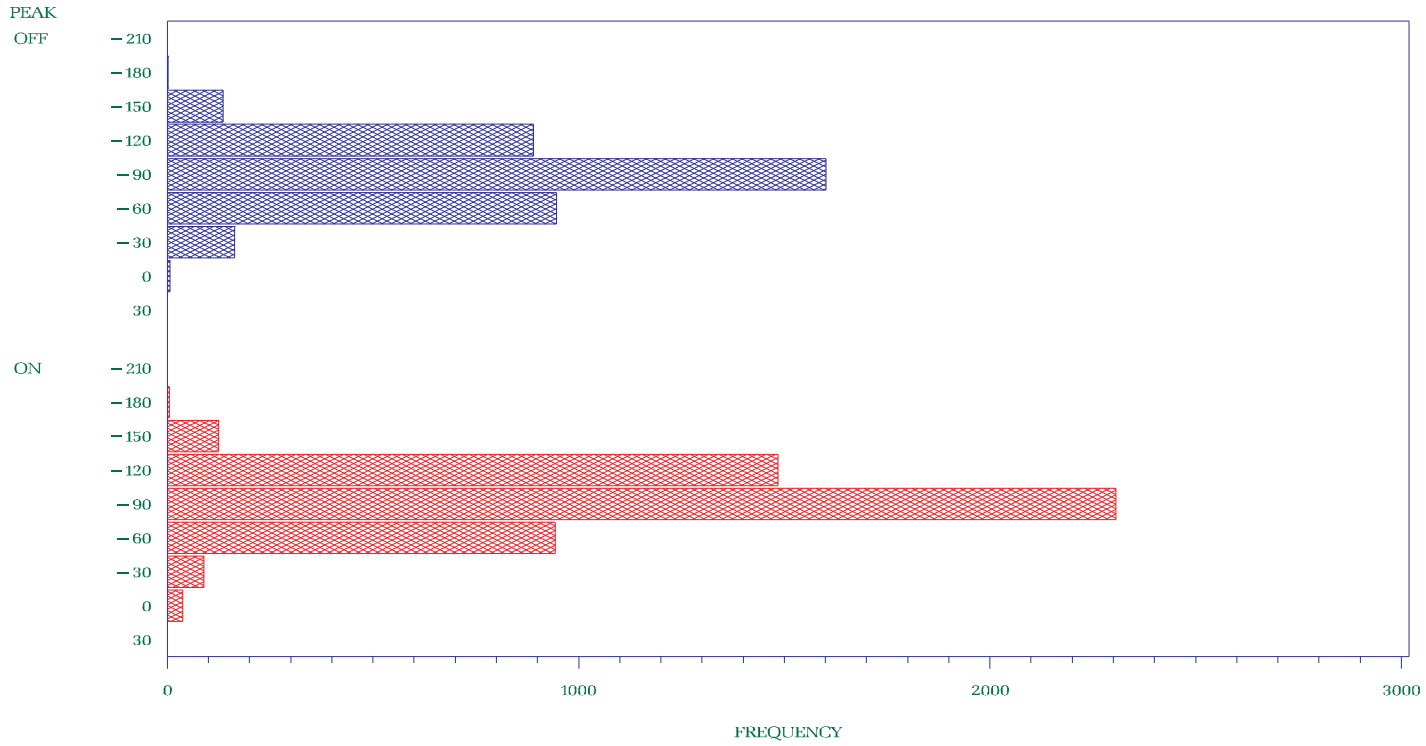


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

NE/Vt. North – Adirondack

PV – 20 Grand Isle – Plattsburgh



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

NE/Vt. North – Adirondack

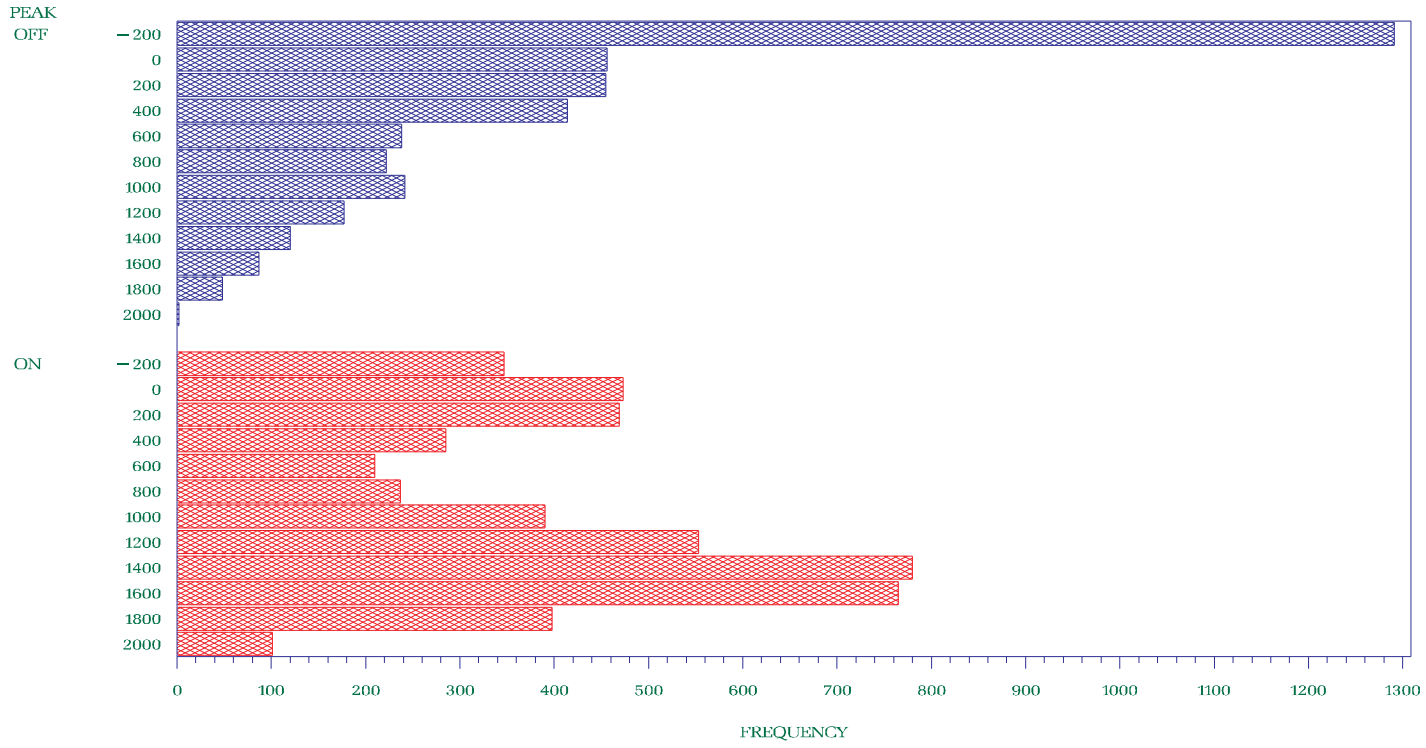
PV – 20 Grand Isle – Plattsburgh

OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

MOSES SOUTH

Adirondack – Central

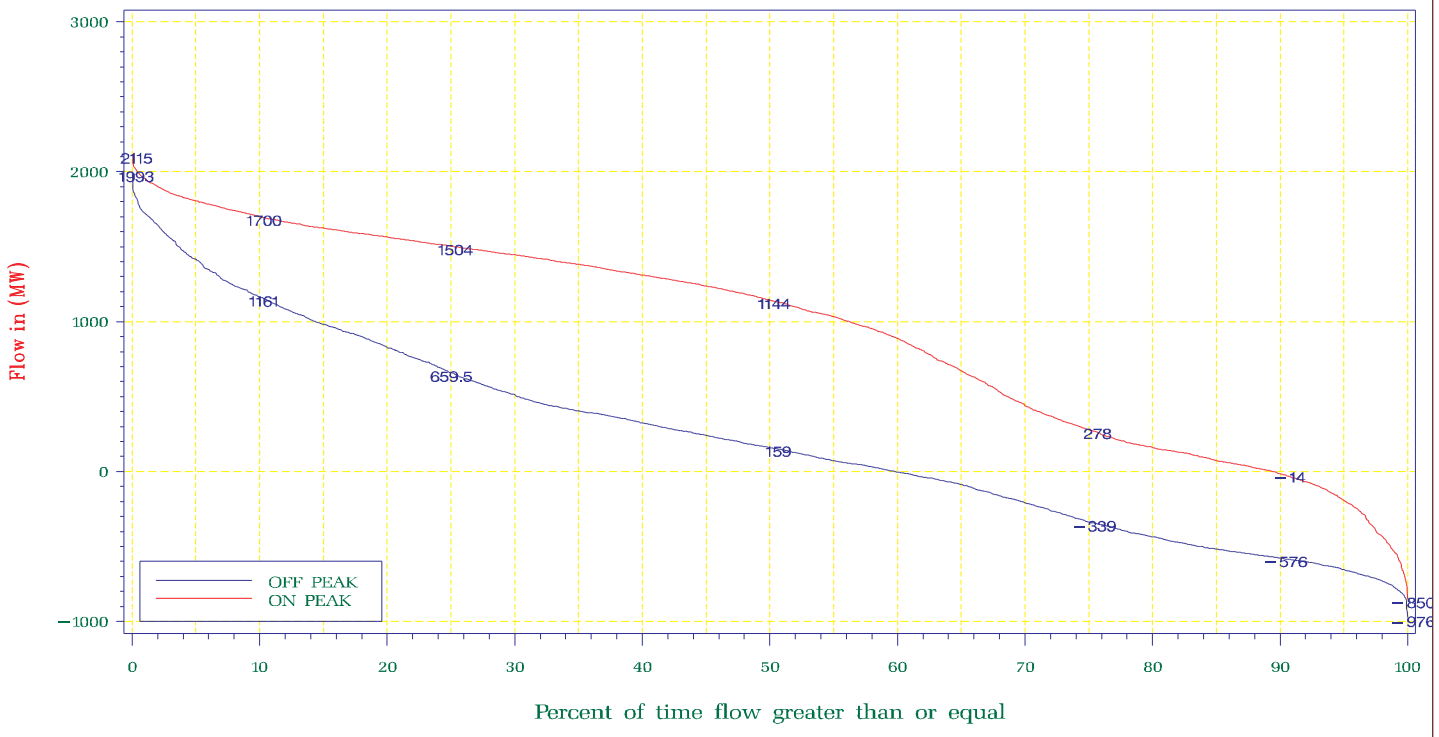


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

MOSES SOUTH

Adirondack – Central

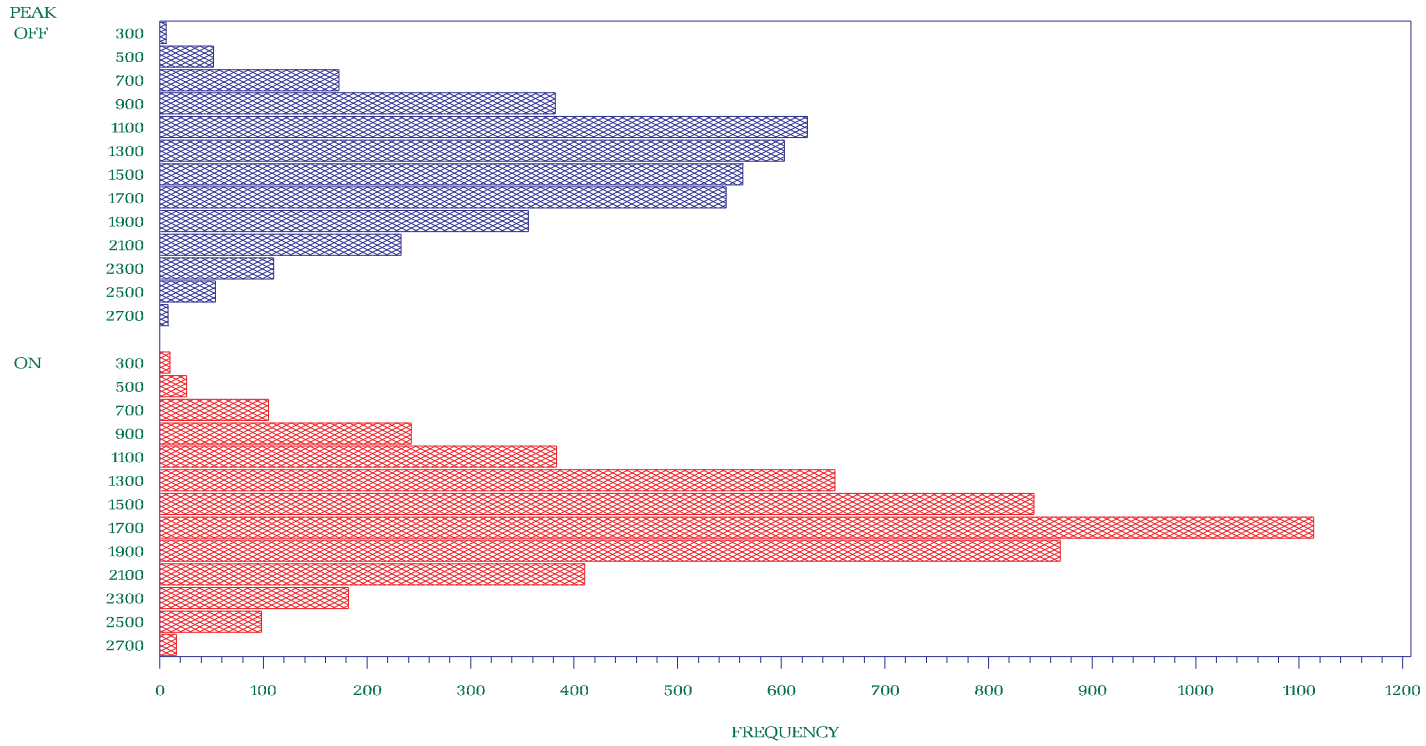


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

DYSINGER EAST

Frontier – Genesee

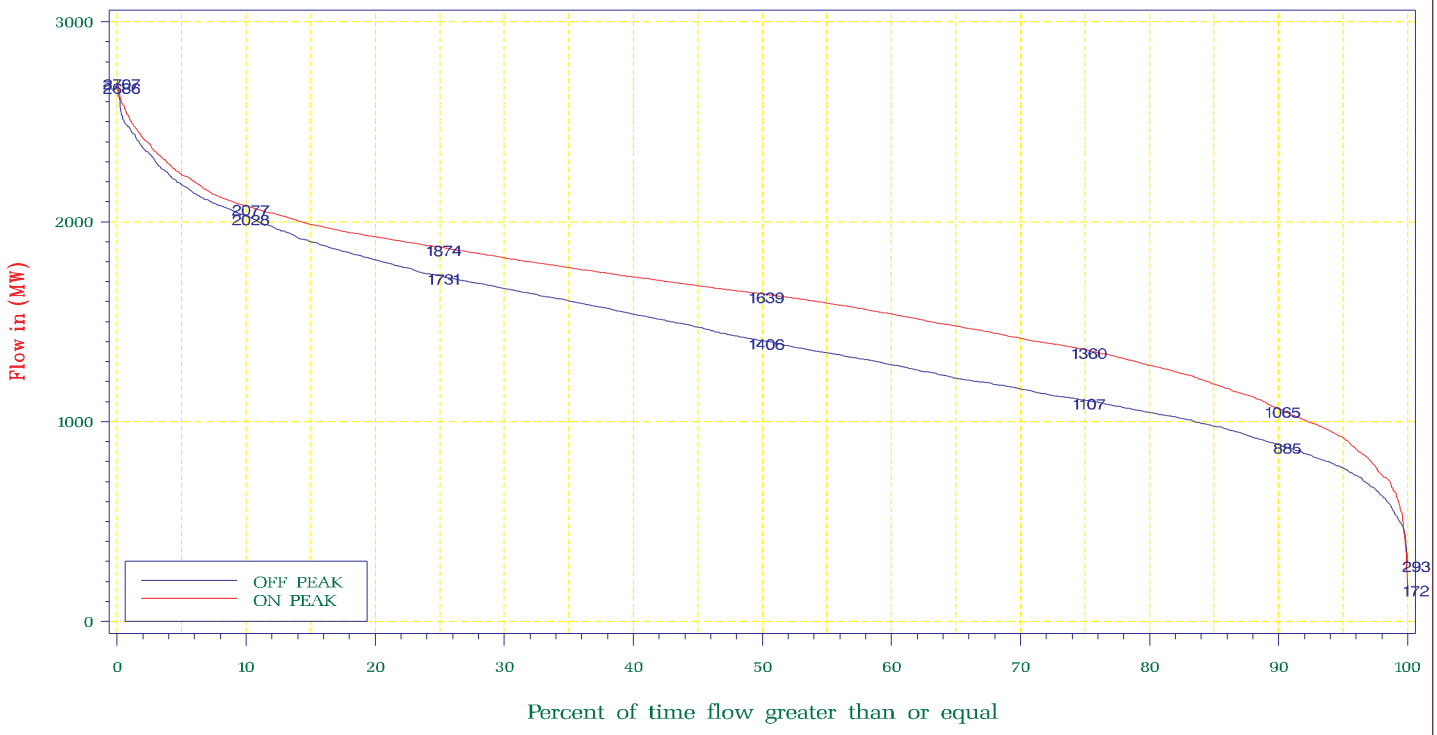


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

DYSINGER EAST

Frontier – Genesee



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

WEST CENTRAL

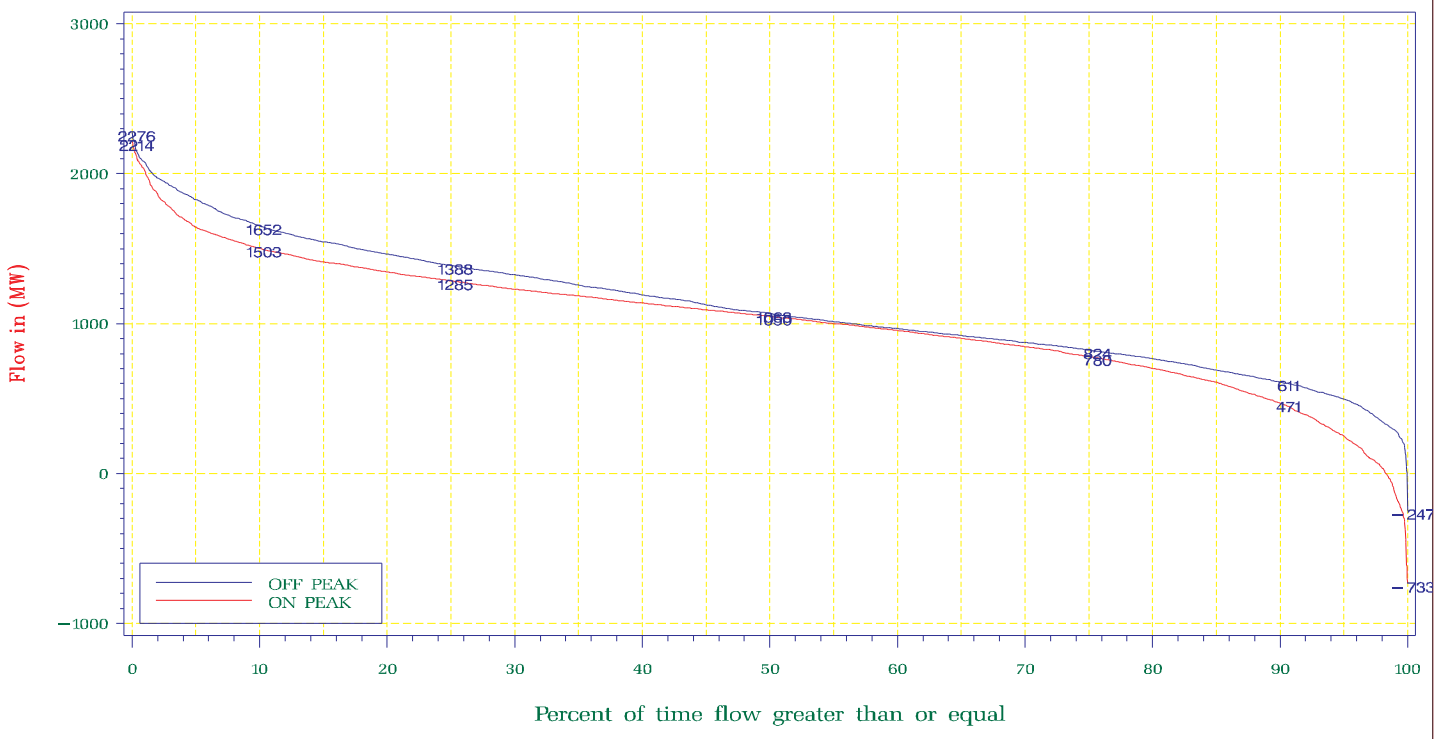
Genesee – Central

OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

WEST CENTRAL

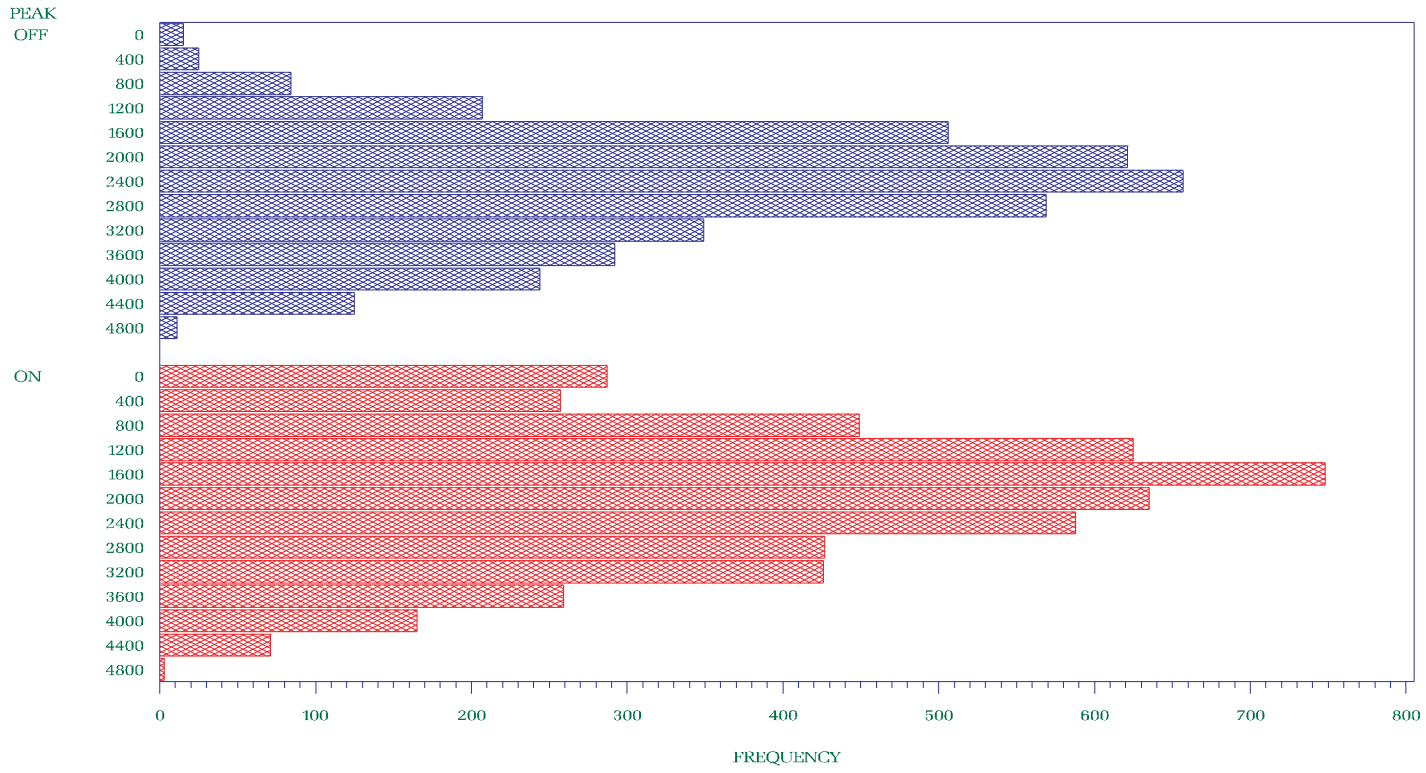
Genesee – Central



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

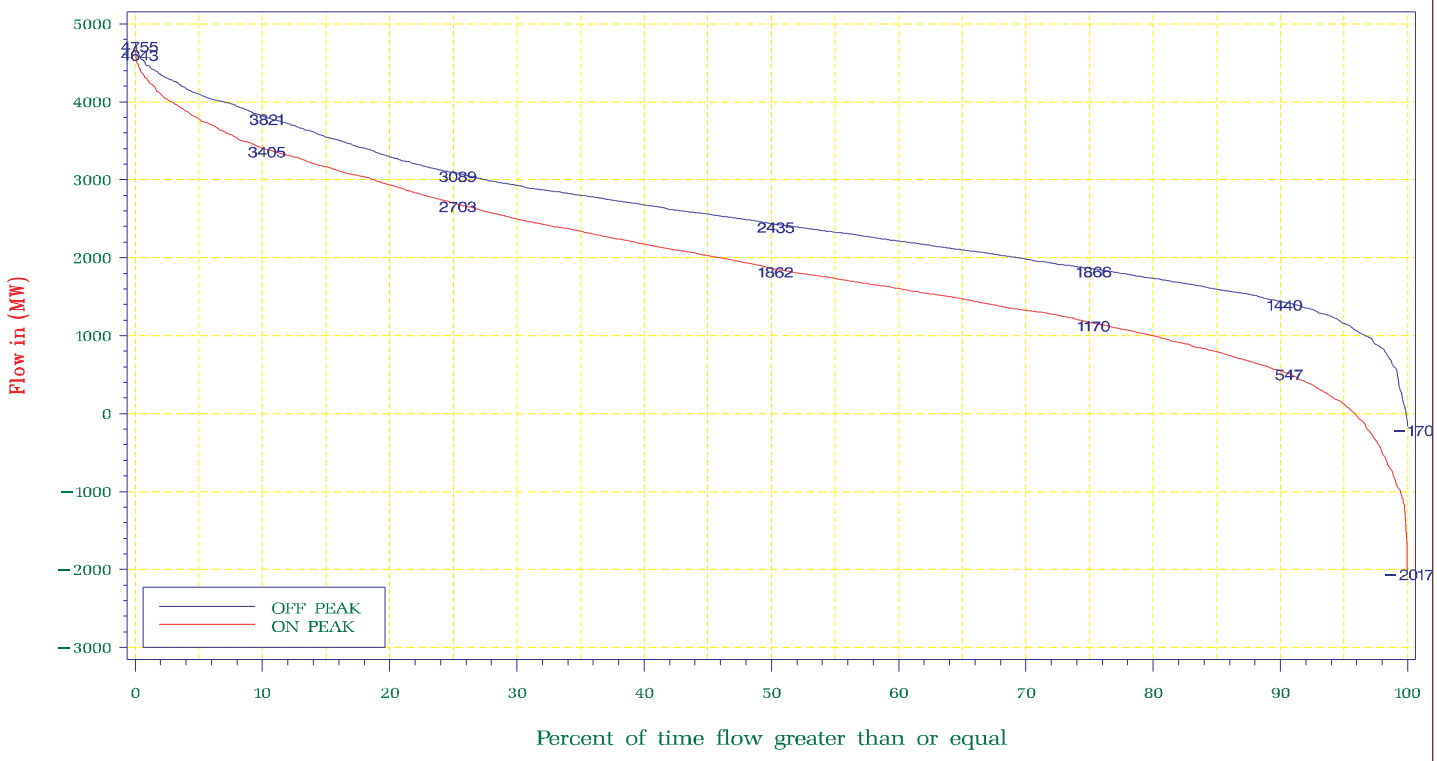
WEST CENTRAL (CLOSED)



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

WEST CENTRAL (CLOSED)

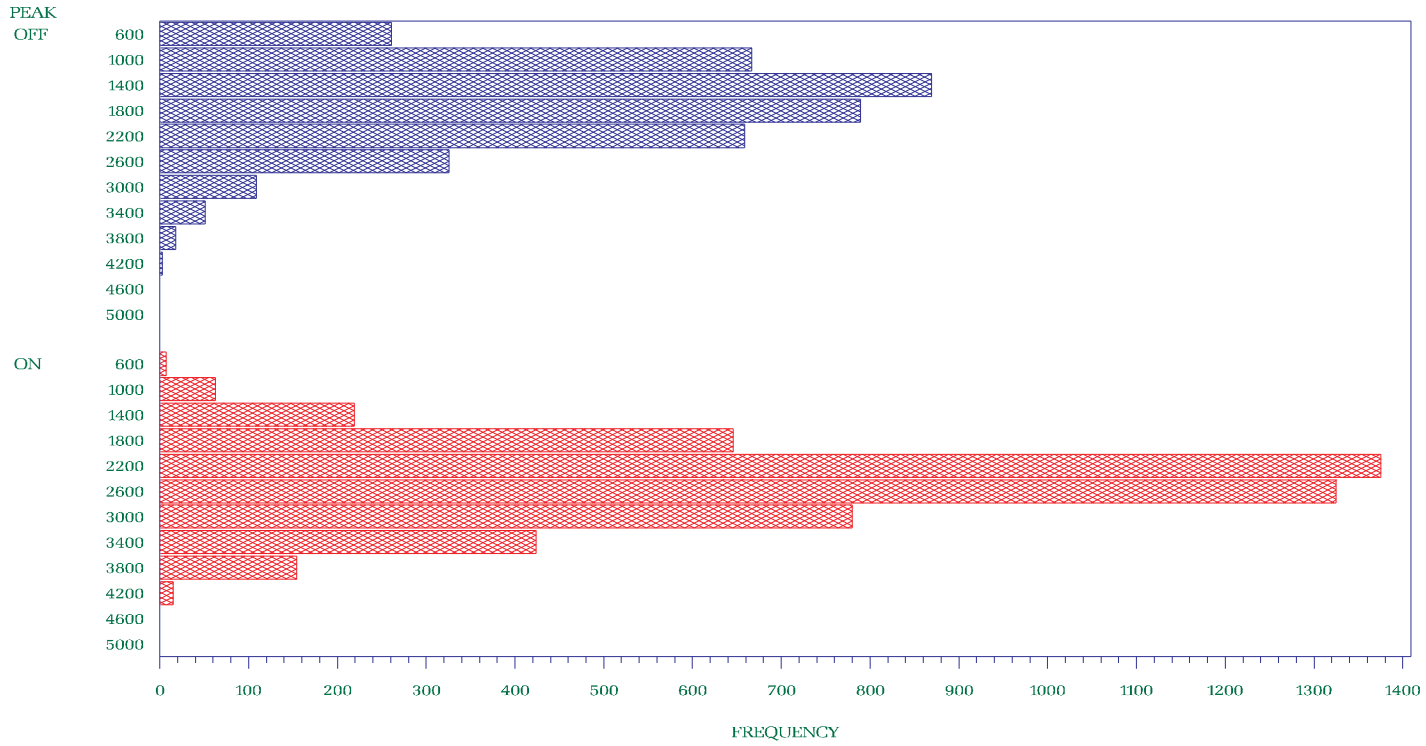


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

UPNY – CONED

Capital/Mid Hudson – Westchester

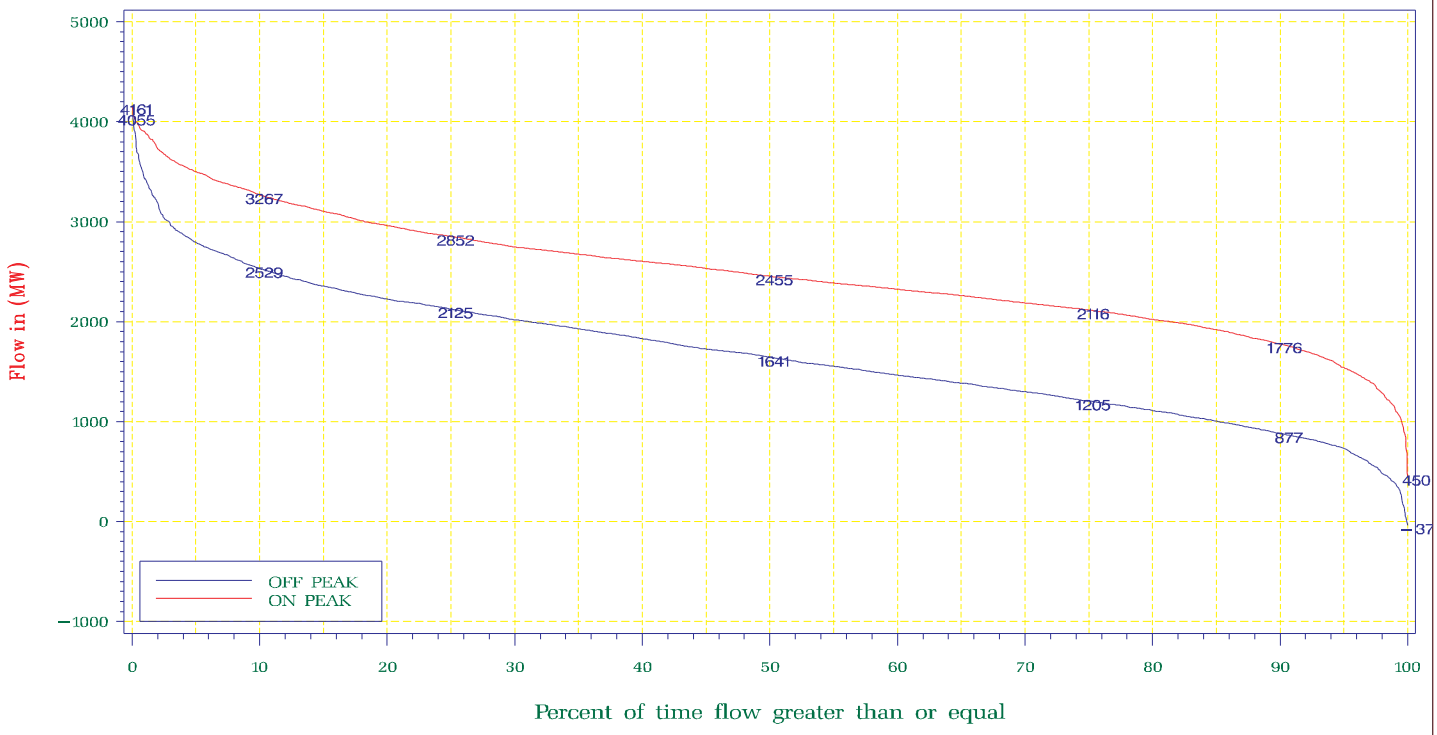


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

UPNY – CONED

Capital/Mid Hudson – Westchester



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

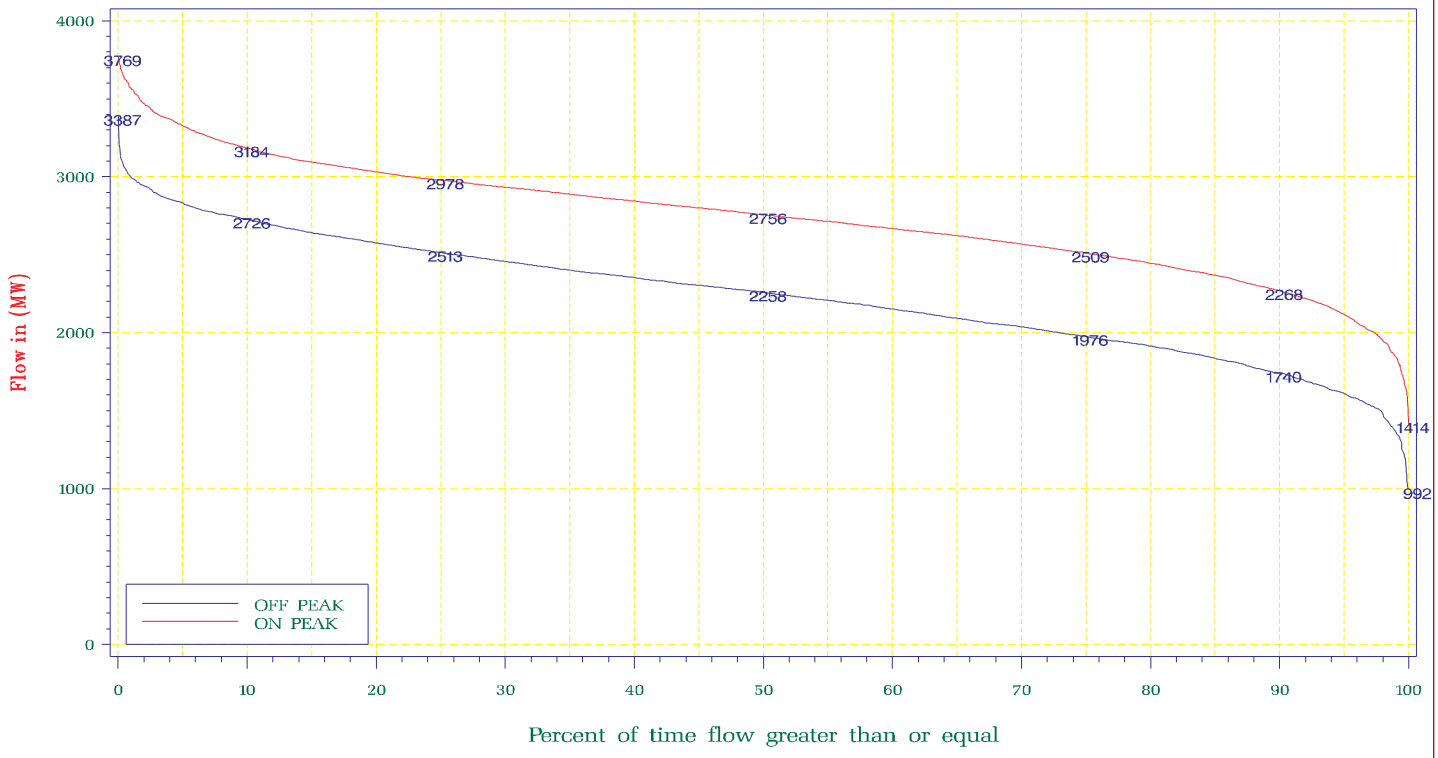
NYISO Frequency Interface Flow For January – December 2002

SPRAINBROOK – DUNWOODIE SOUTH

OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

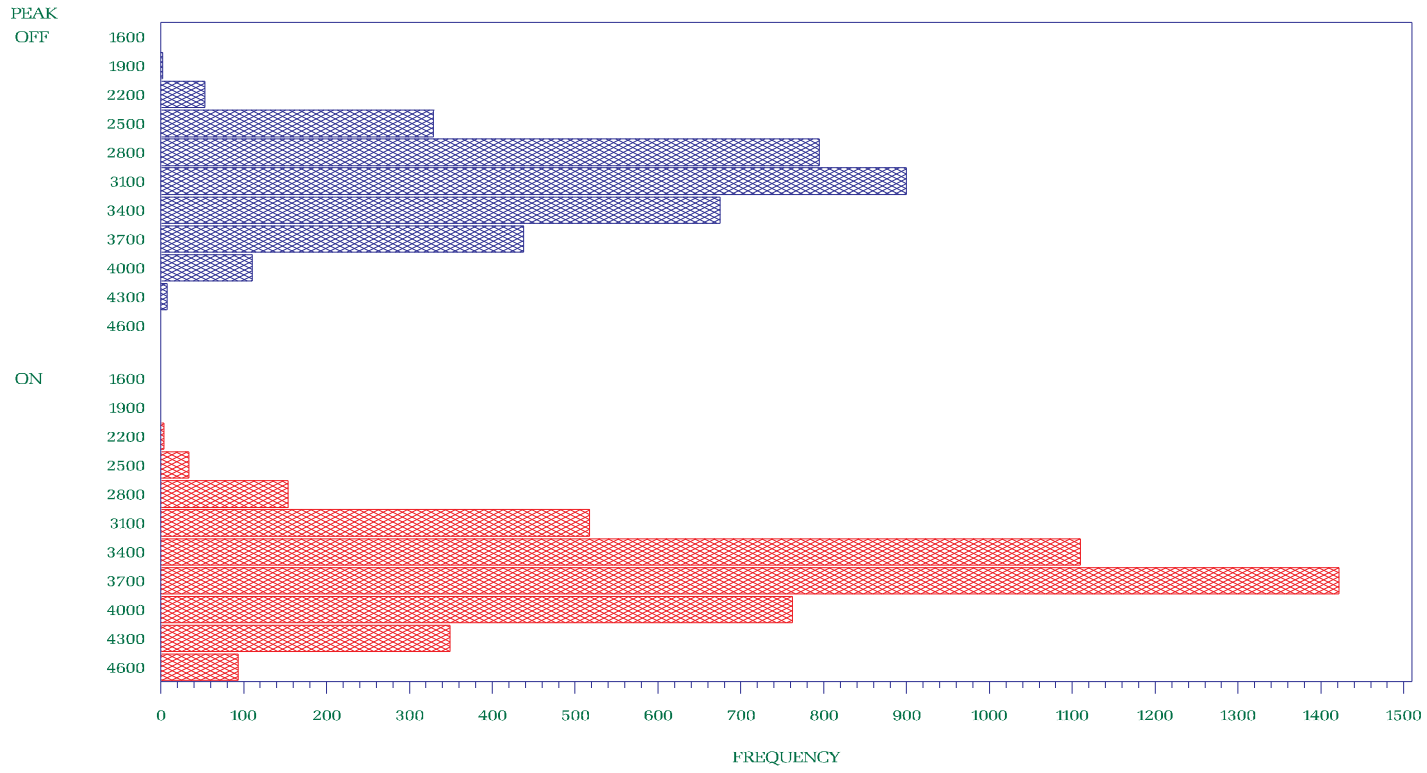
SPRAINBROOK – DUNWOODIE SOUTH



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

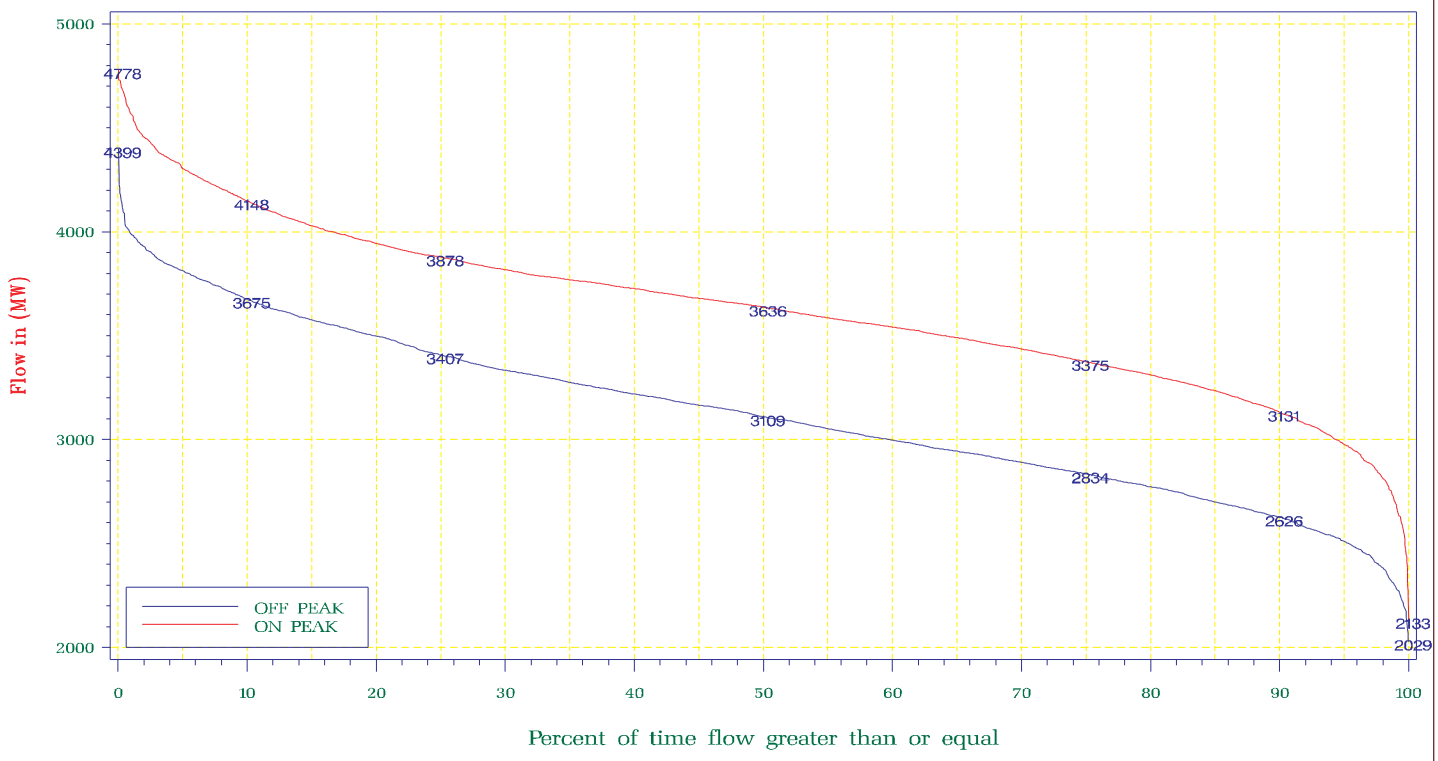
SPRAINBROOK – DUNWOODIE SOUTH (Closed)



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

SPRAINBROOK – DUNWOODIE SOUTH (Closed)



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

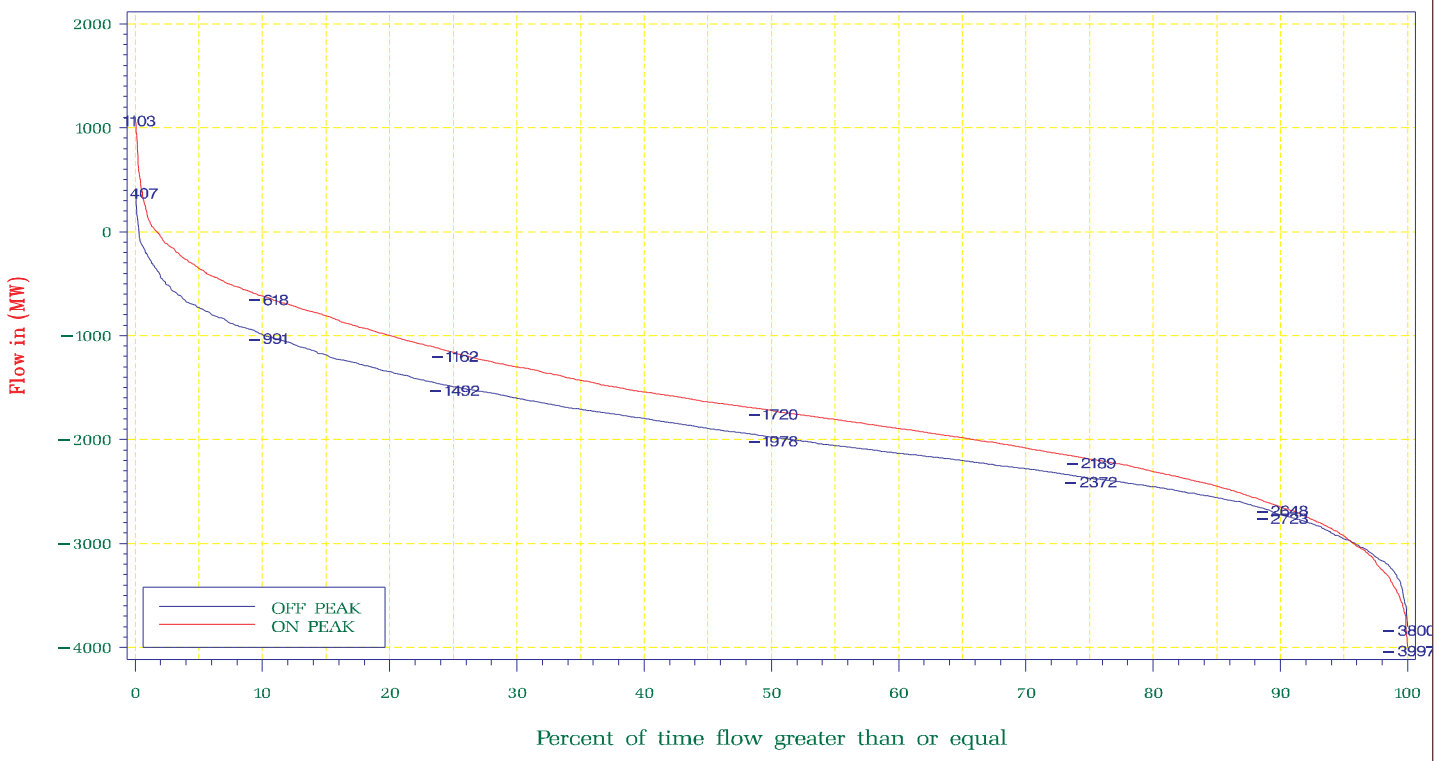
NYISO Frequency Interface Flow For January – December 2002

NY EXPORT

OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

NY EXPORT

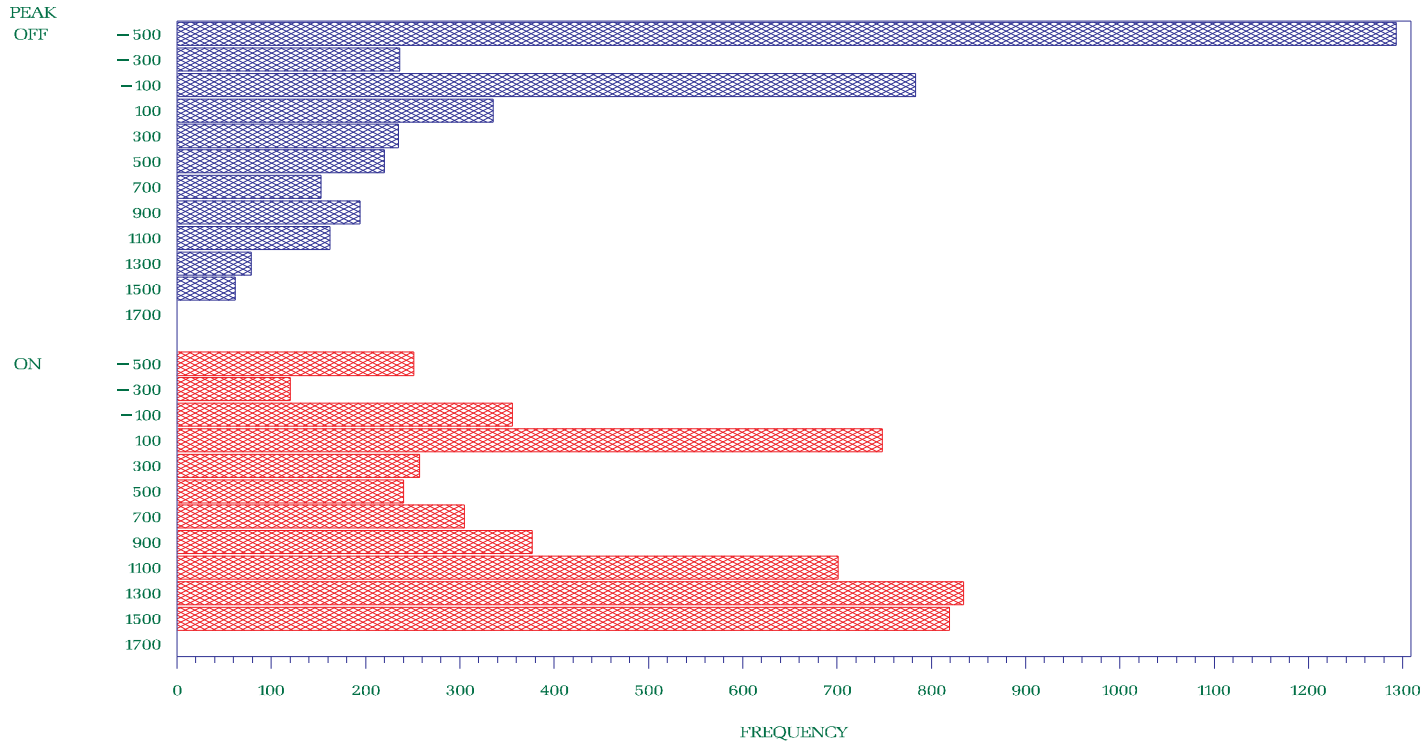


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

TE – NY SCHEDULE

Chateauguay – Massena

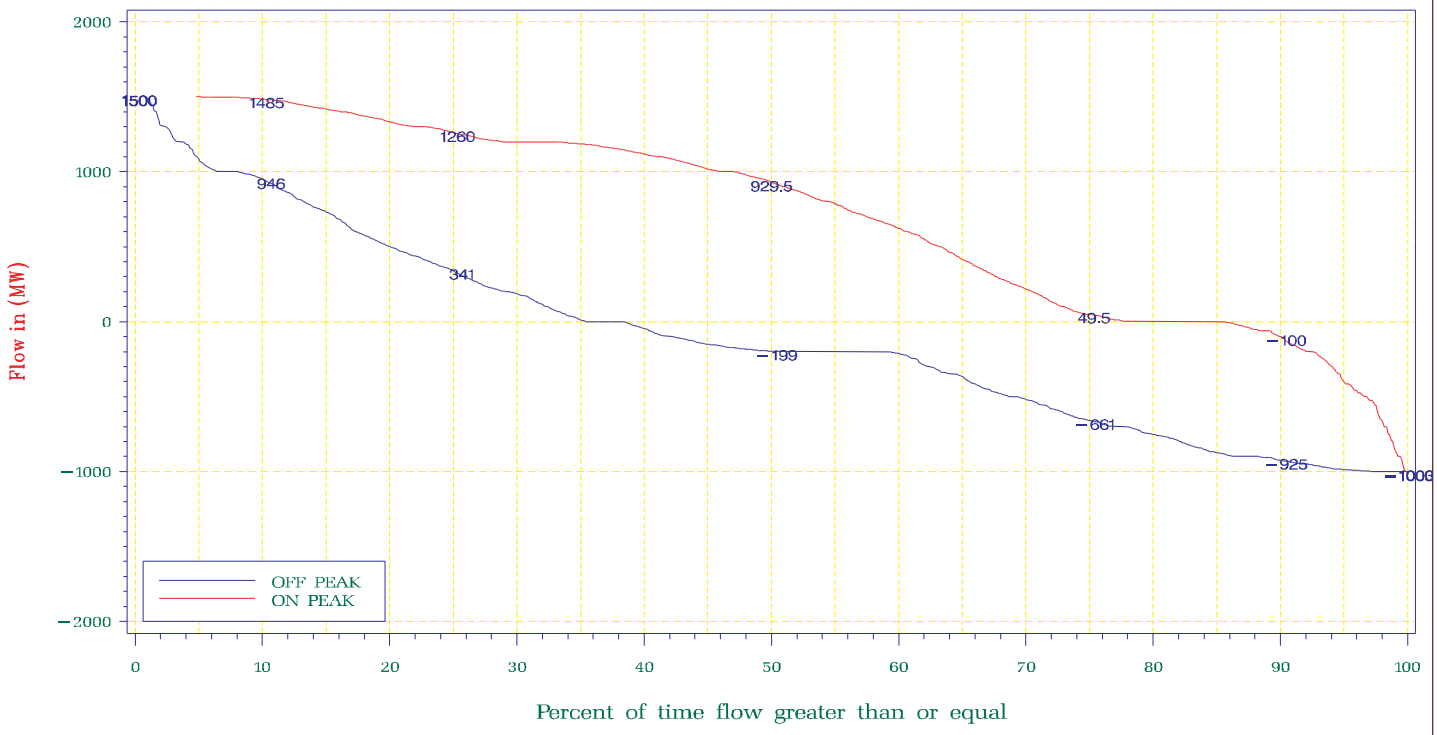


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

TE – NY SCHEDULE

Chateauguay – Massena

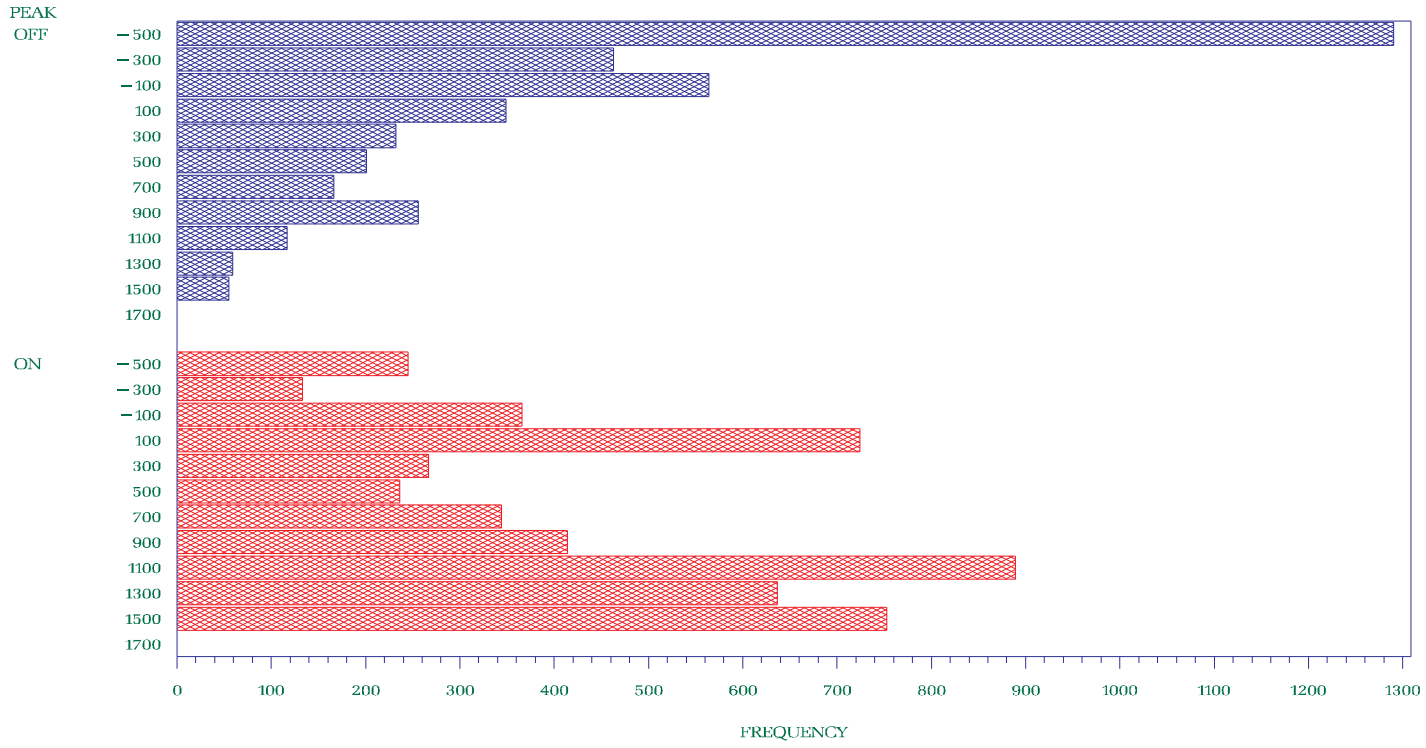


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

TE – NY

Chateauguay – Massena

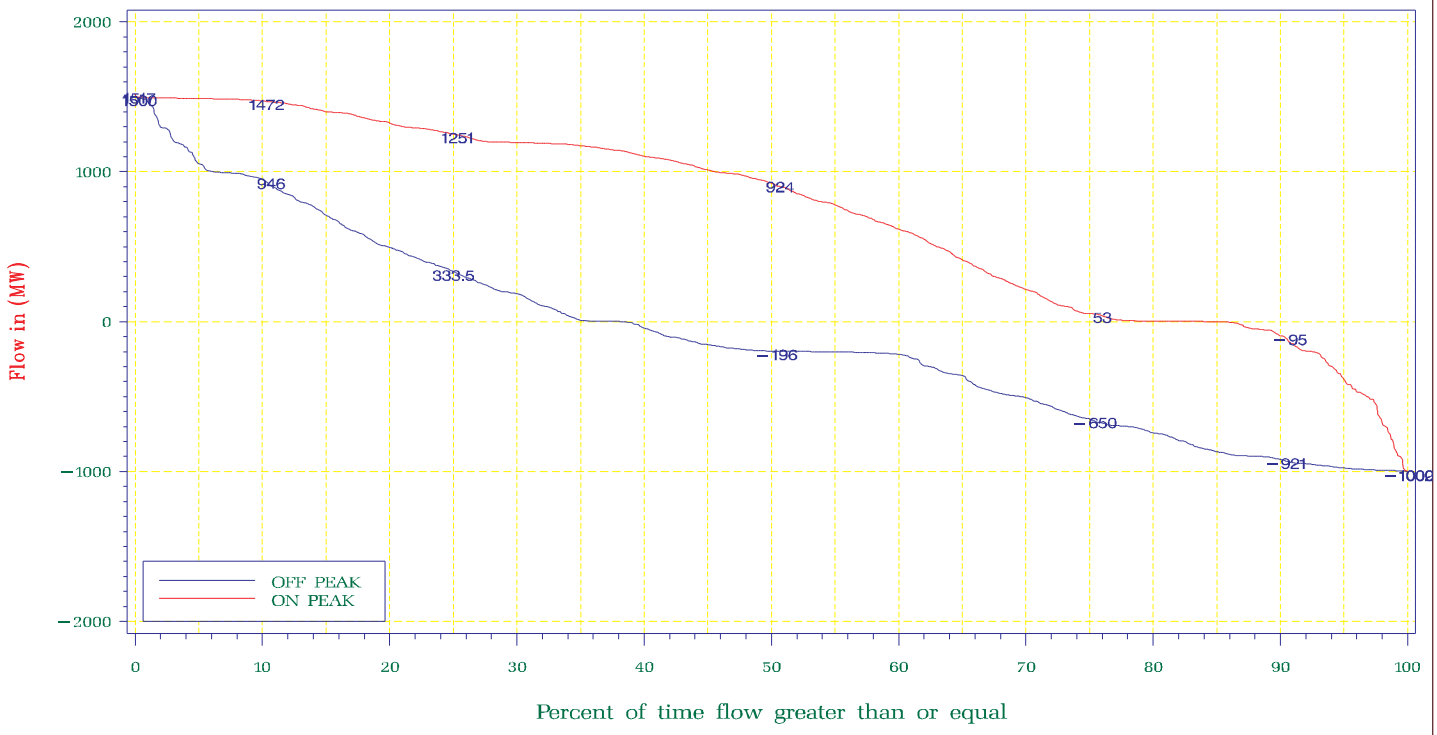


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

TE – NY

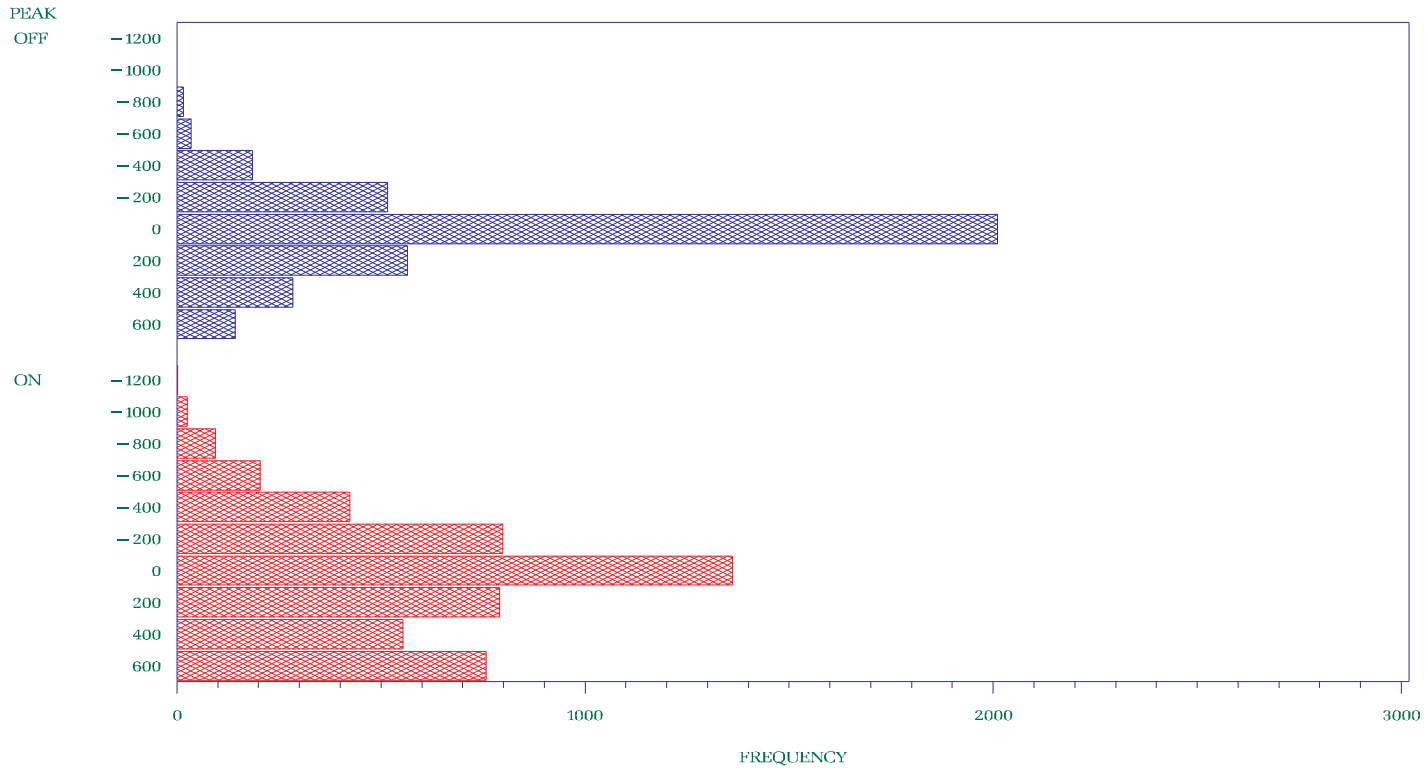
Chateauguay – Massena



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

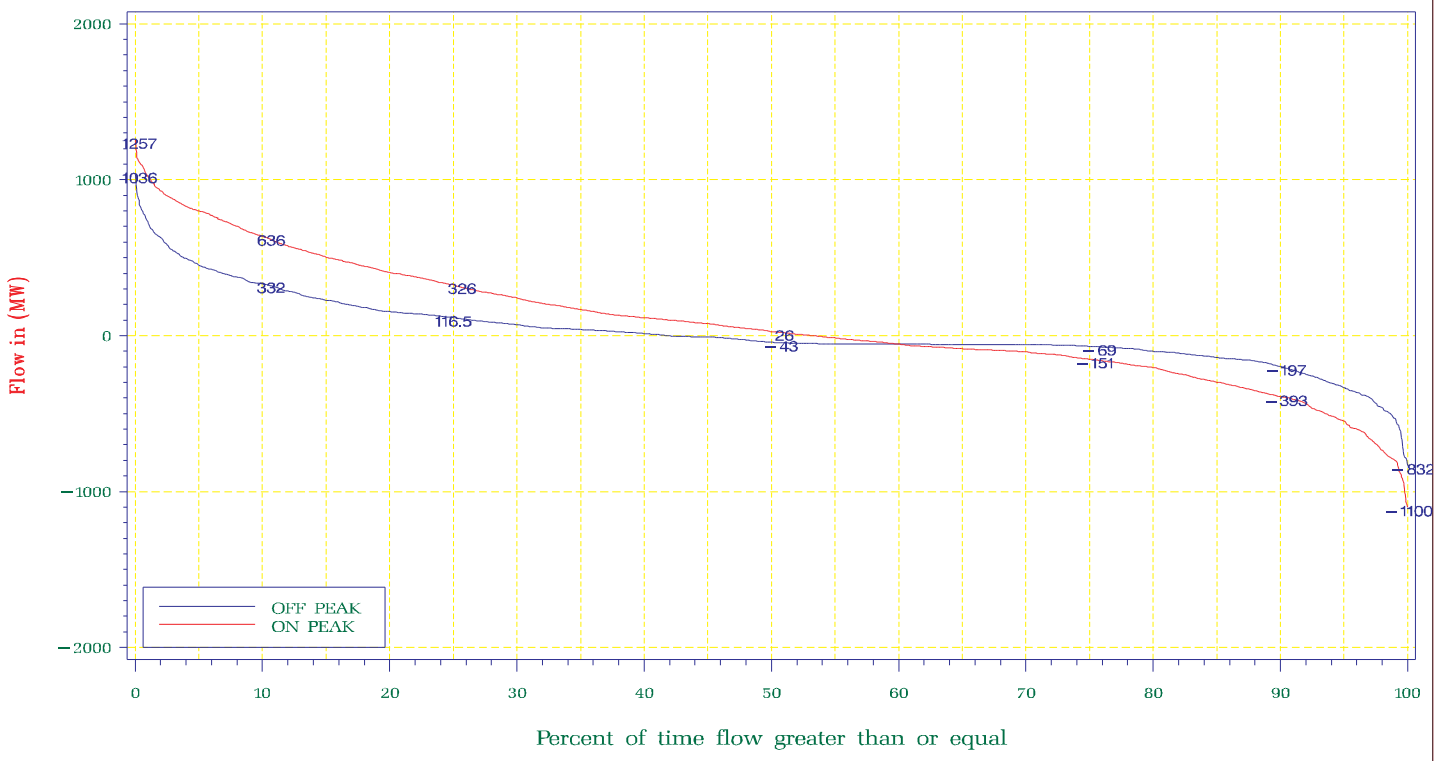
New England – NY SCHEDULE



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

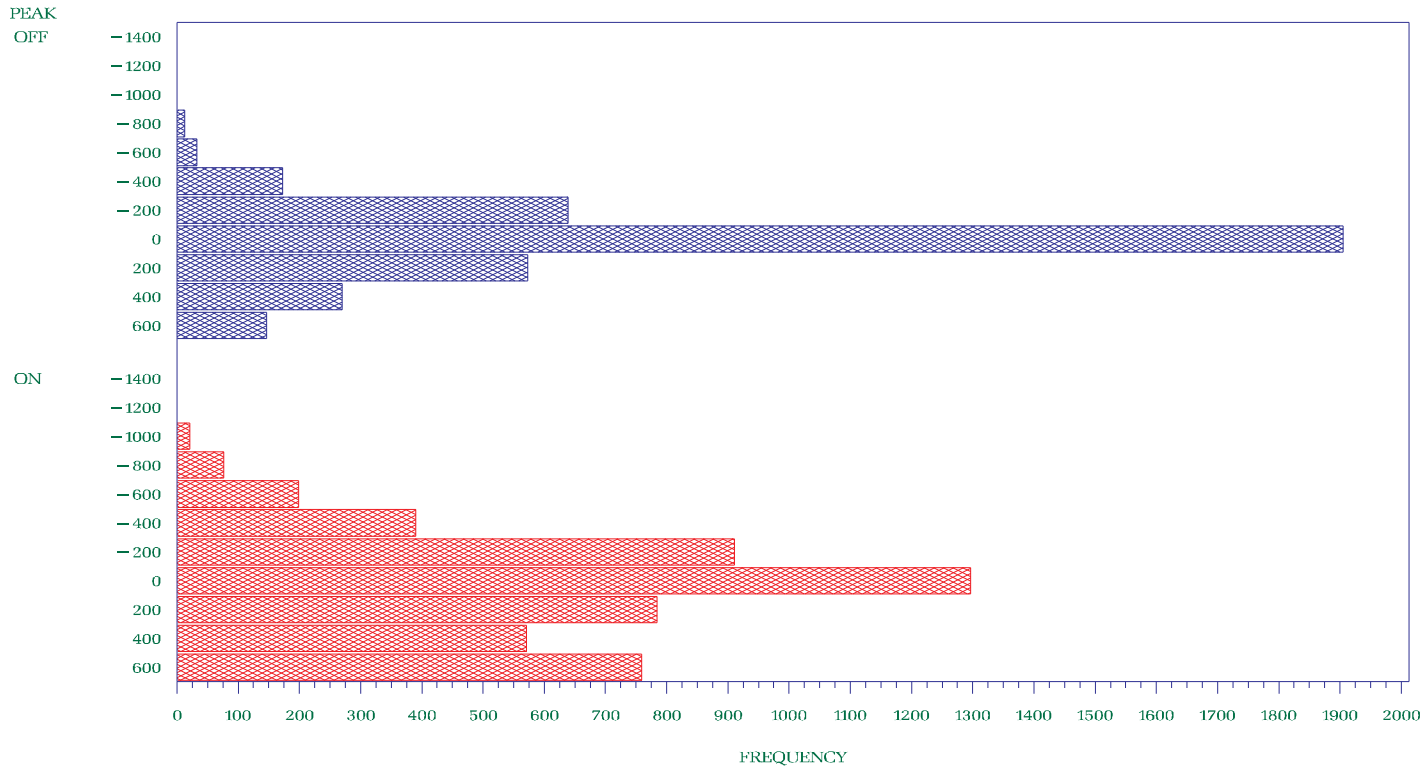
New England – NY SCHEDULE



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

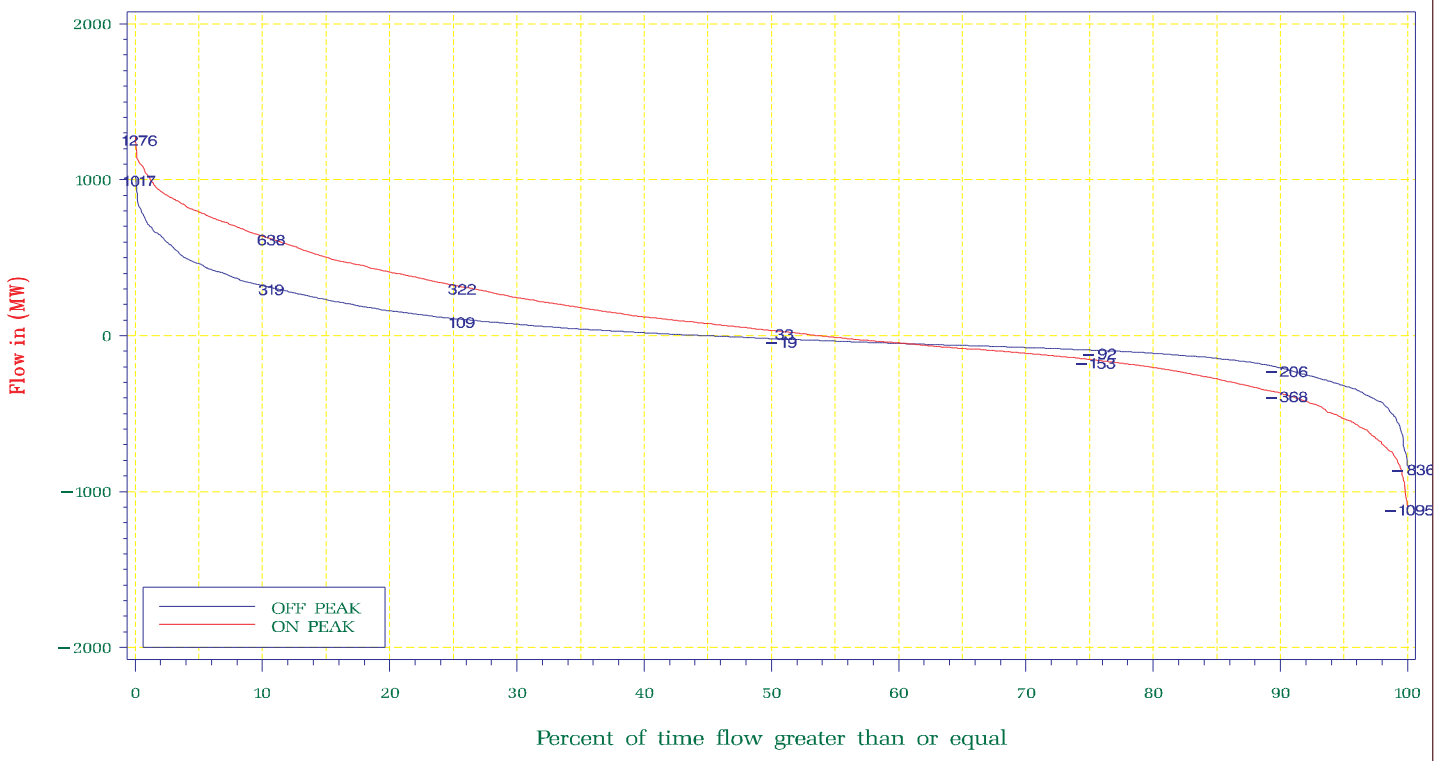
New England – NY



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

New England – NY



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

New England/NU South – Capital/Mid Hudson

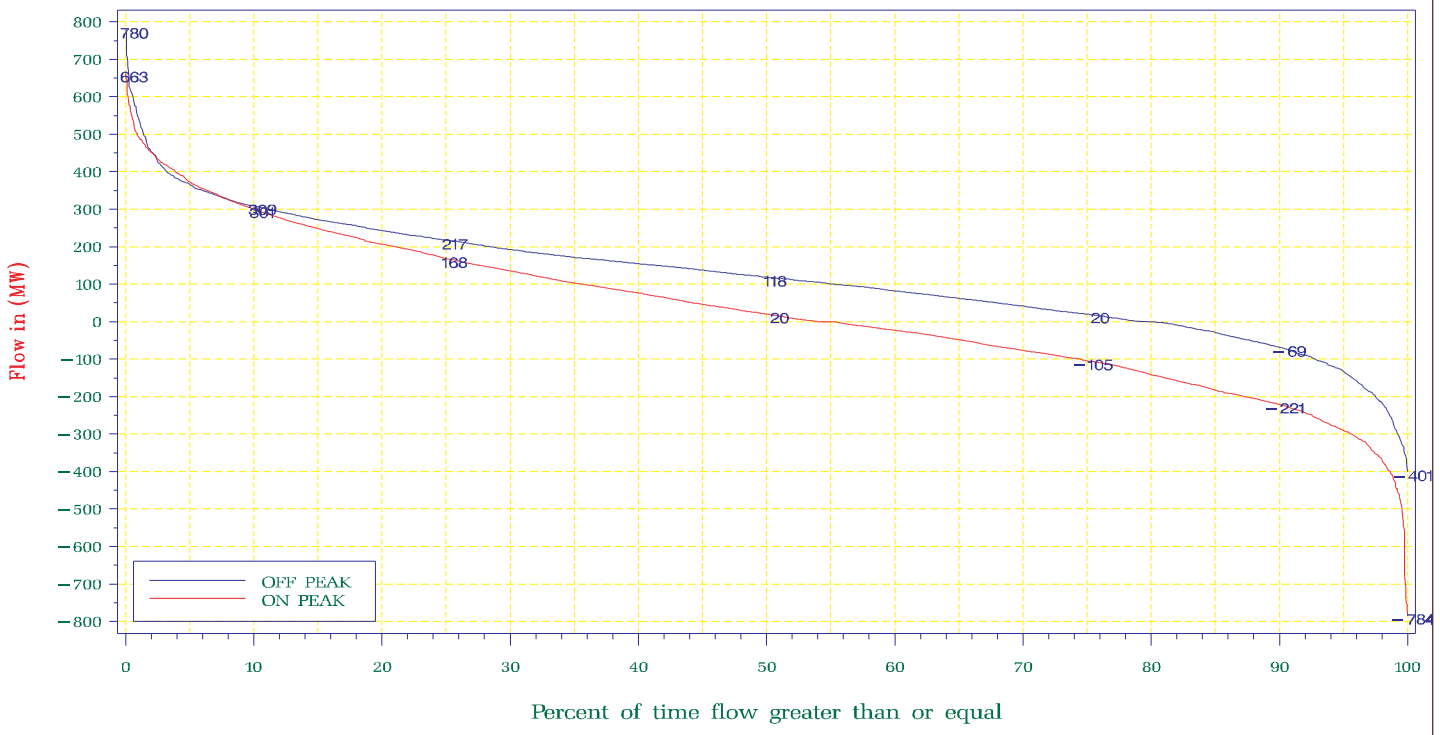
398 Long Mt. – Pleasant Valley

OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

New England/NU South – Capital/Mid Hudson

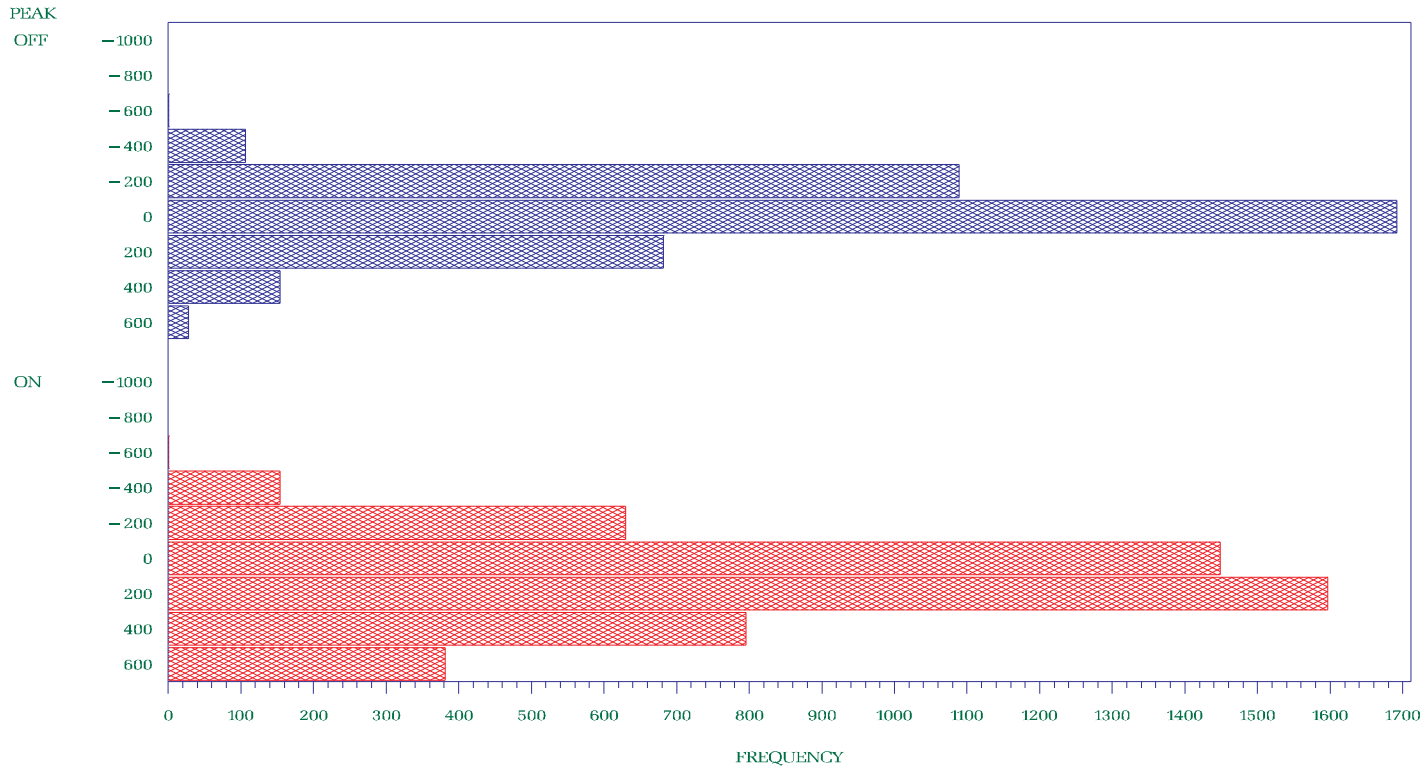
398 Long Mt. – Pleasant Valley



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

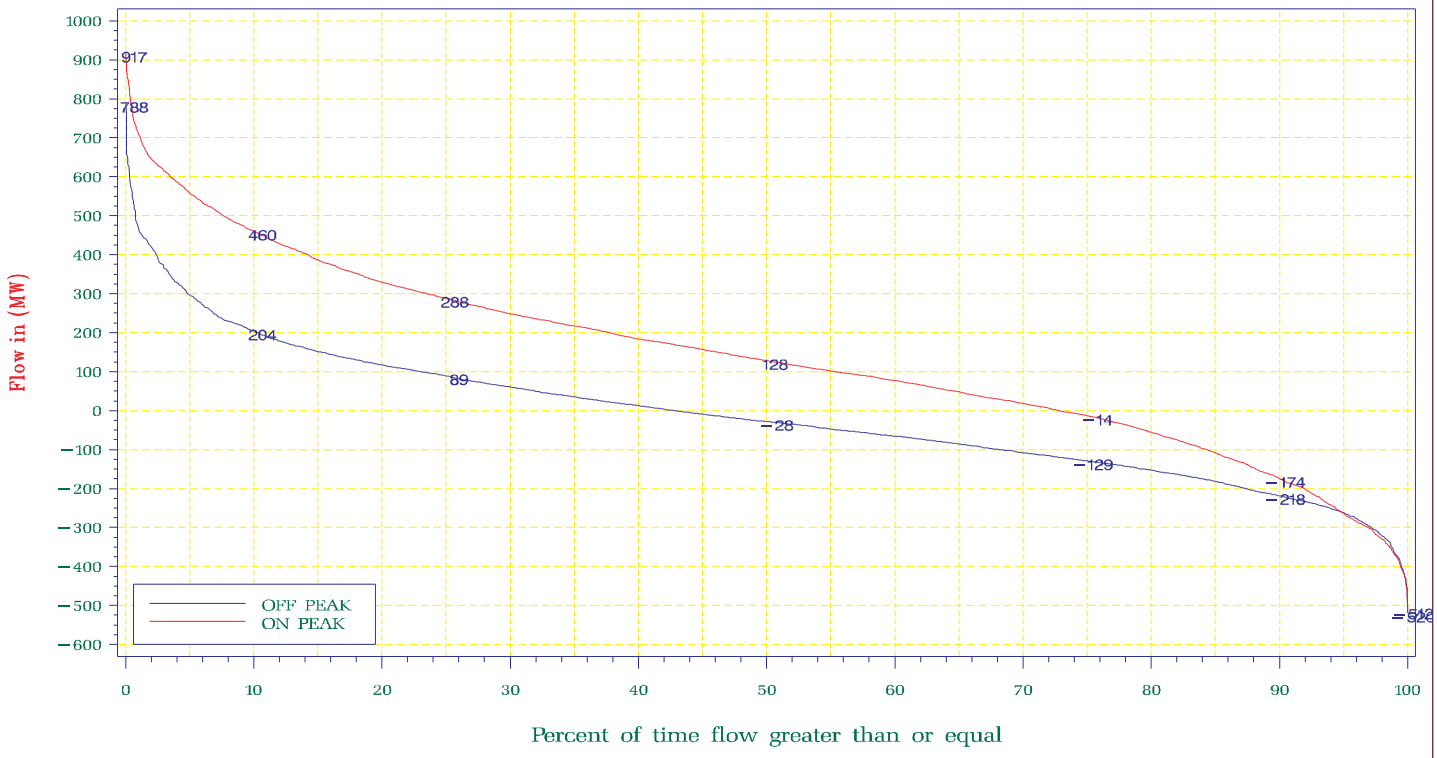
New England/Vt/NE/NU South – Capital/Mid Hudson



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

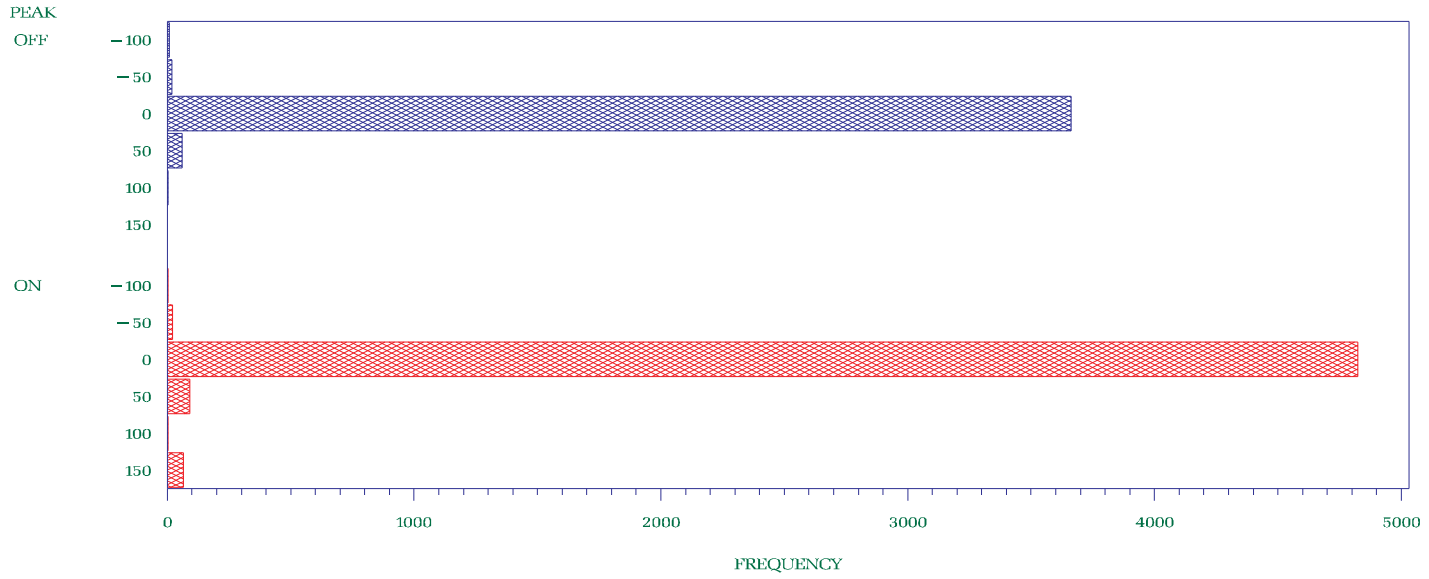
New England/Vt/NE/NU South – Capital/Mid Hudson



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

New England/NU – Long Island

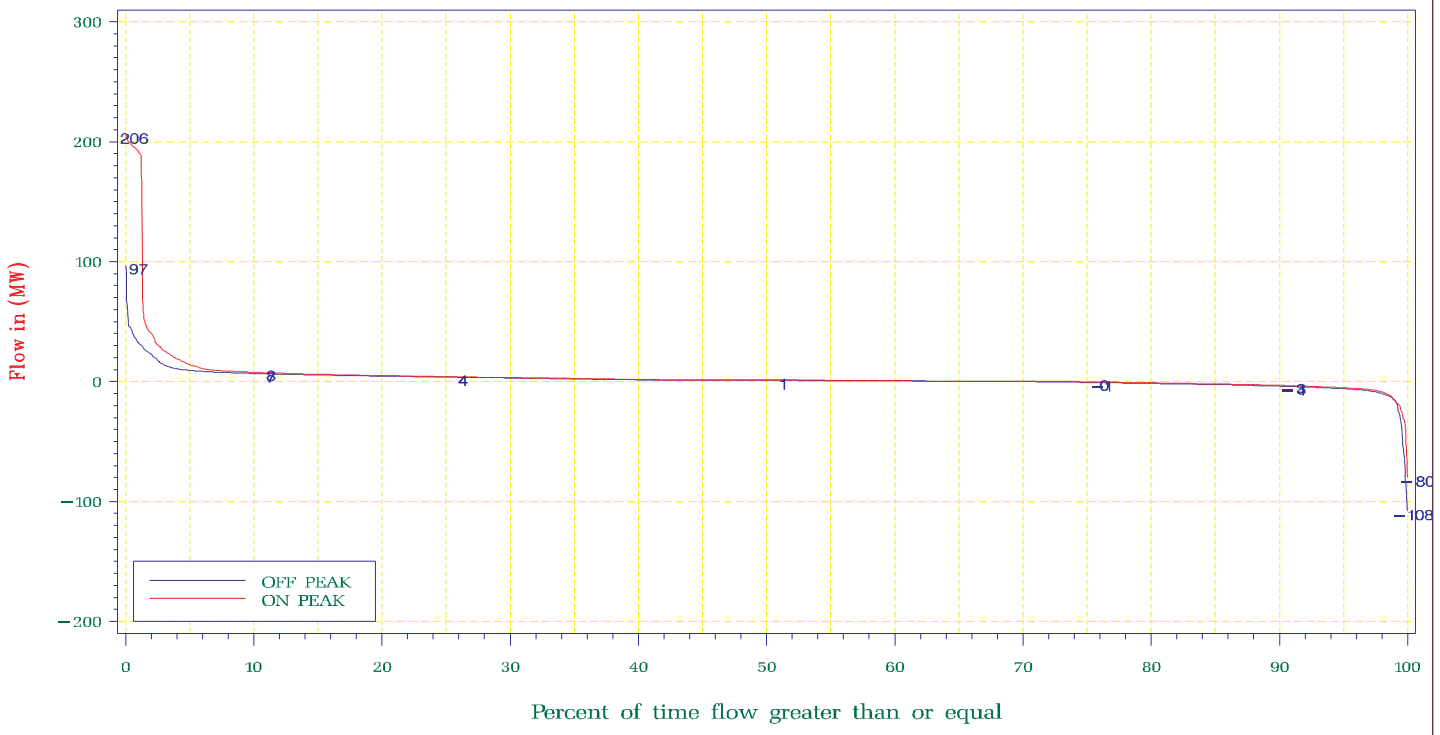


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

New England/NU – Long Island

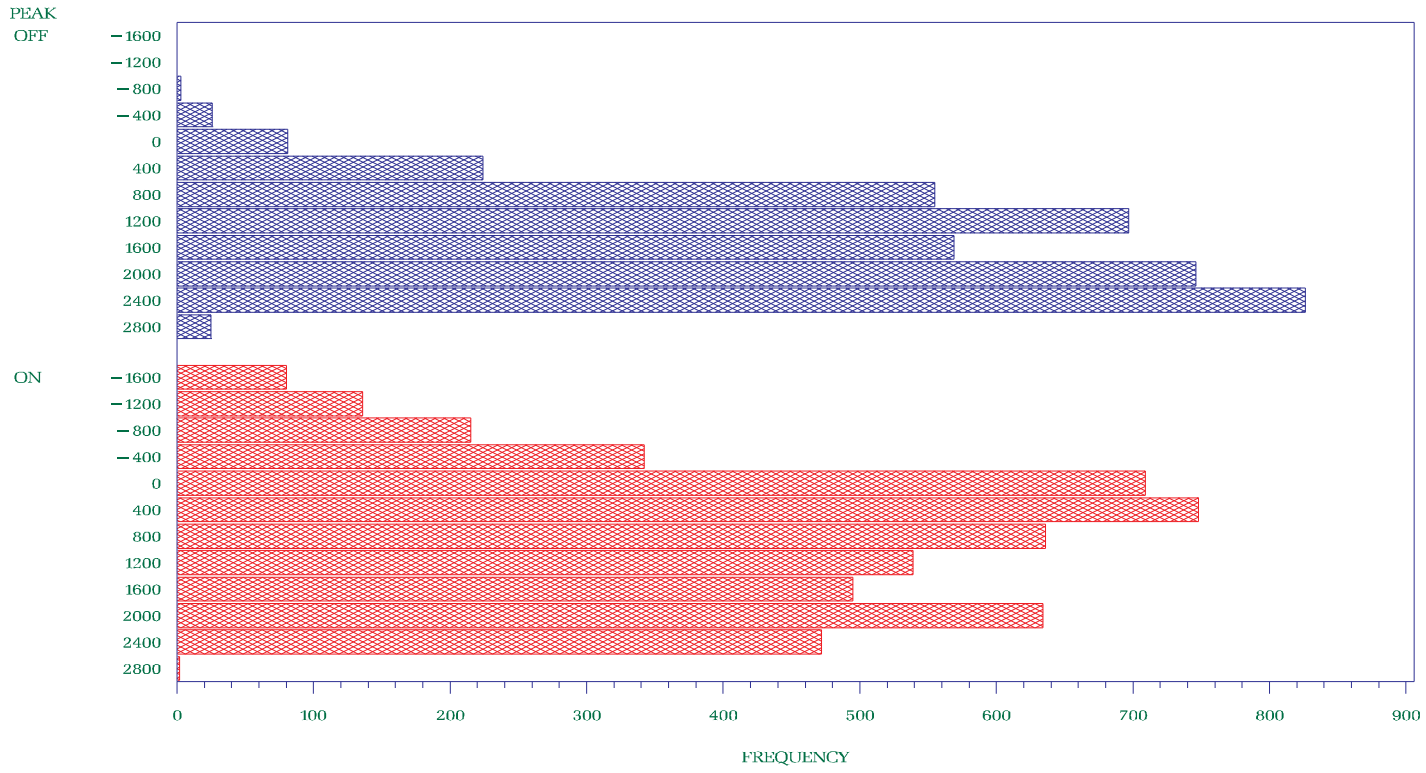
1385 Northport – Norwalk Harbor



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

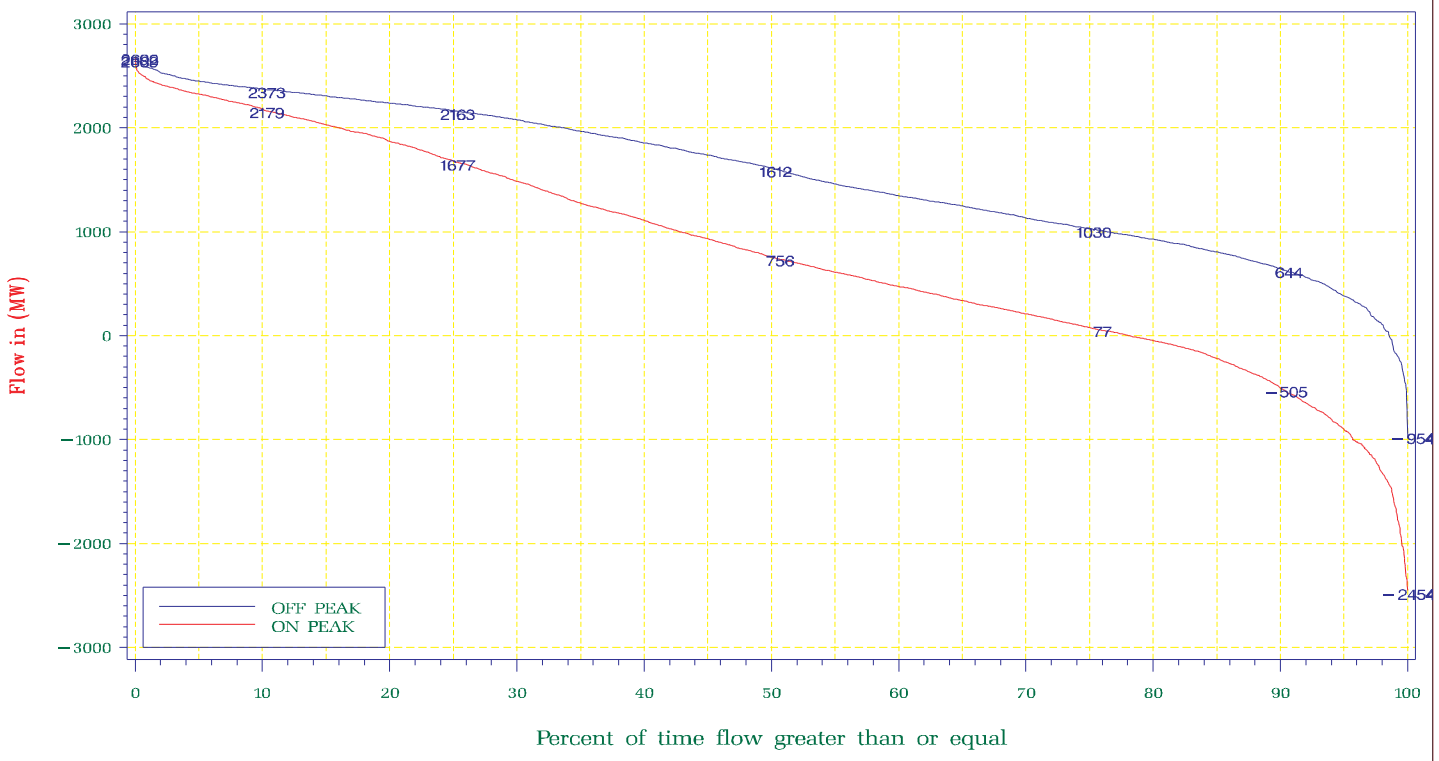
PJM – NY SCHEDULE



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

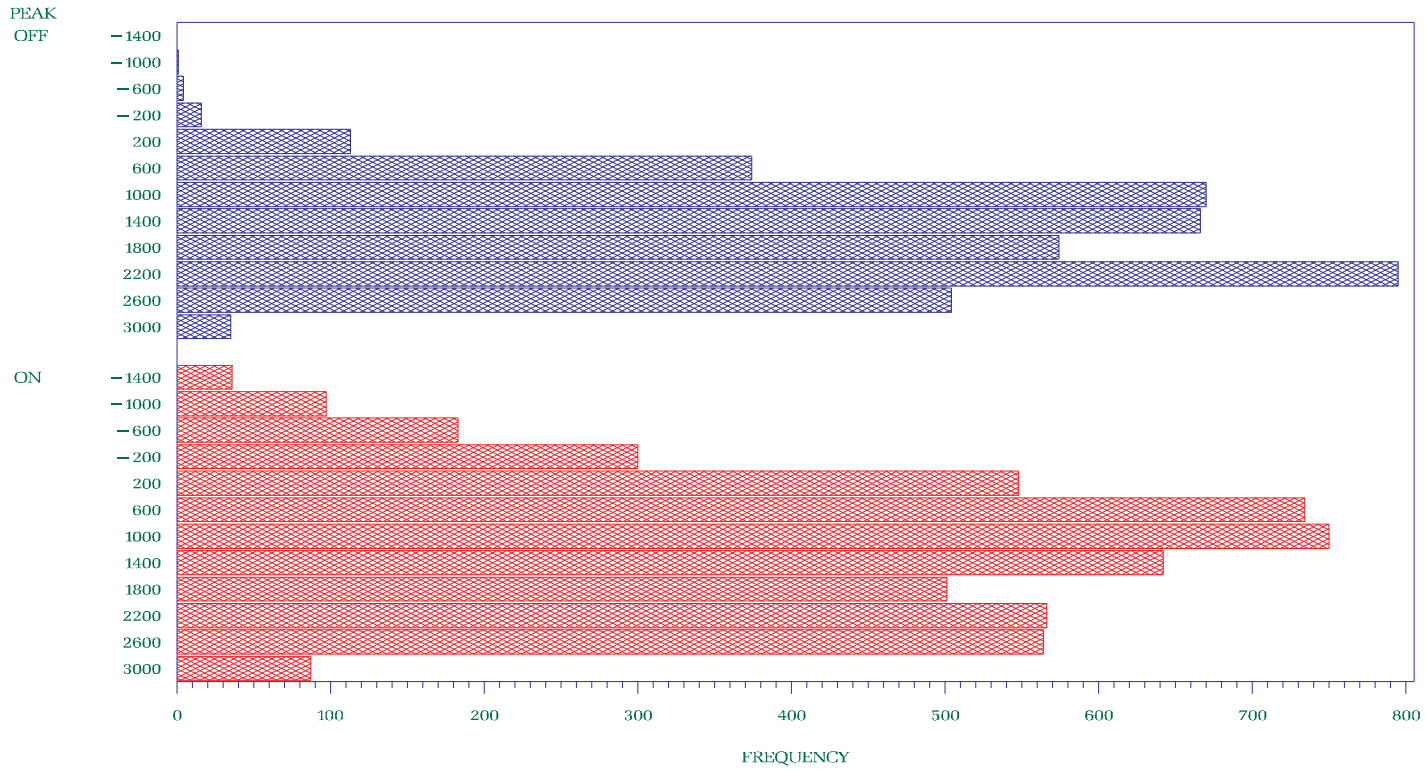
PJM – NY SCHEDULE



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

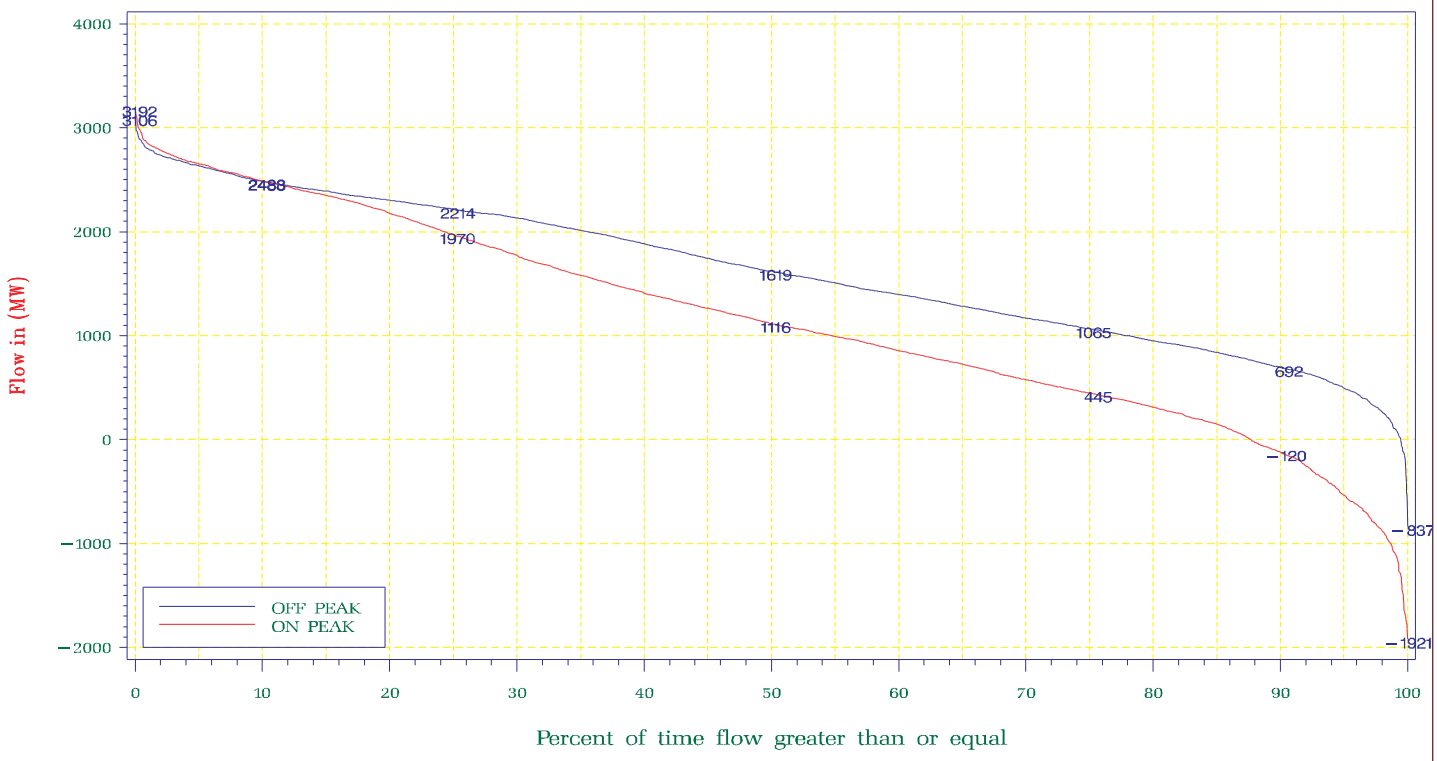
PJM – NY



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

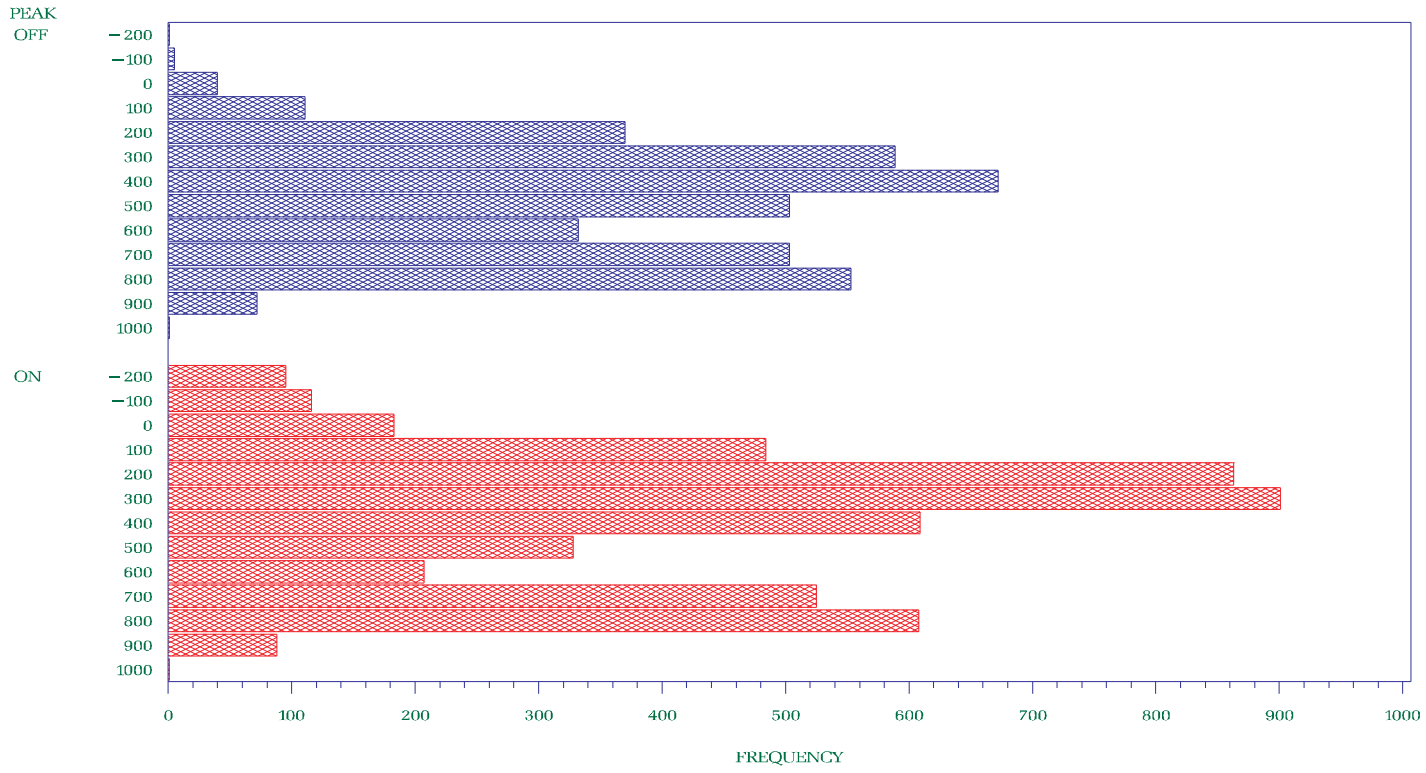
PJM – NY



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

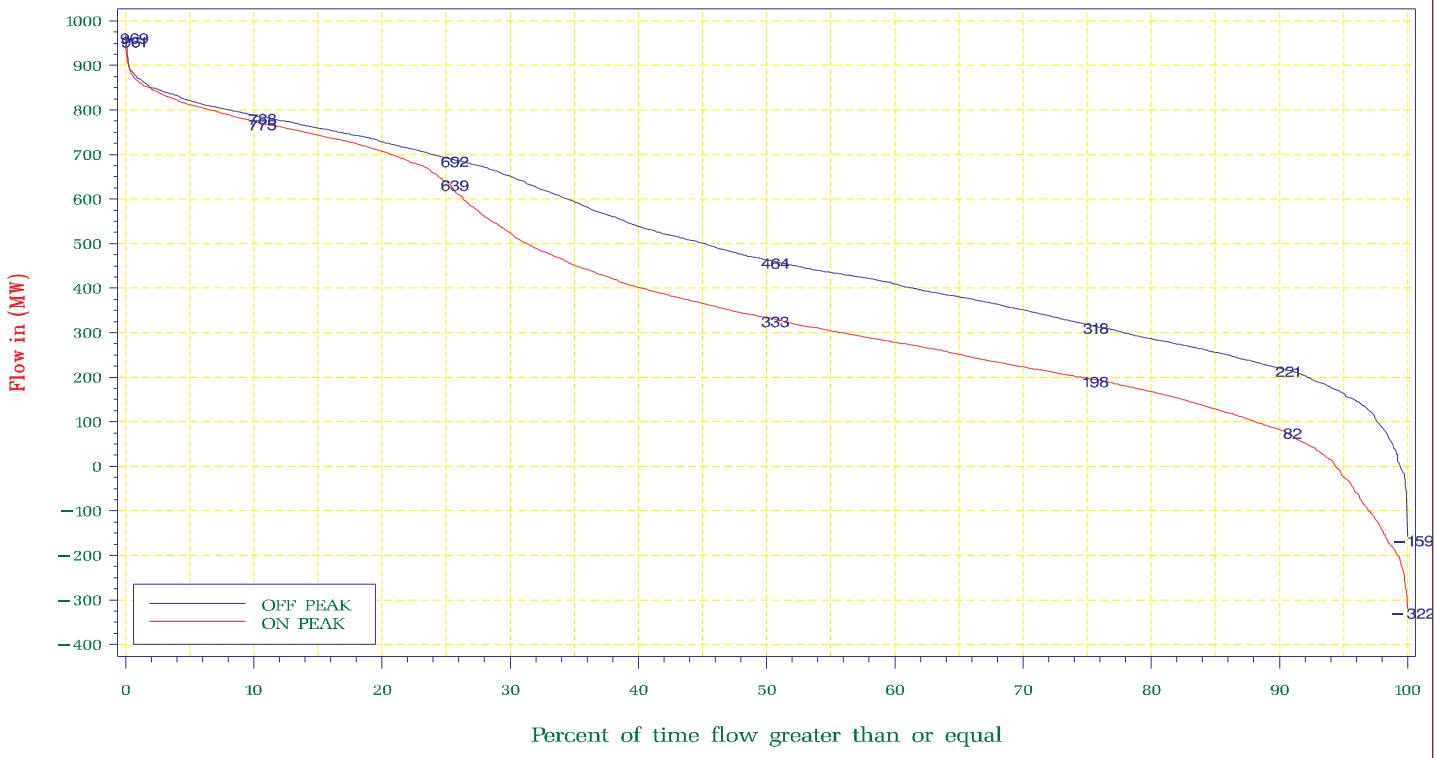
PJM West – Central



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

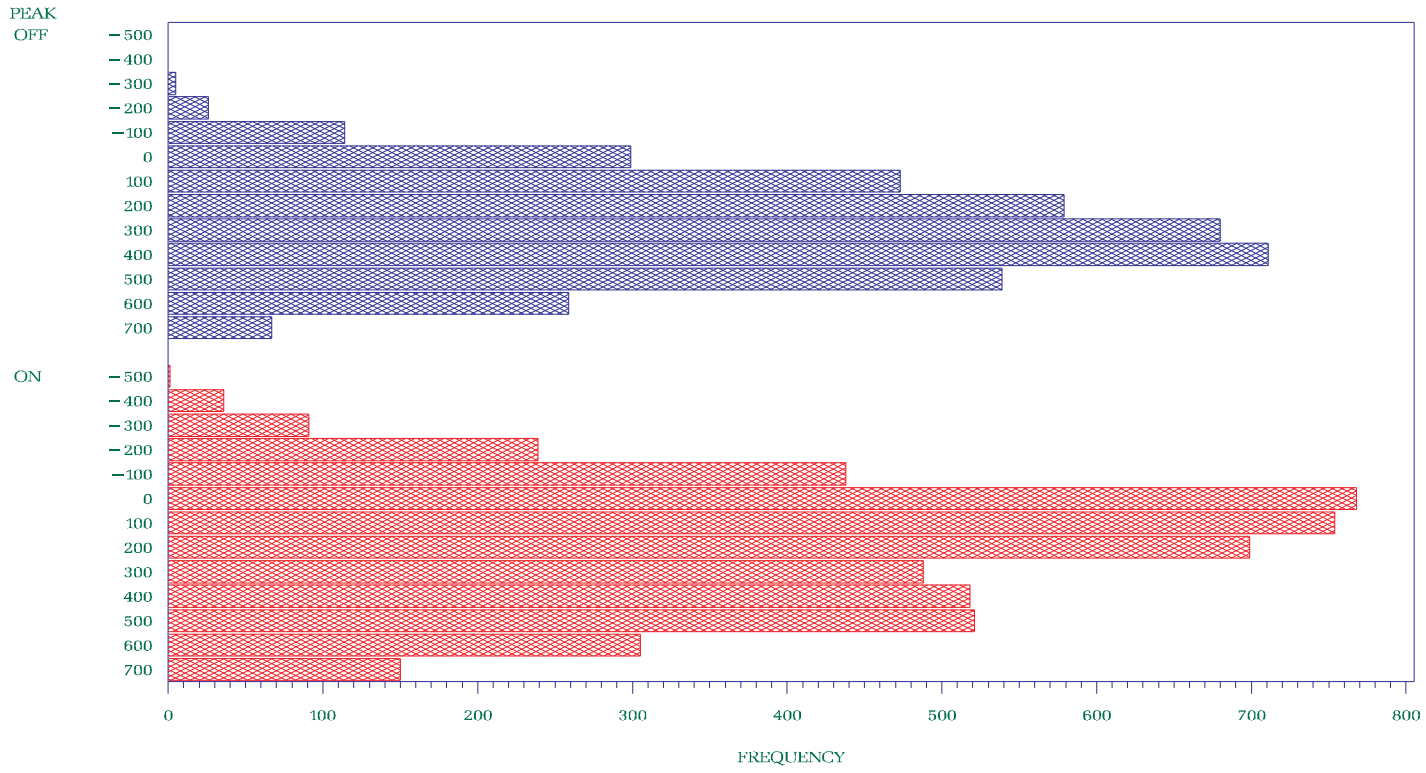
PJM West – Central



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

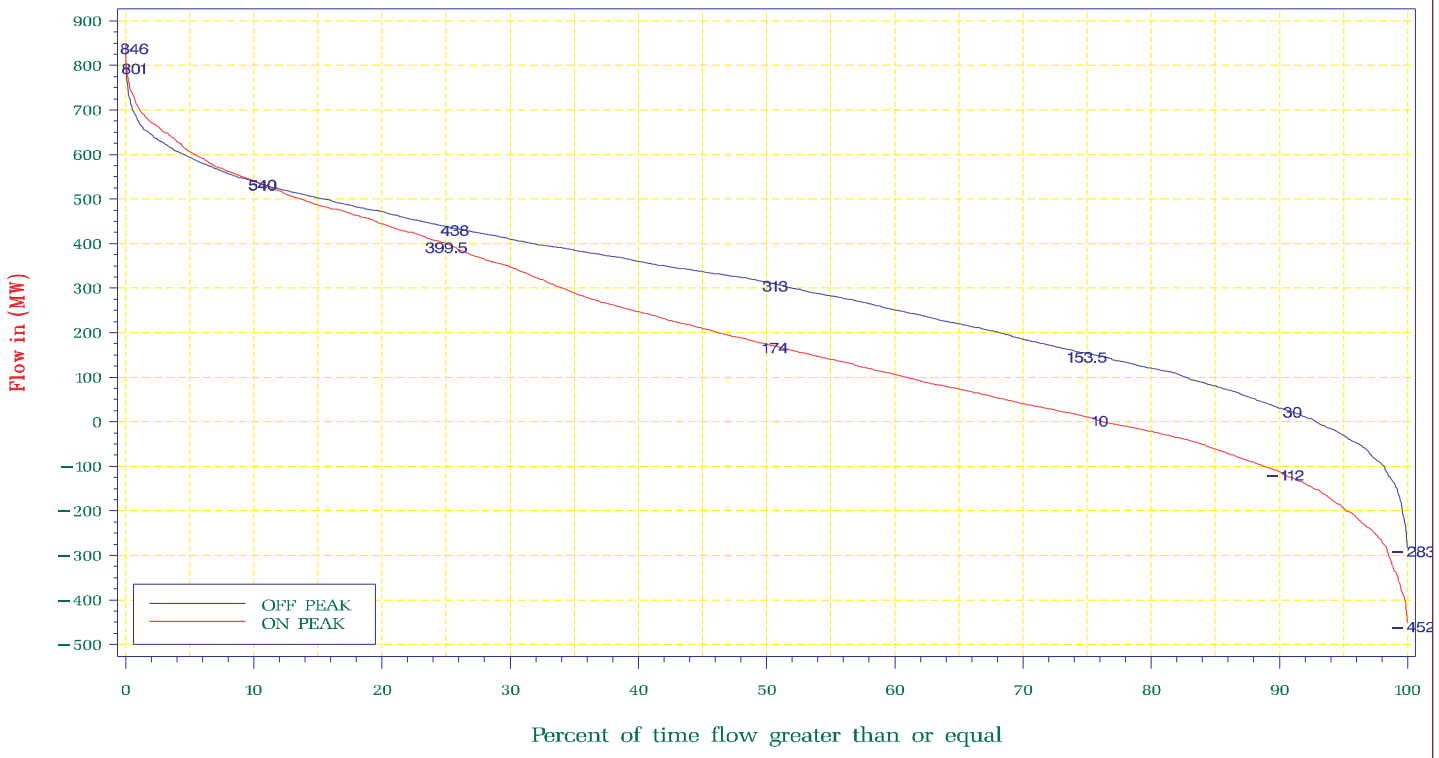
PJM West – Central



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

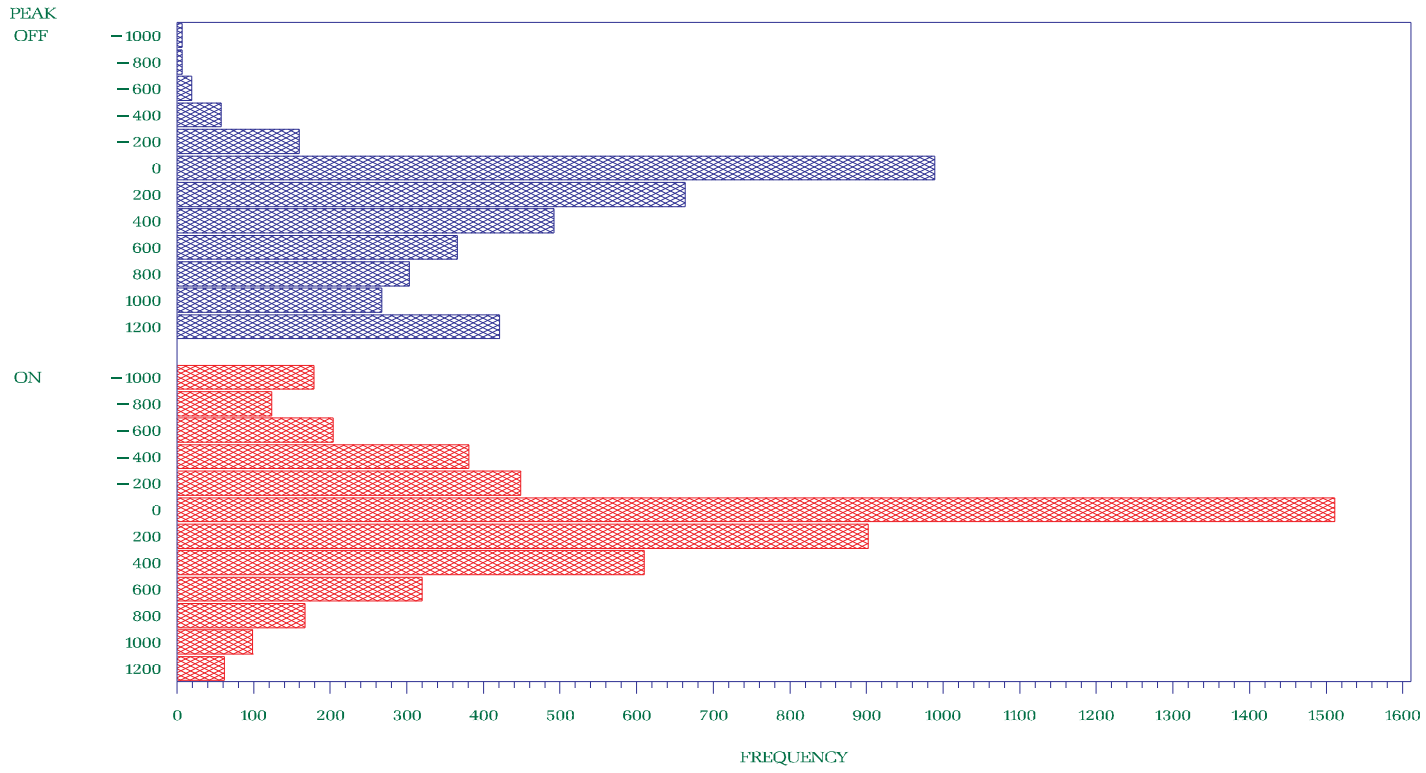
PJM West – Frontier



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

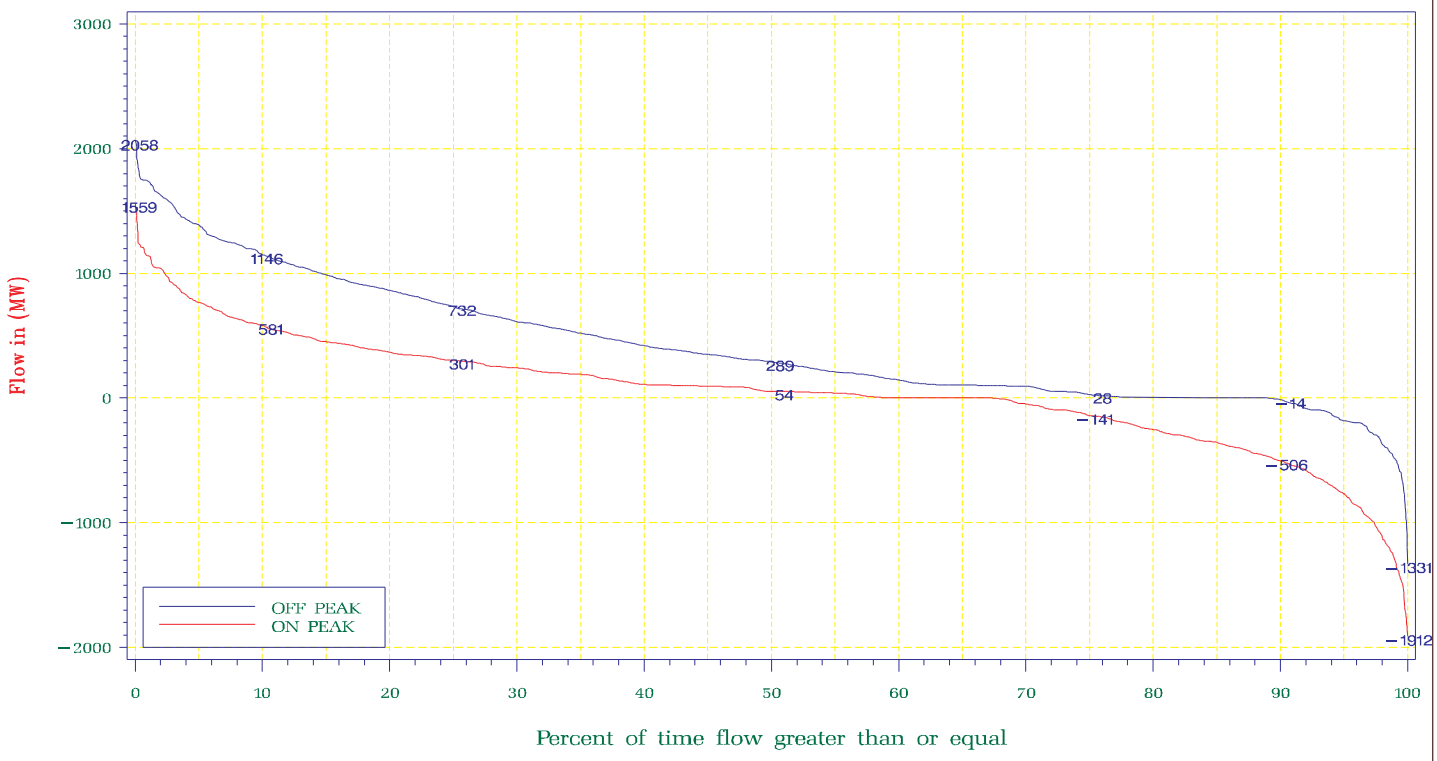
ONTARIO – NY SCHEDULE



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

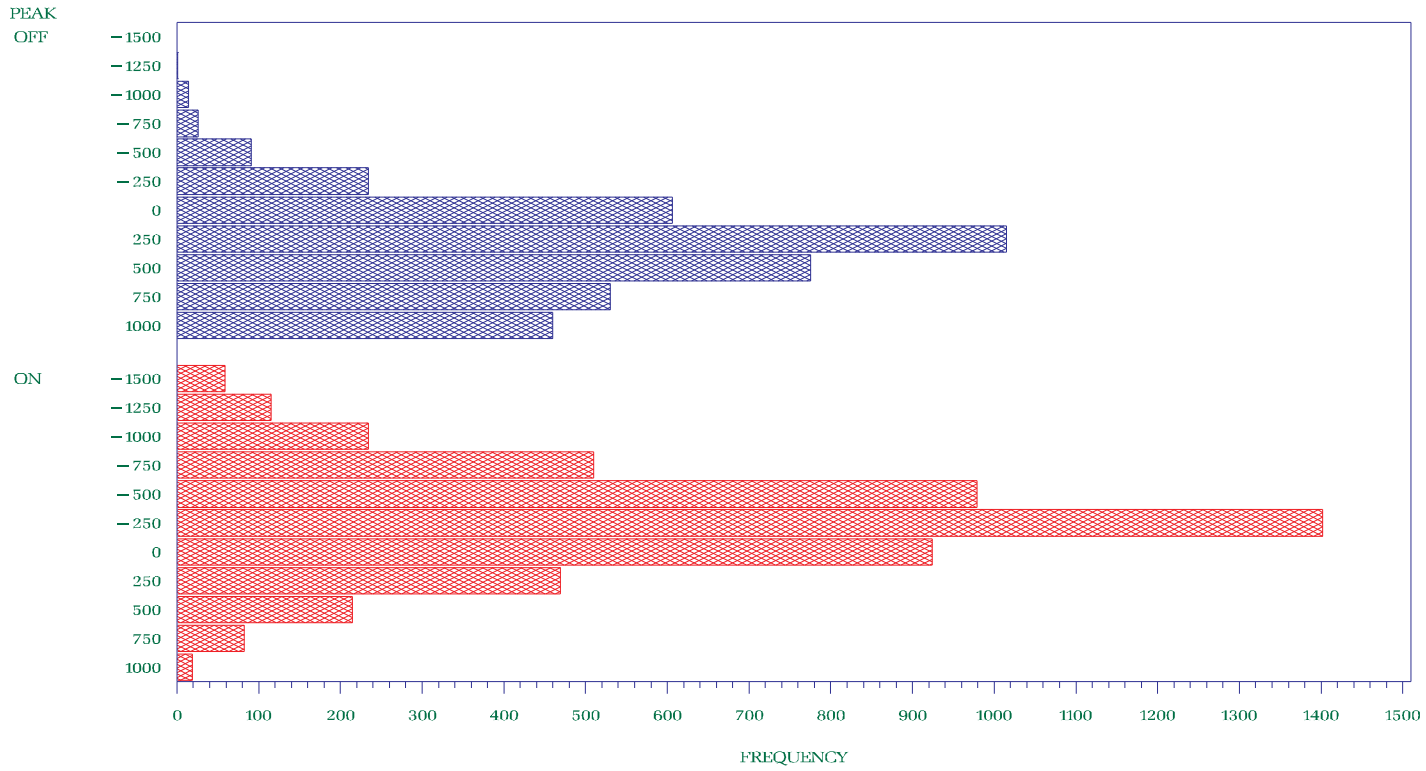
ONTARIO – NY SCHEDULE



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

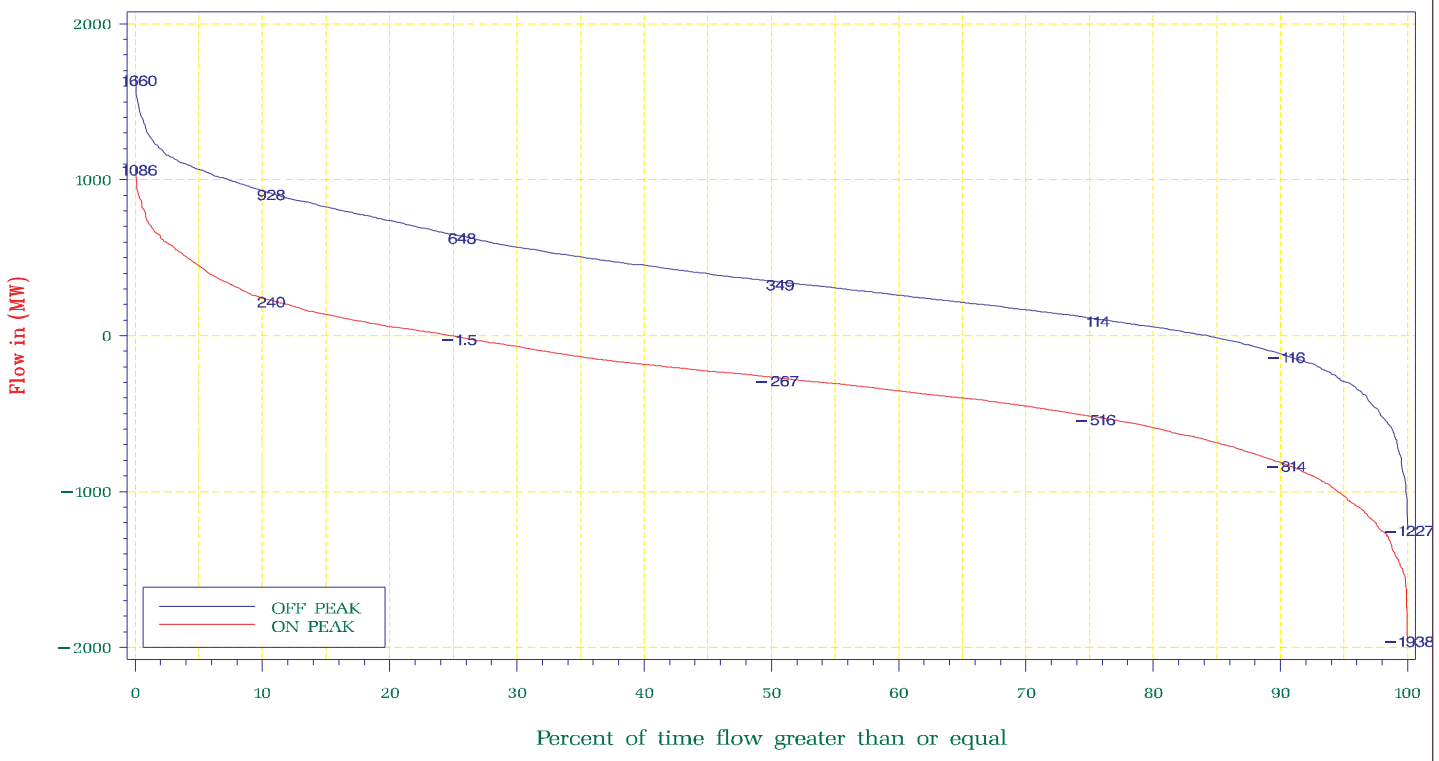
ONTARIO – NY



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

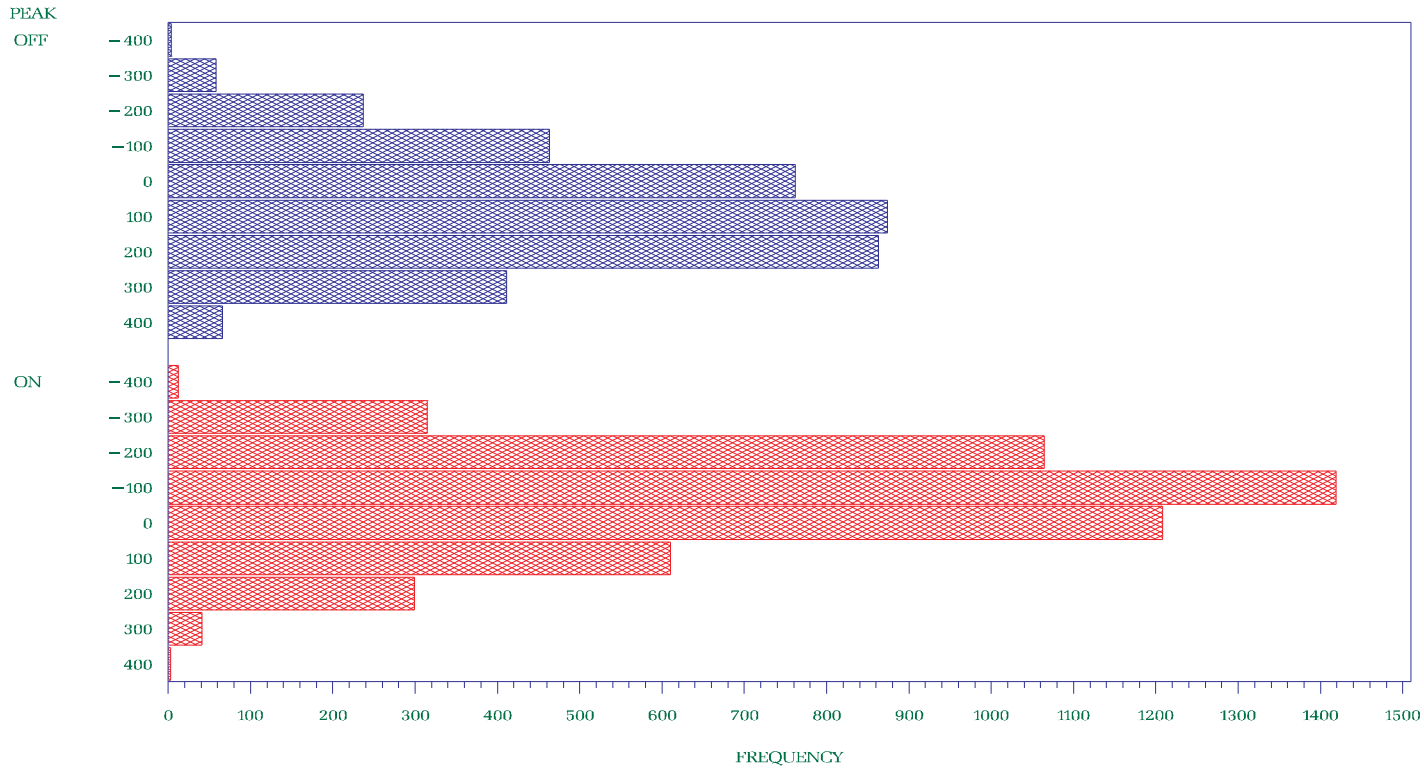
ONTARIO – NY



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

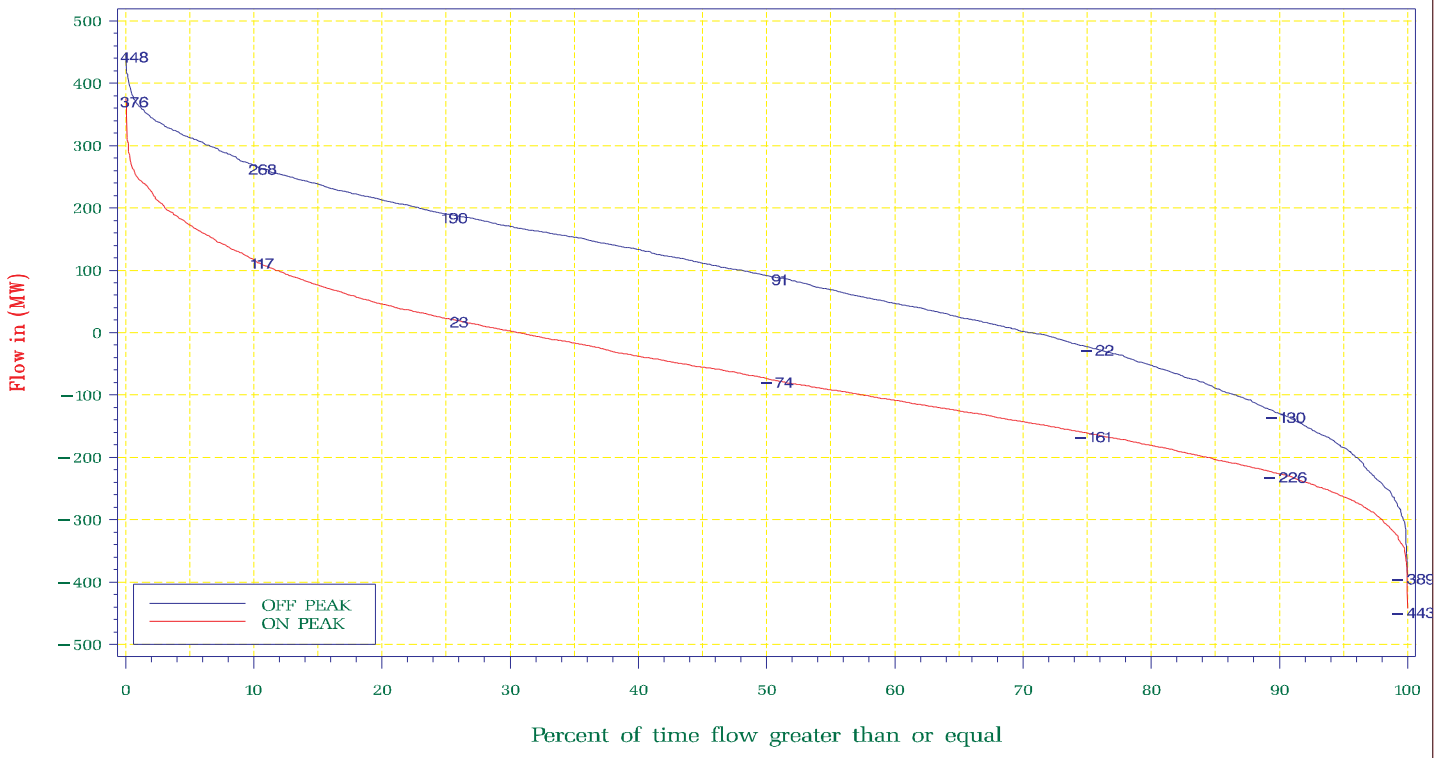
Ontario East – Adirondack



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

Ontario East – Adirondack



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

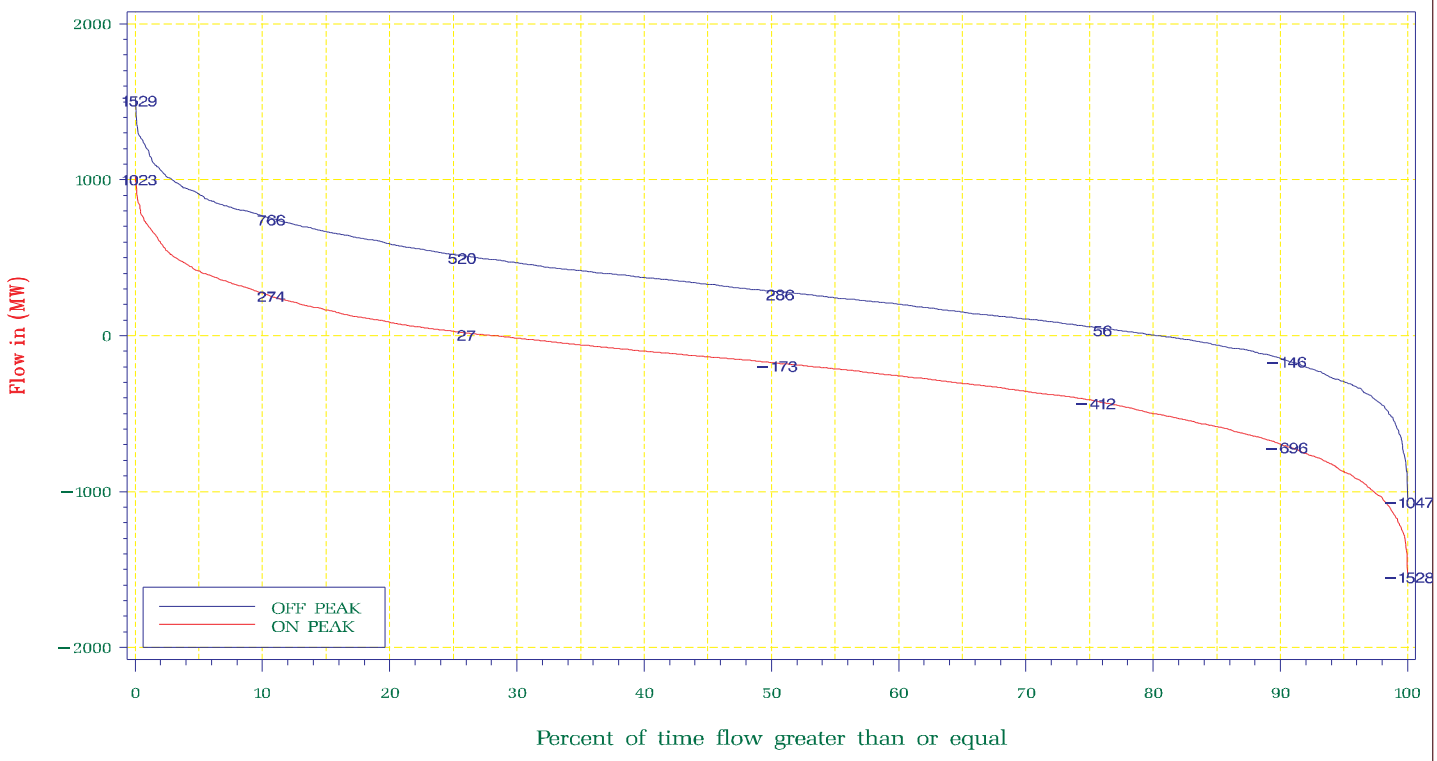
NYISO Frequency Interface Flow For January – December 2002

Ontario South – Frontier

OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

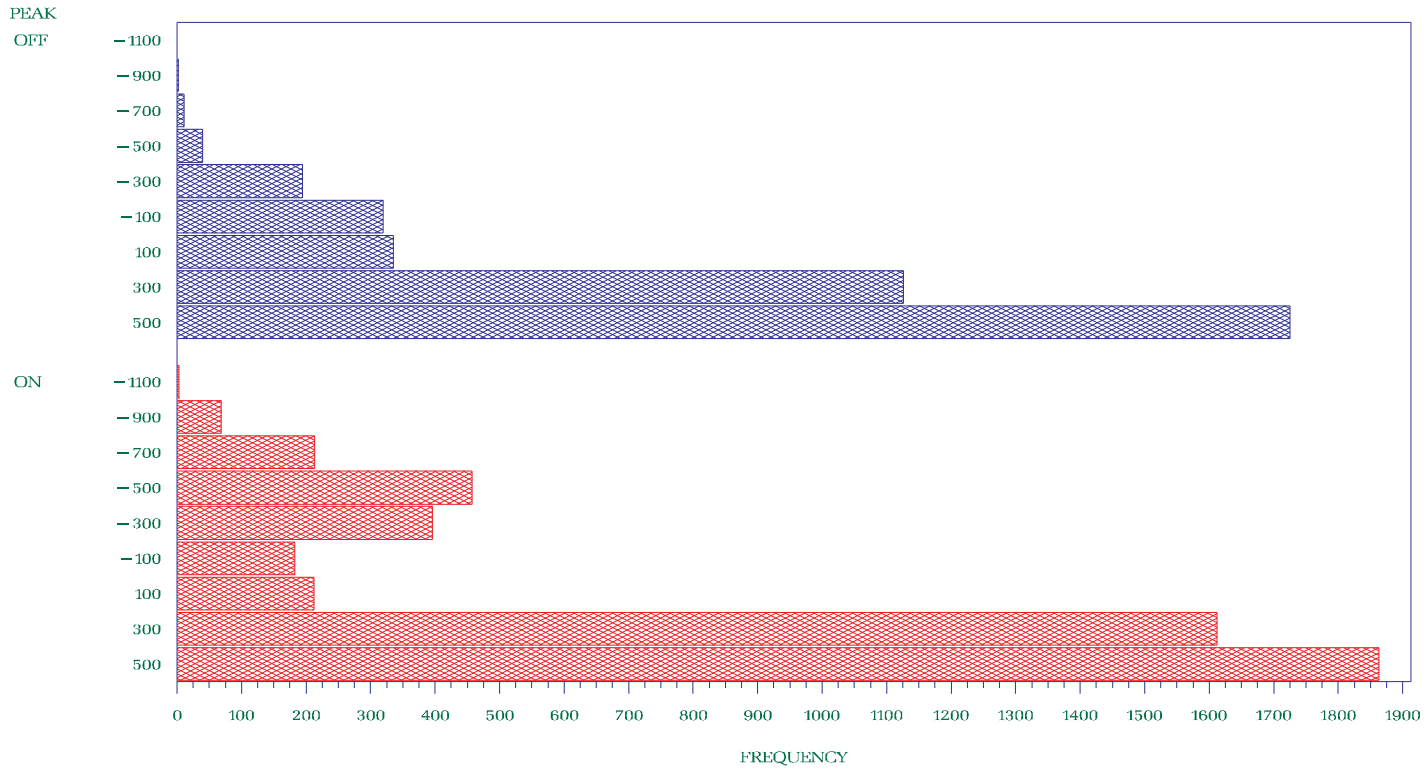
Ontario South – Frontier



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

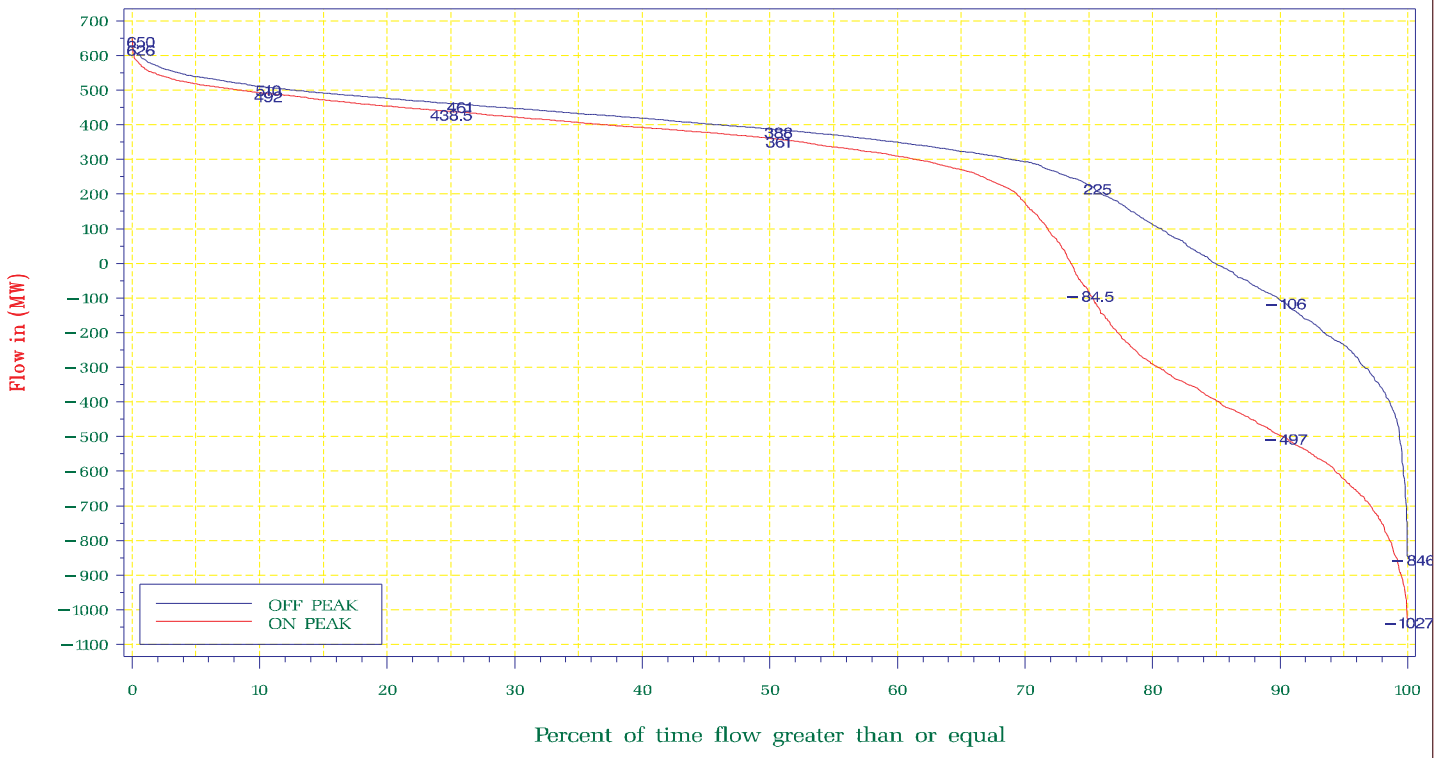
NY – ONTARIO COUNTER CLOCKWISE CIRCULATION



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

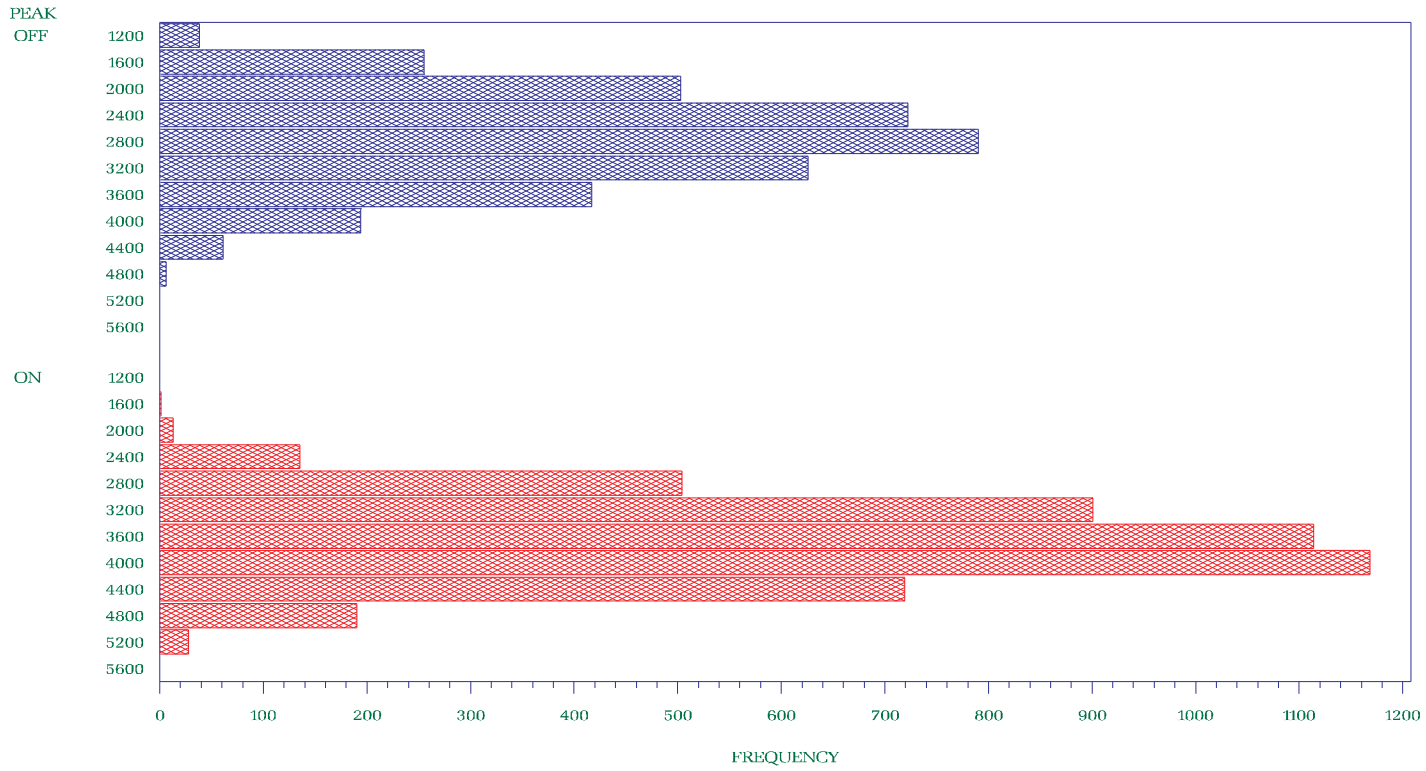
NY – ONTARIO COUNTER CLOCKWISE CIRCULATION



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

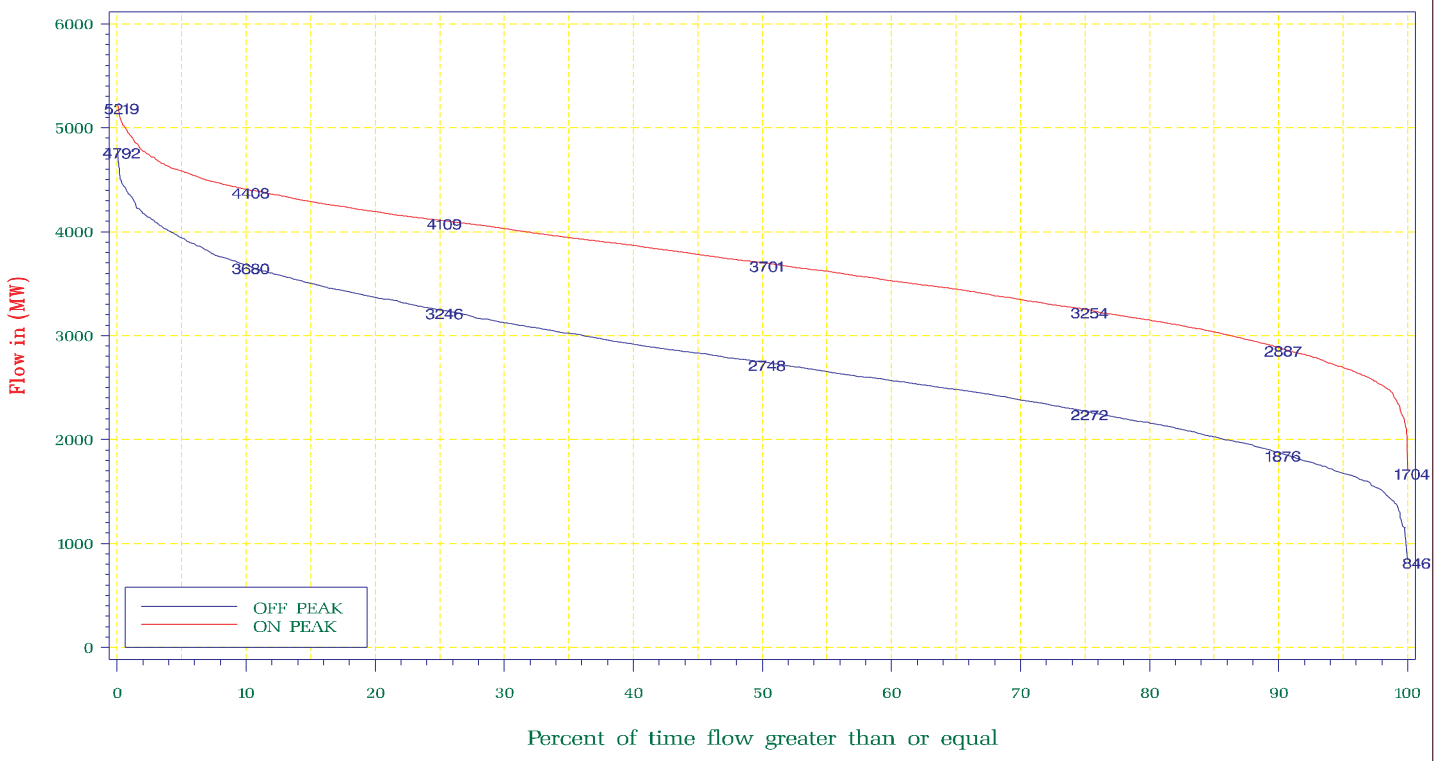
UPNY – SENY (OPEN)



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

UPNY – SENY (OPEN)



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

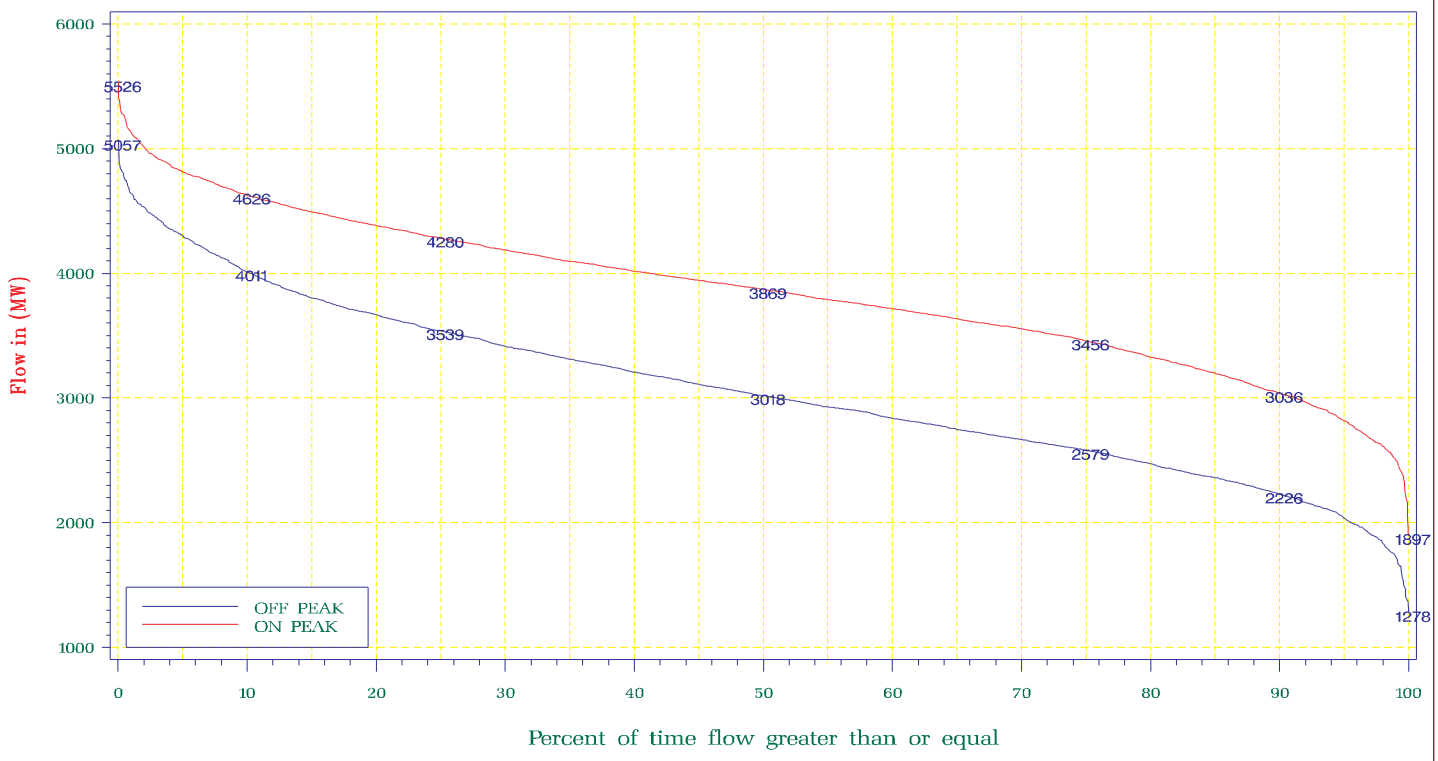
NYISO Frequency Interface Flow For January – December 2002

UPNY – SENY (CLOSED)

OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

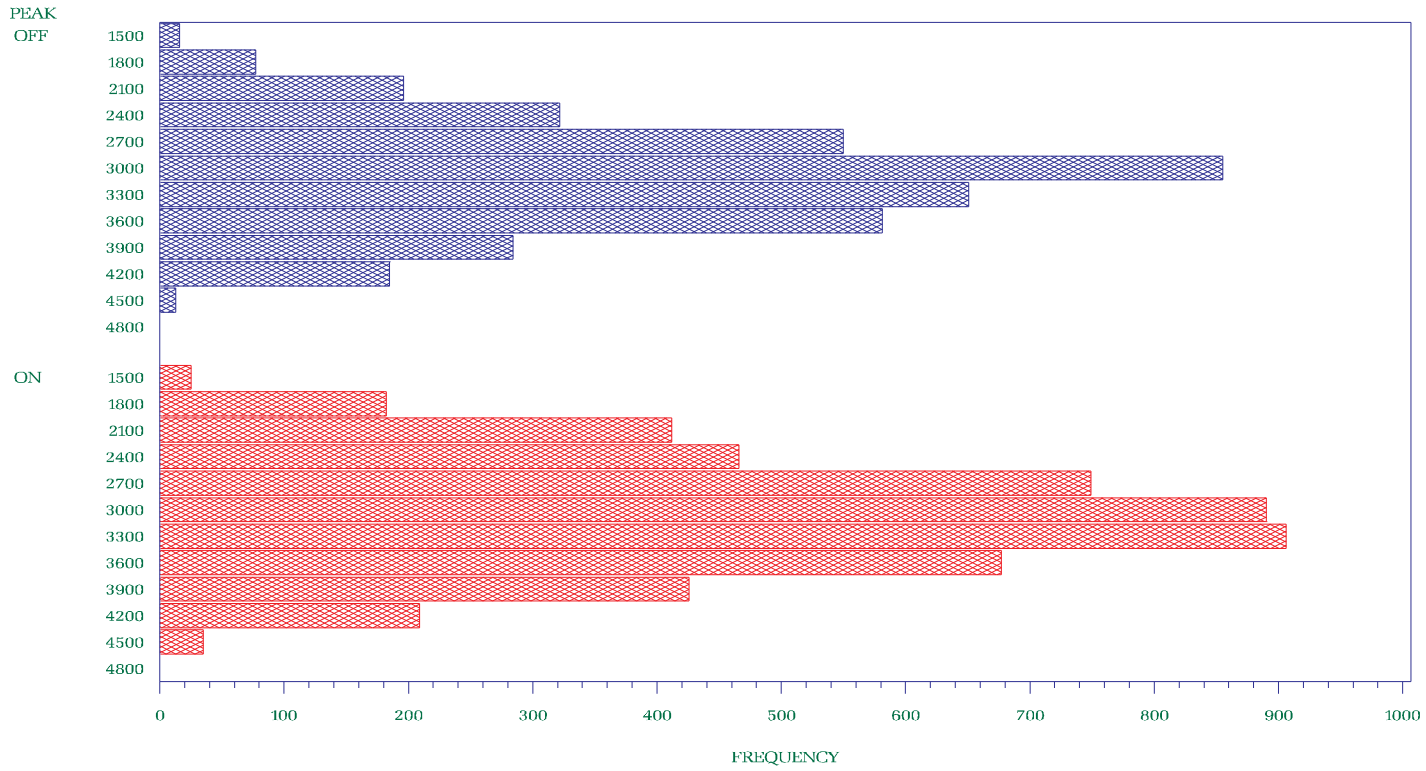
UPNY – SENY (CLOSED)



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

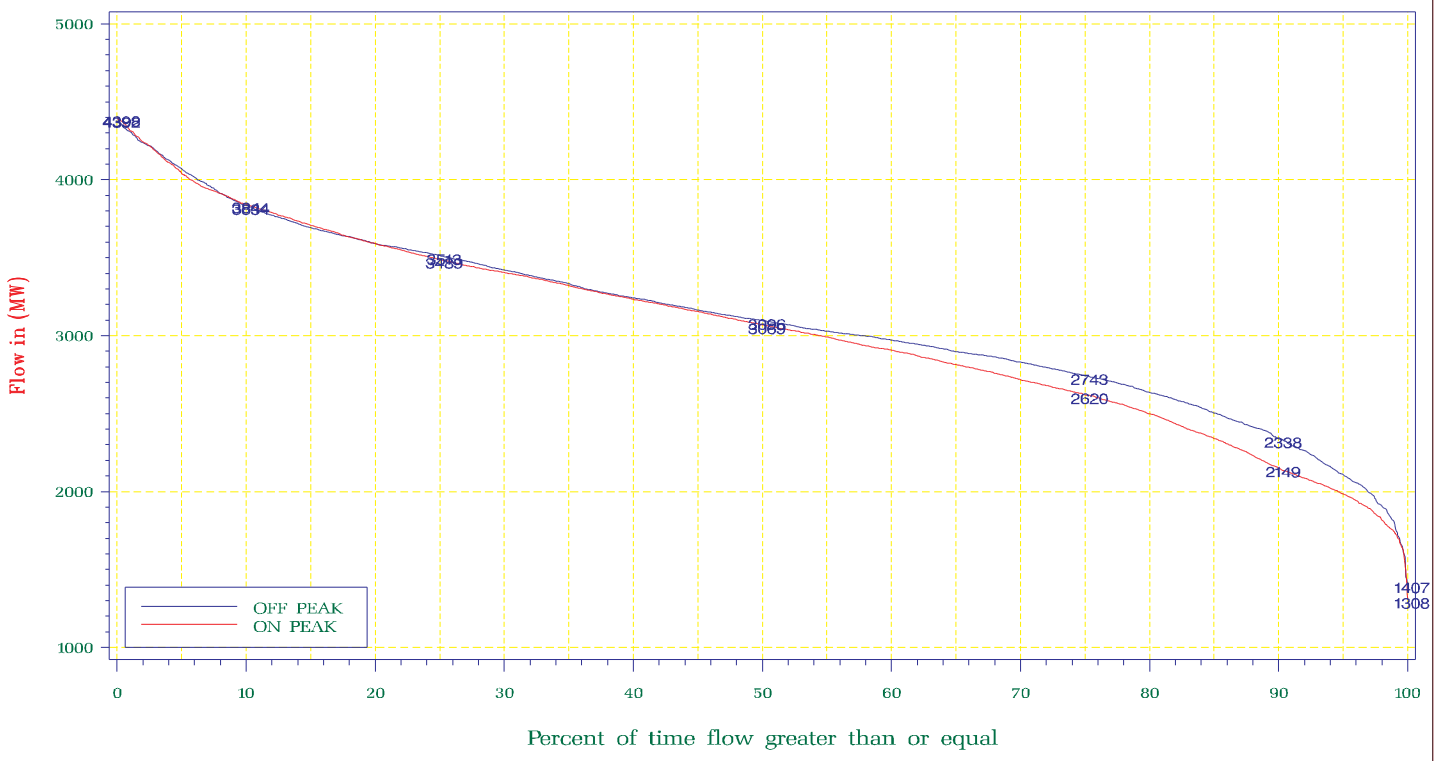
Volney – East (OPEN)



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

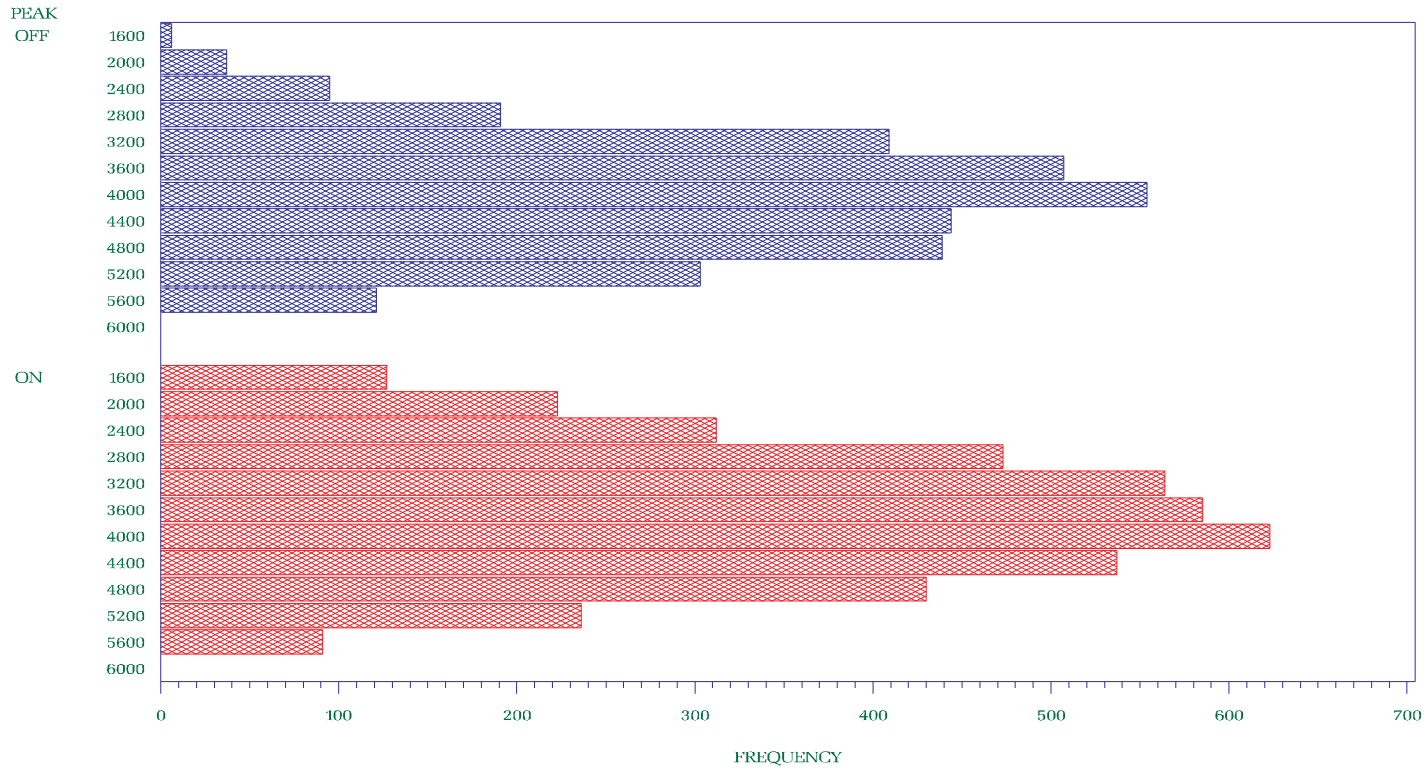
Volney – East (OPEN)



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

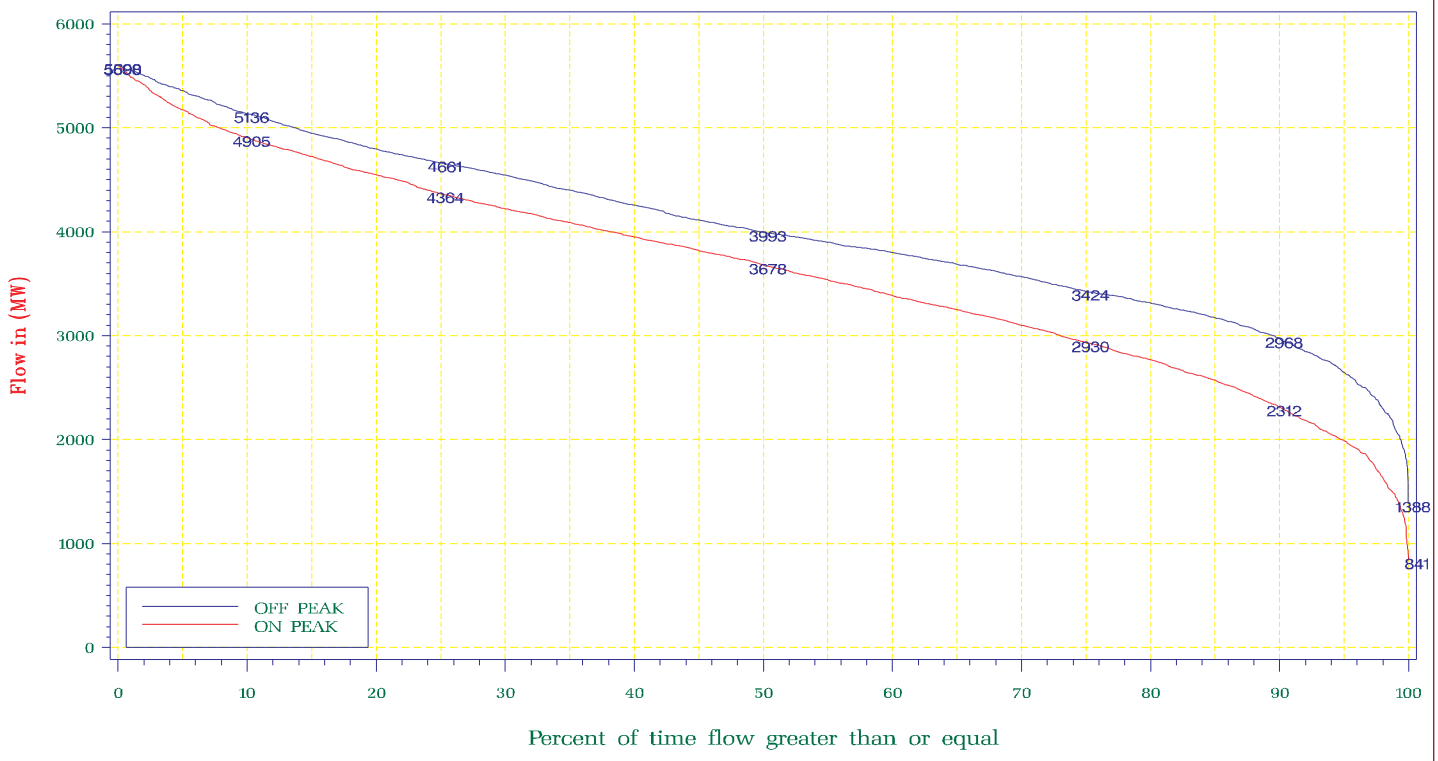
Volney – East (CLOSED)



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

Volney – East (CLOSED)

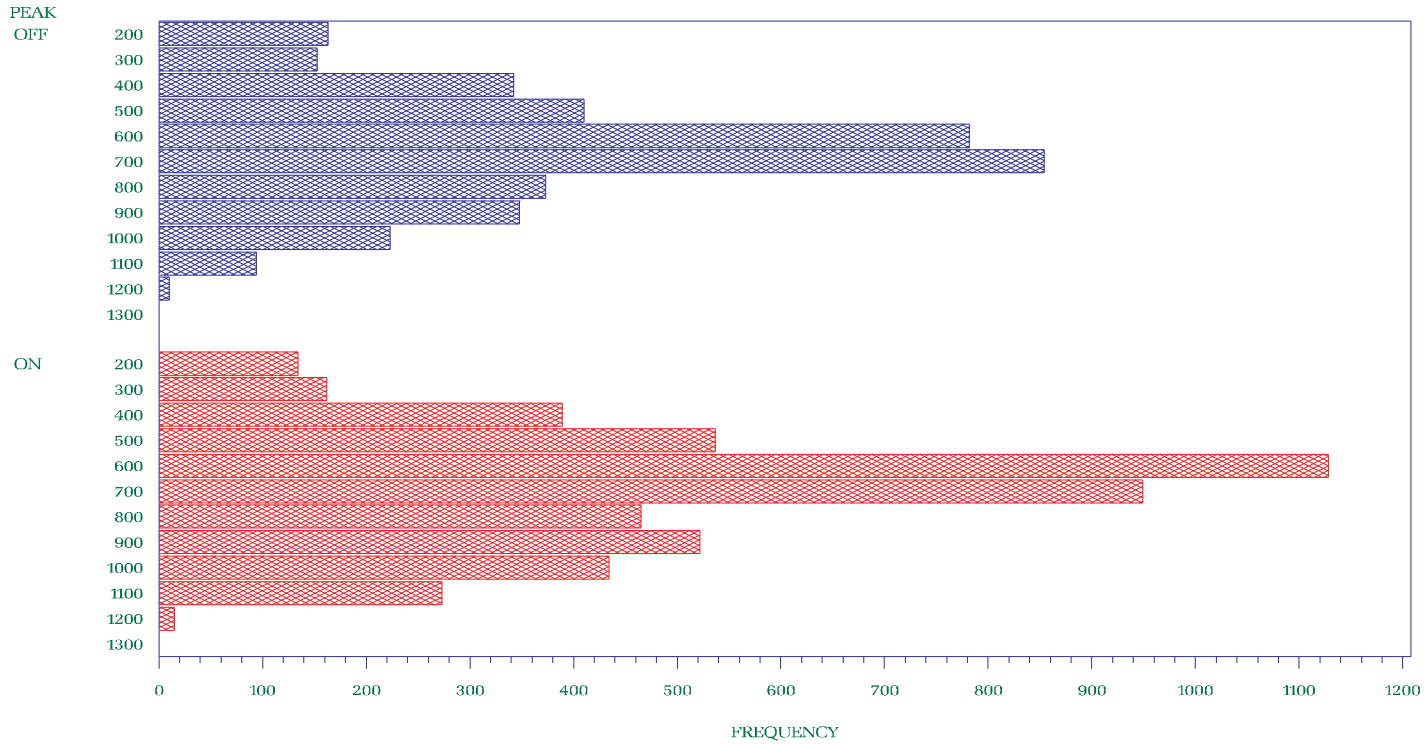


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

Westchester – Long Island

Y49 + Y50

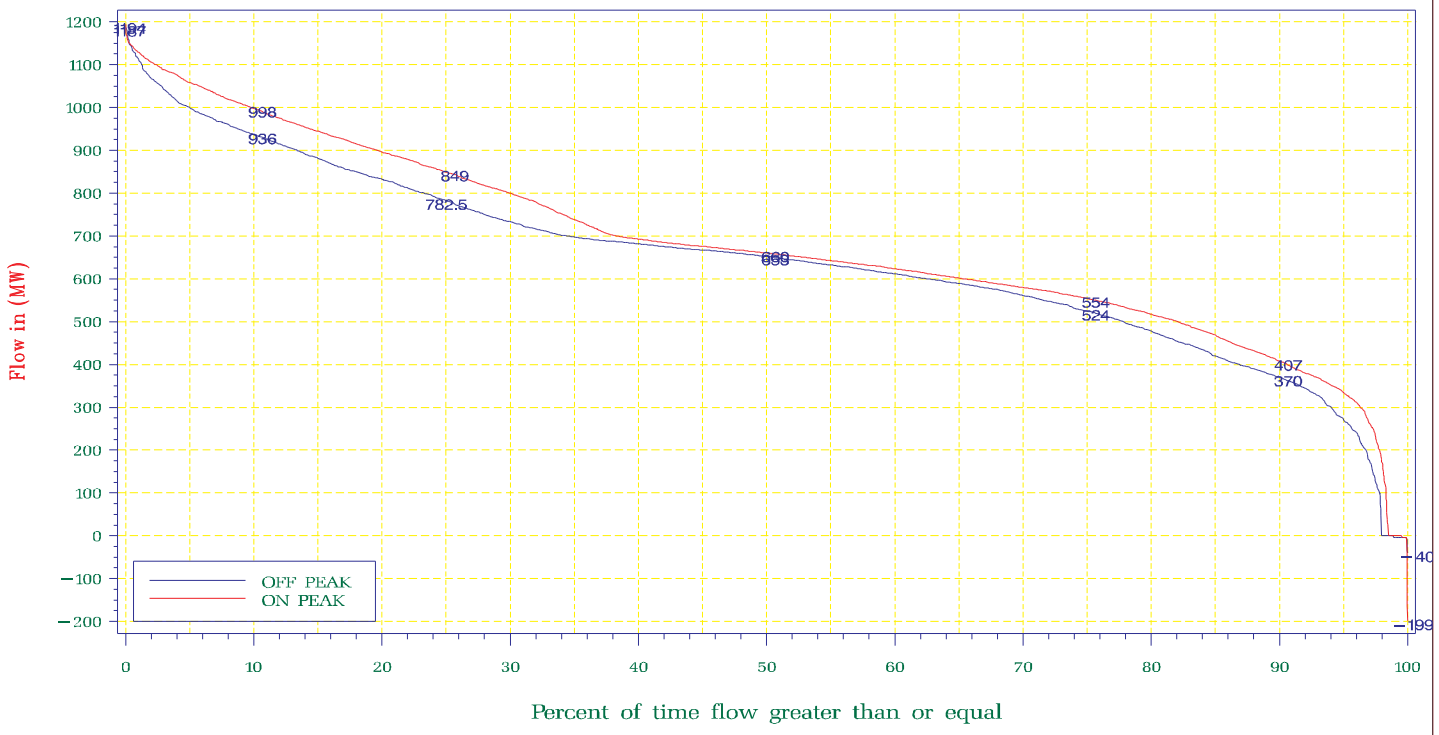


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

Westchester – Long Island

Y49 + Y50

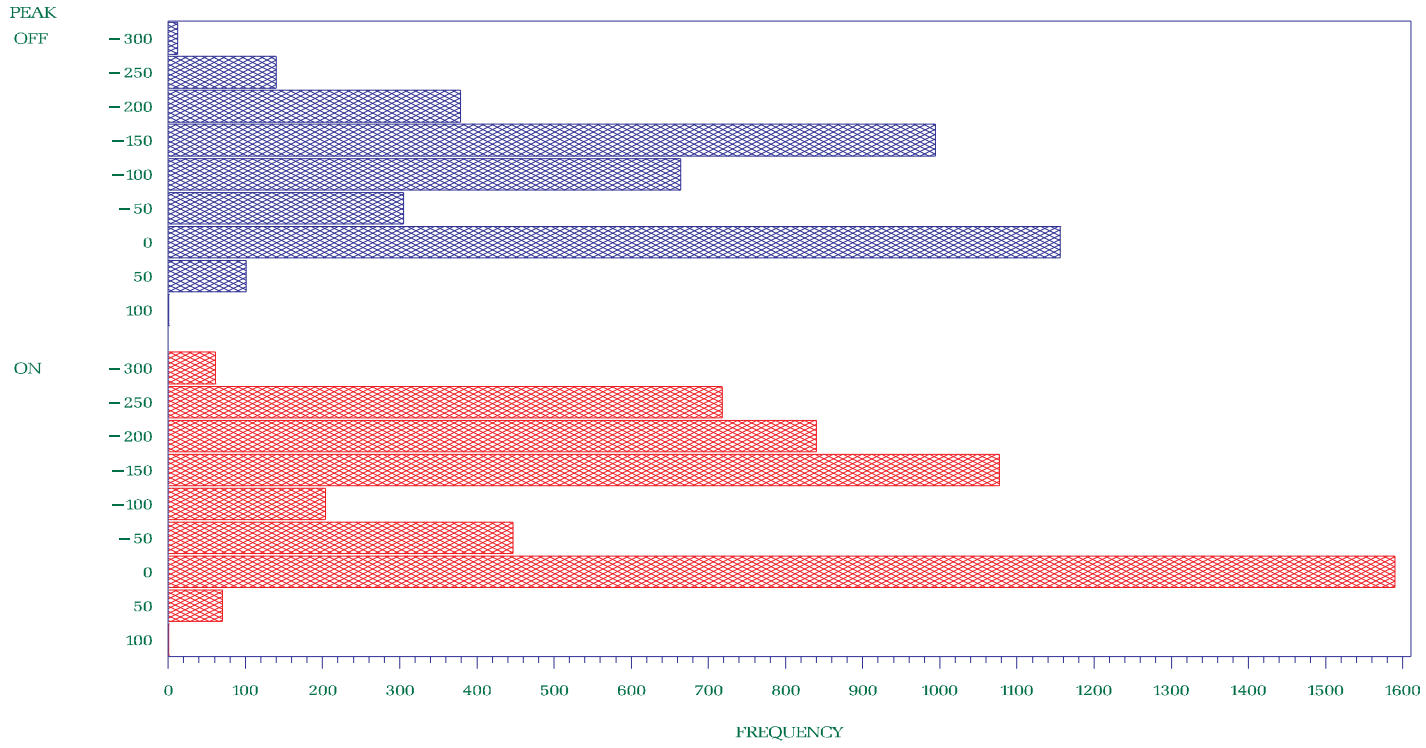


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

New York City – Long Island

901 + 903

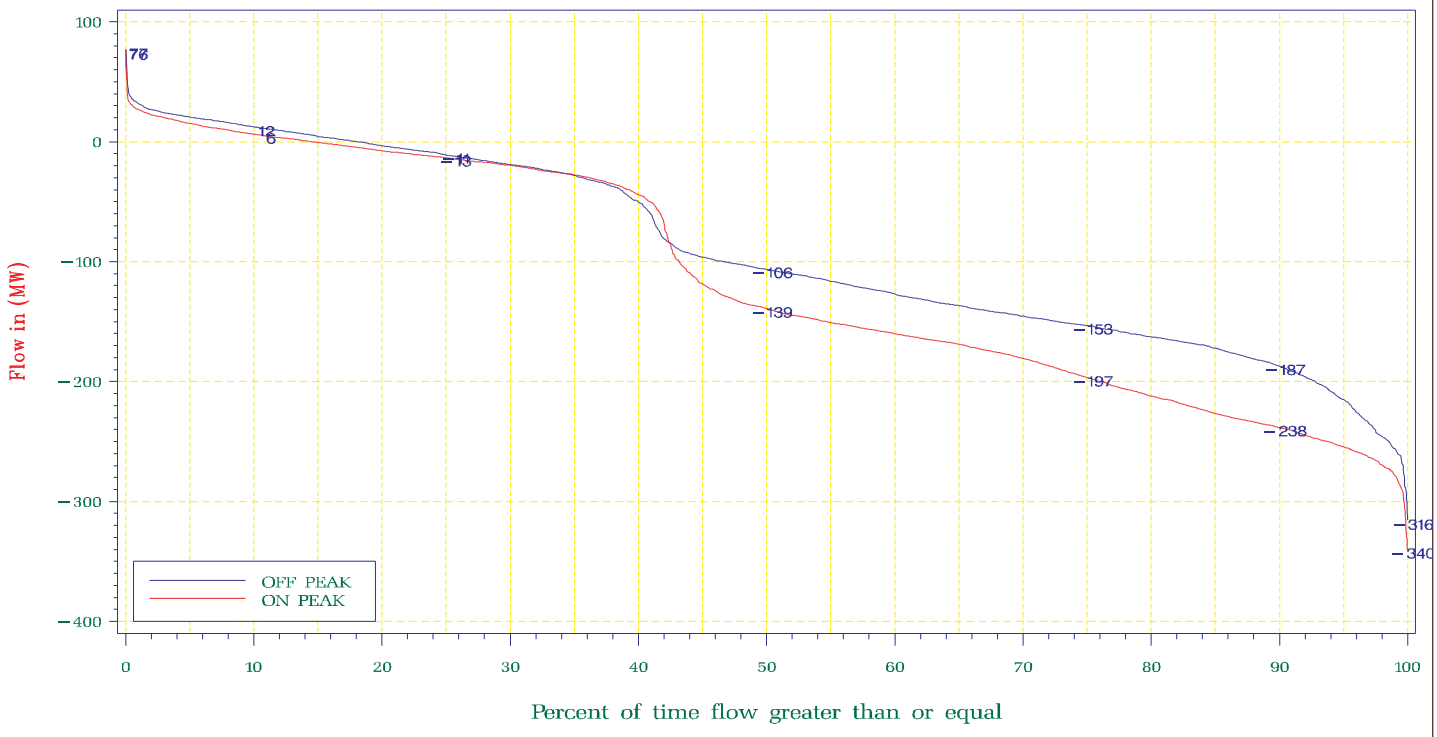


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

New York City – Long Island

901 + 903



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

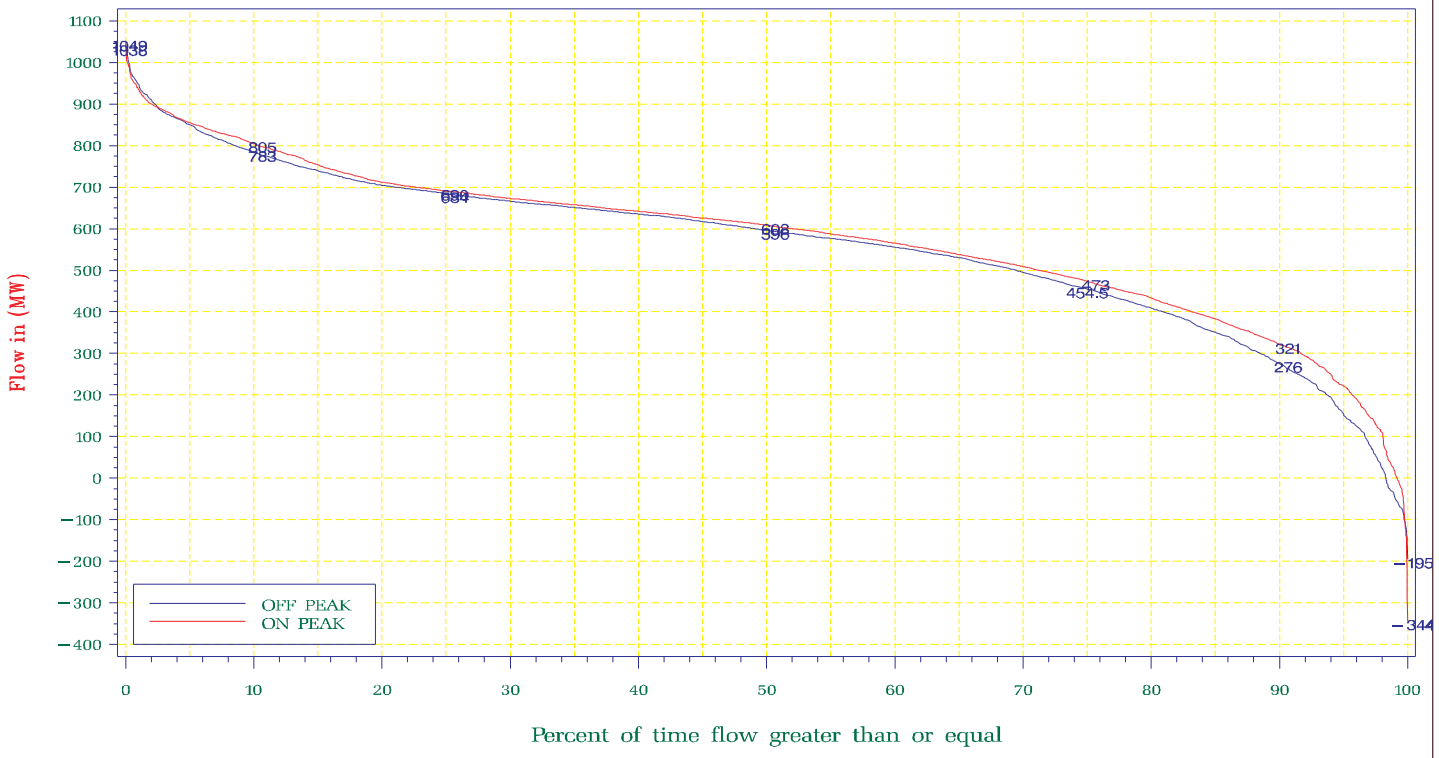
NYISO Frequency Interface Flow For January – December 2002

LIPA Import

OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

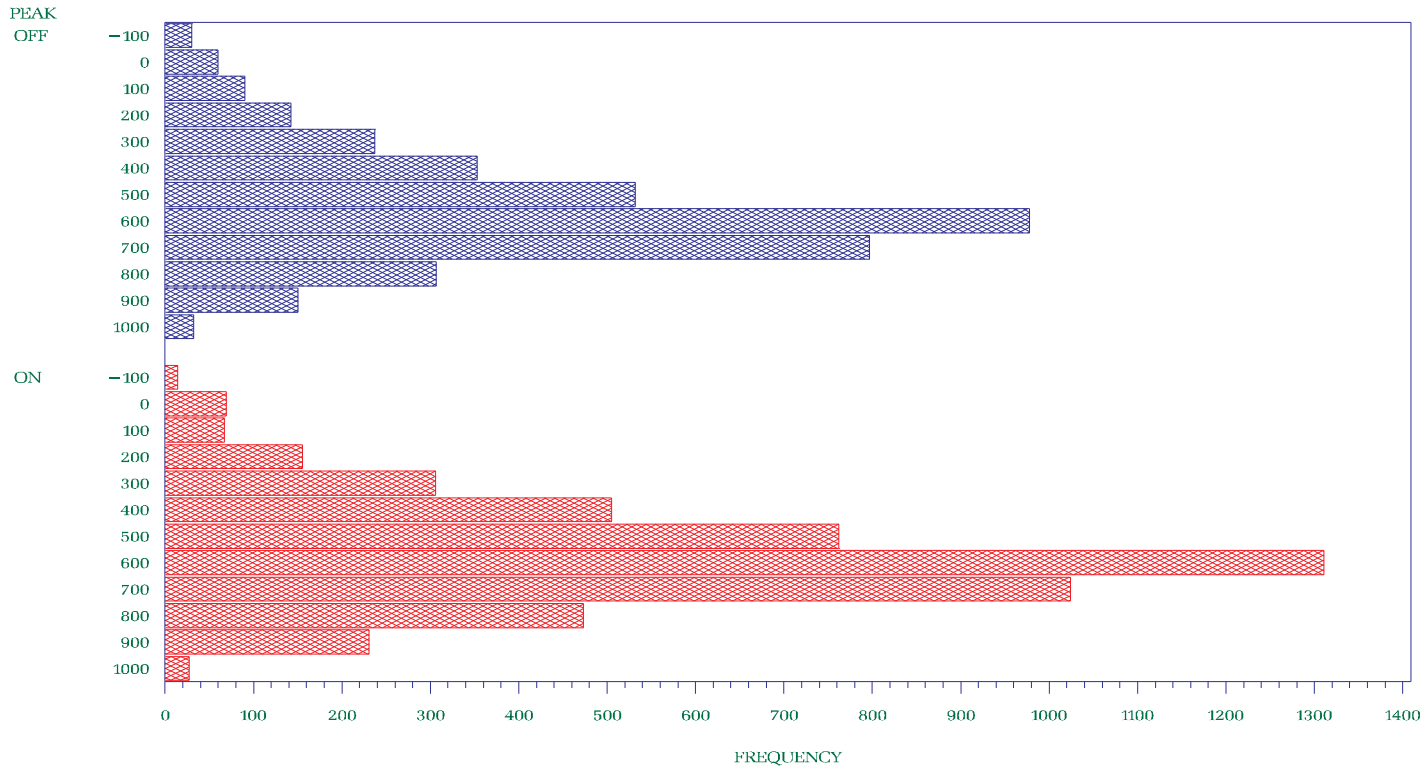
LIPA Import



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

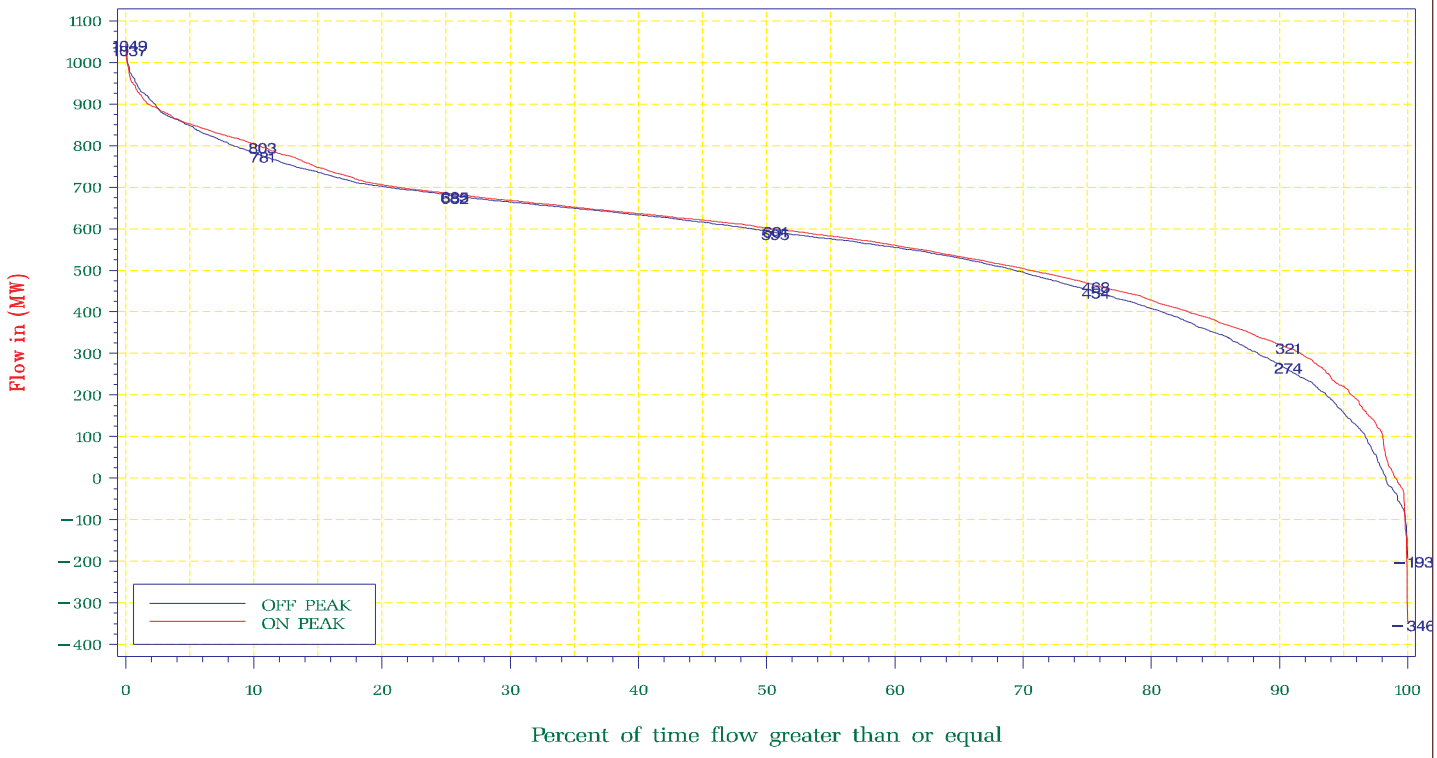
Con Ed – LIPA



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

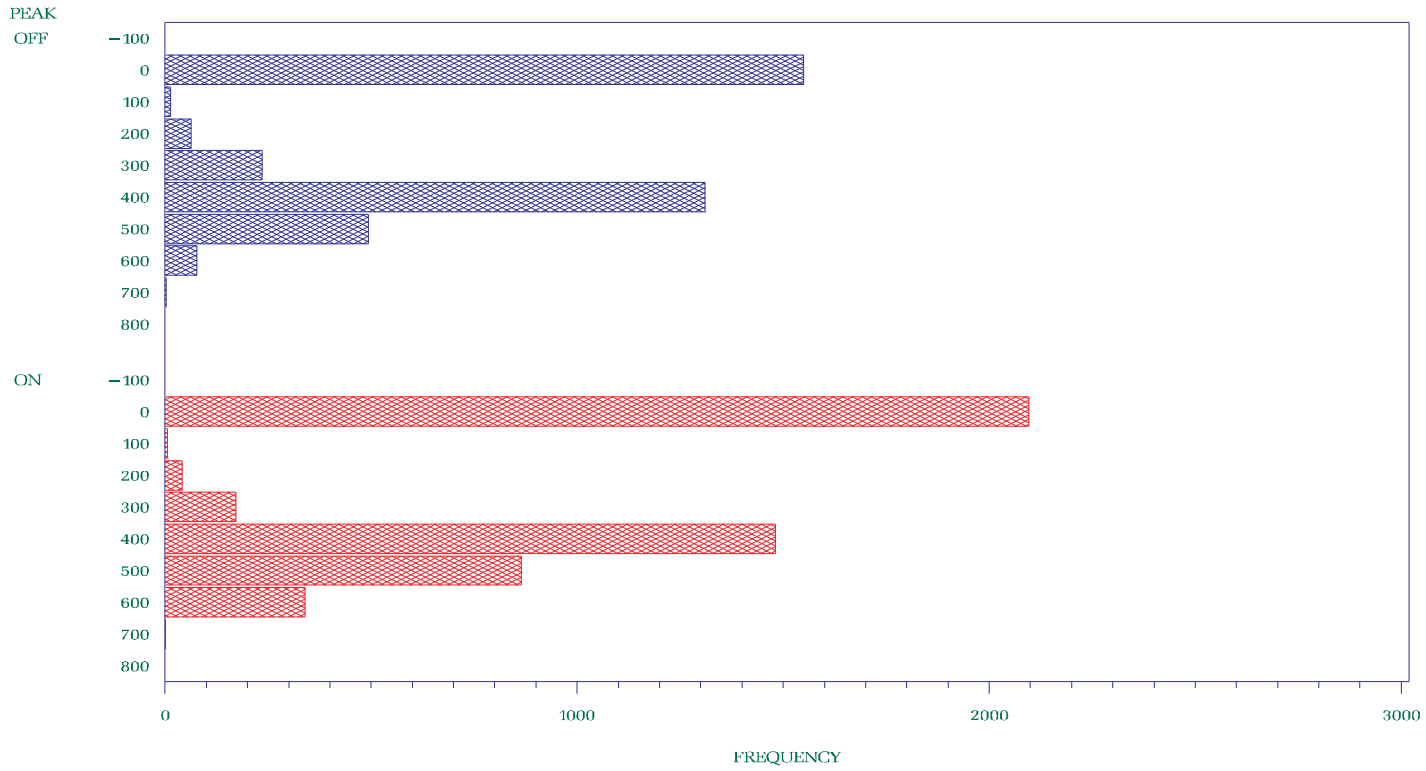
Con Ed – LIPA



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

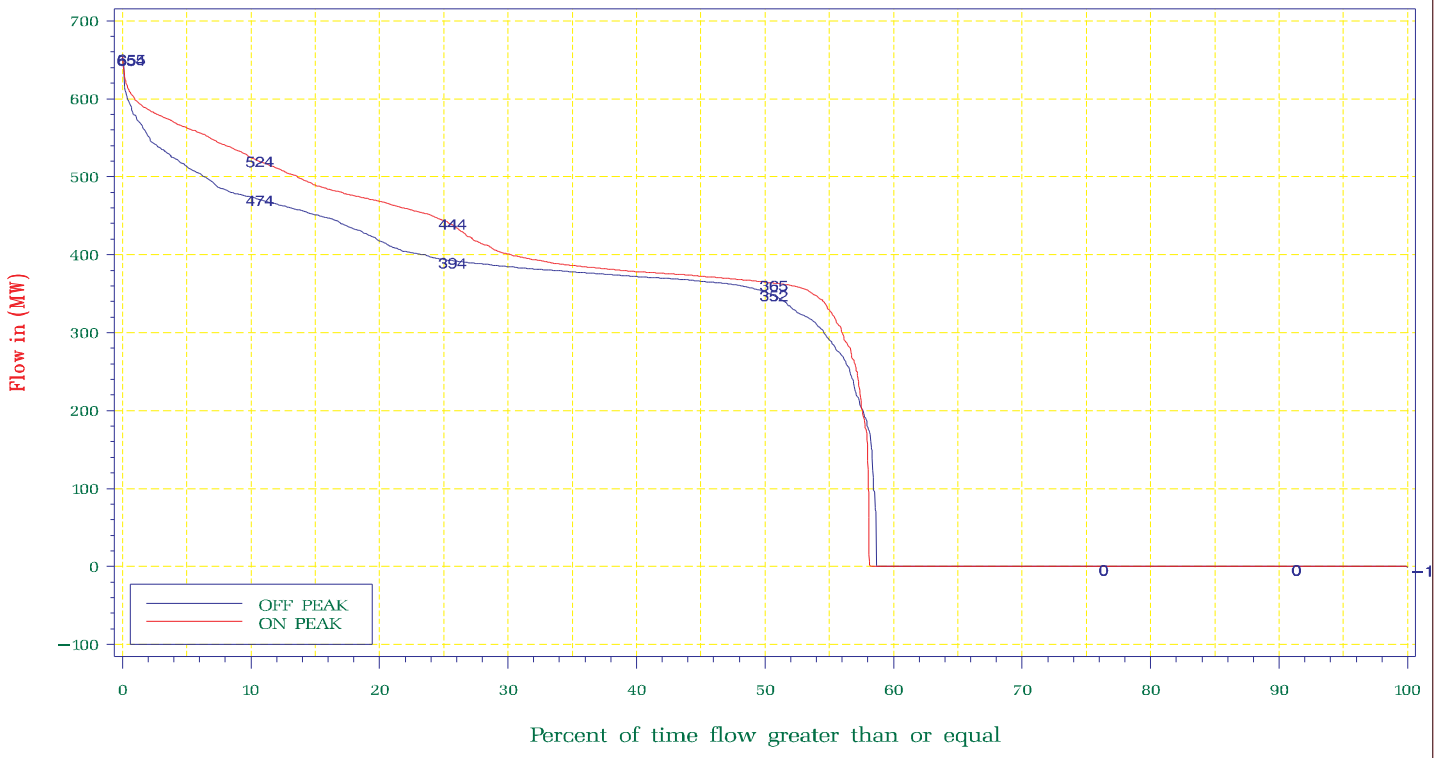
Y50:Dunwoodie – Shore Rd.



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

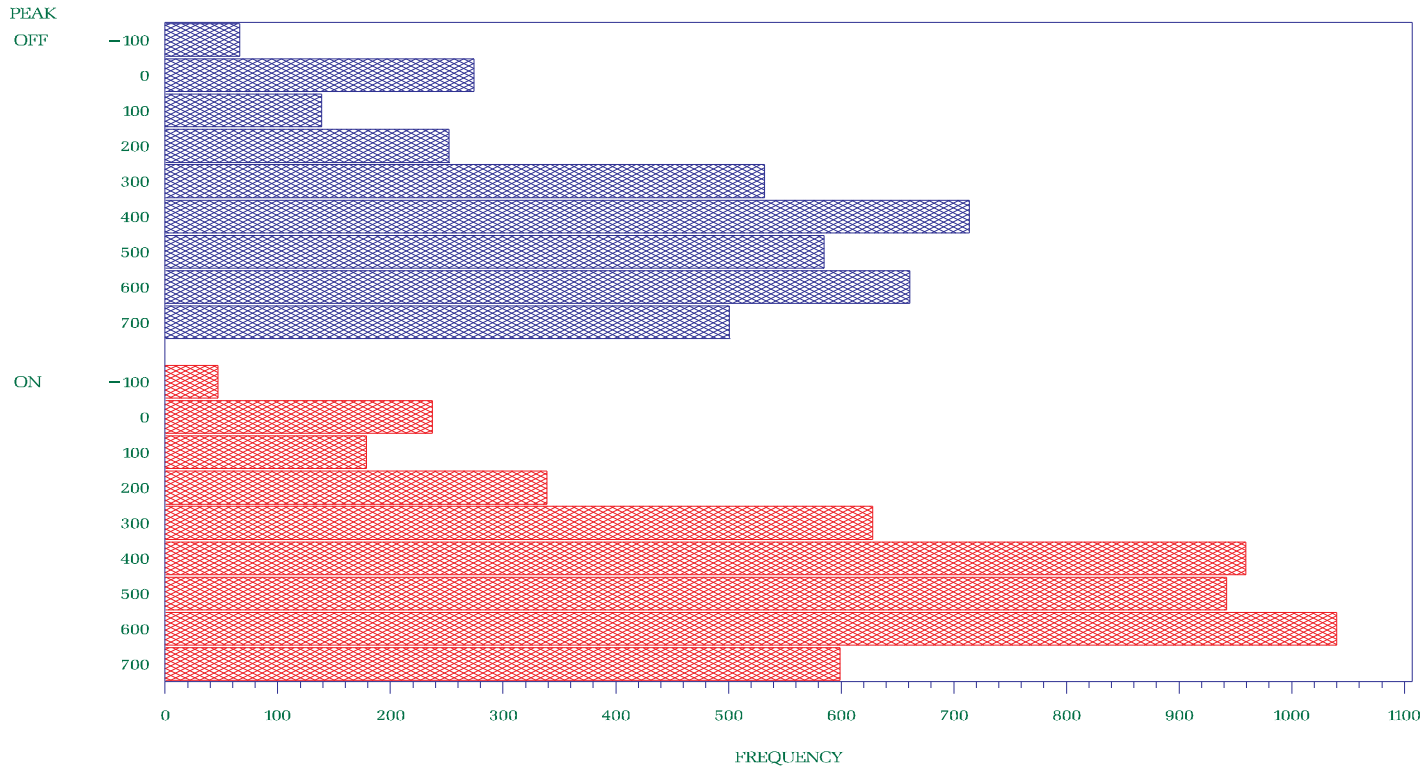
Y50:Dunwoodie – Shore Rd.



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

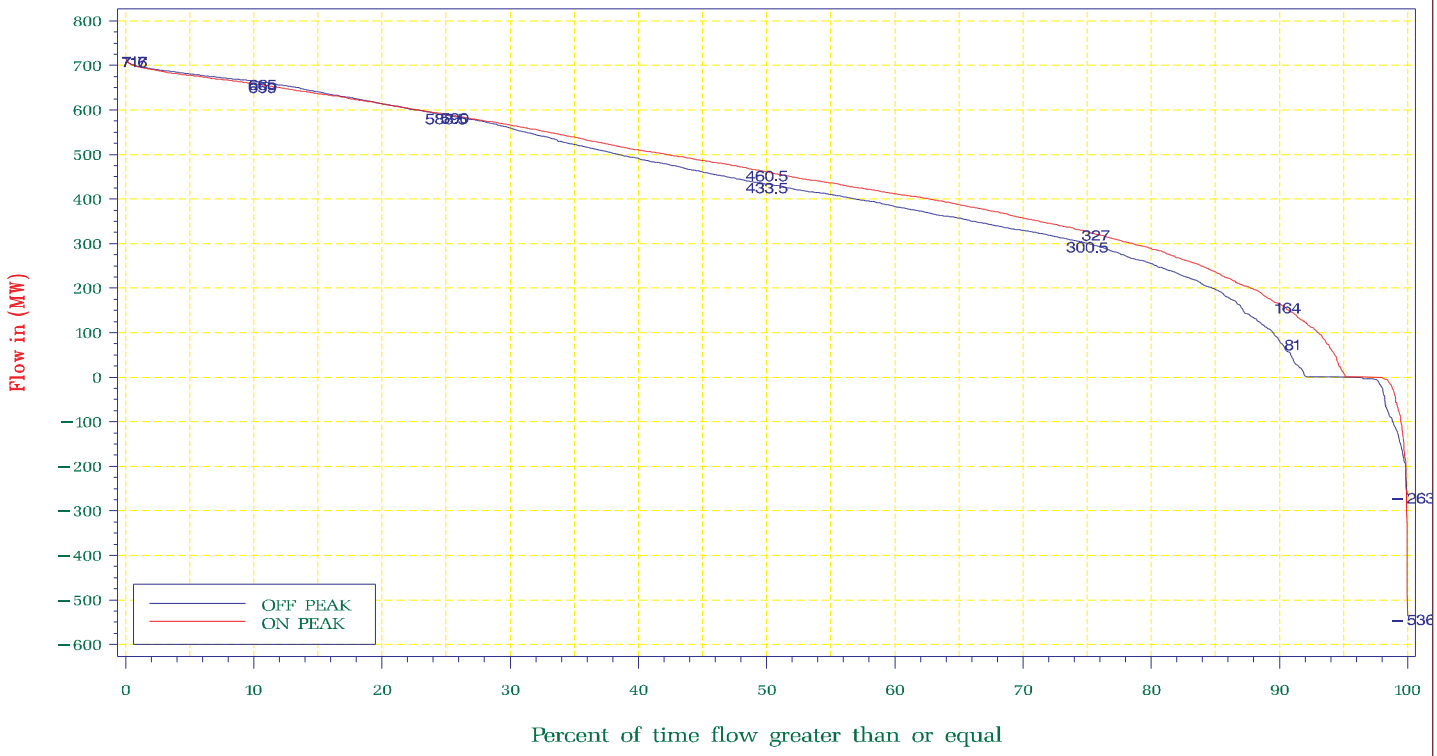
Y49:Sprainbrook – E.Garden City



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

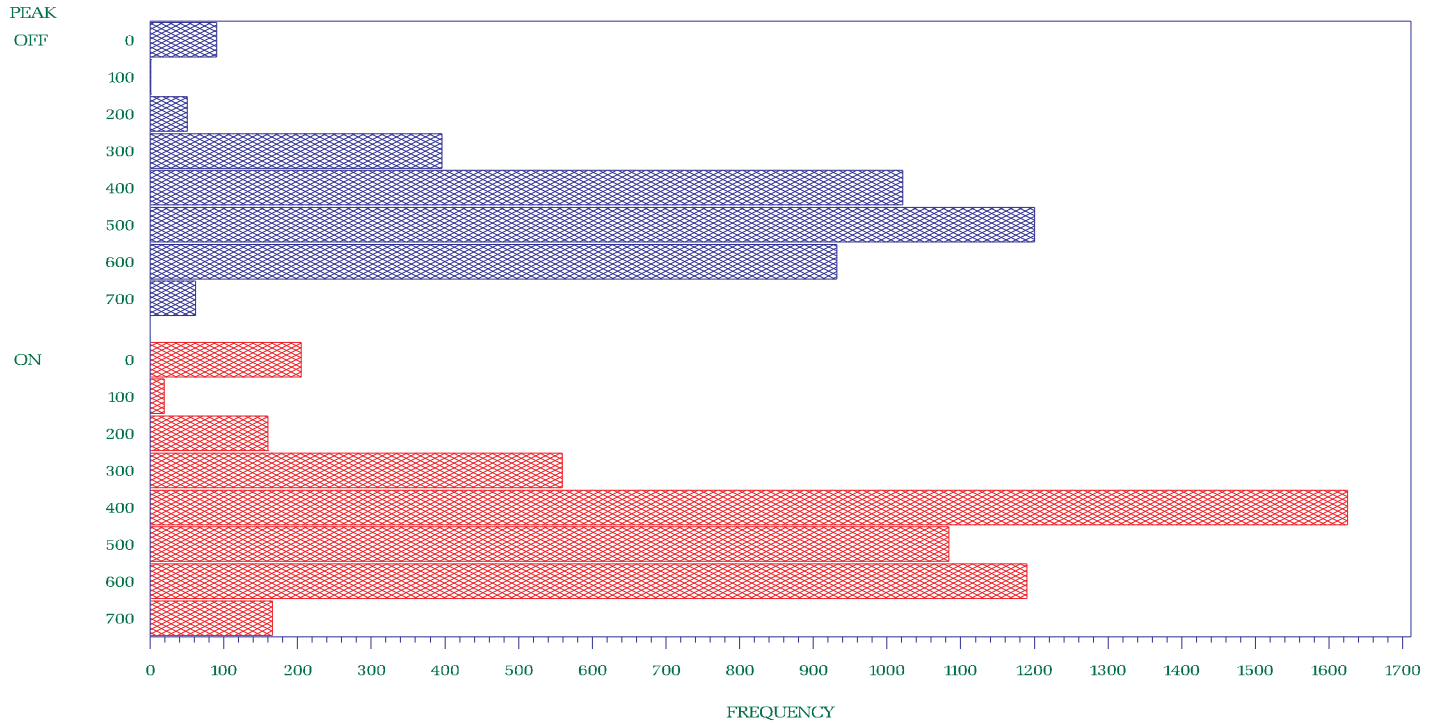
Y49:Sprainbrook – E.Garden City



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

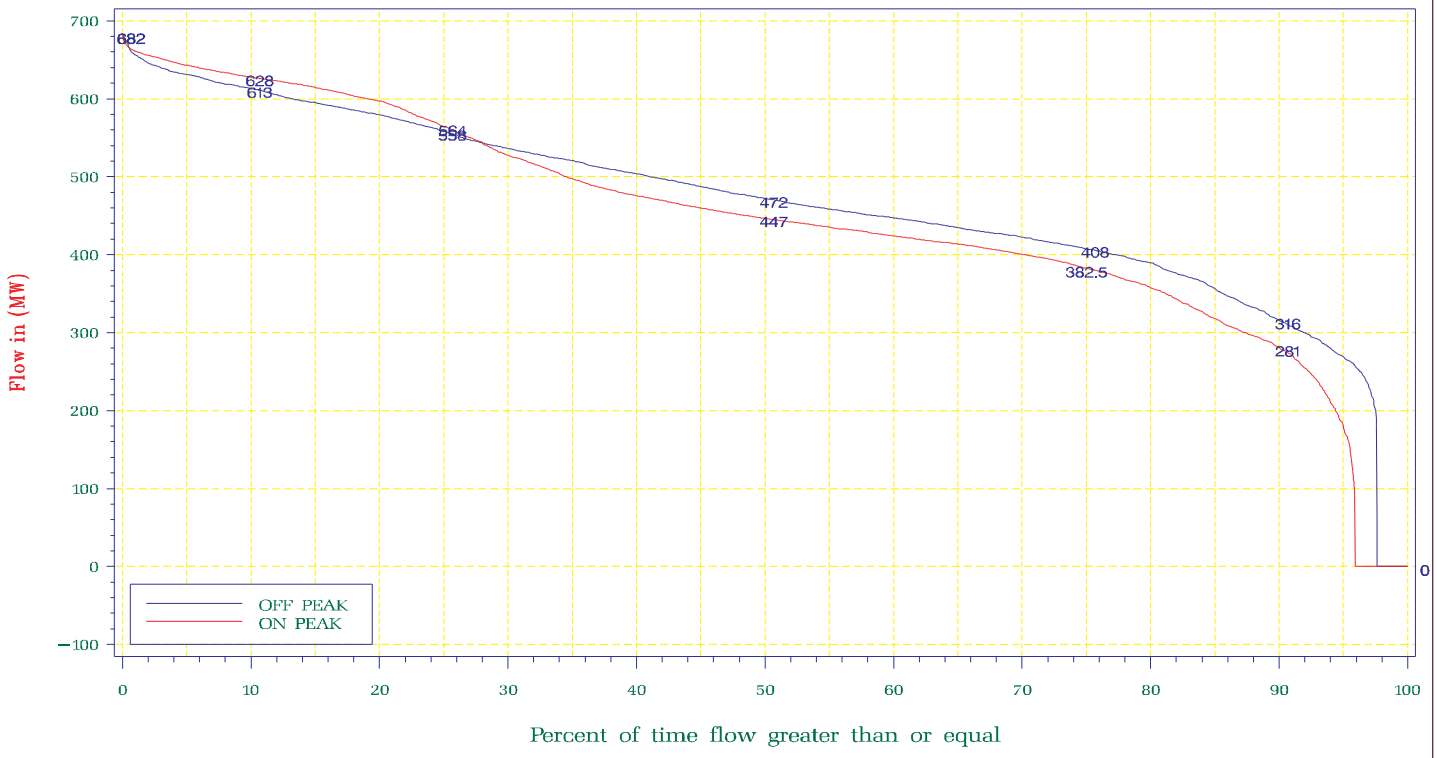
HOMER CITY – WATERCURE



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

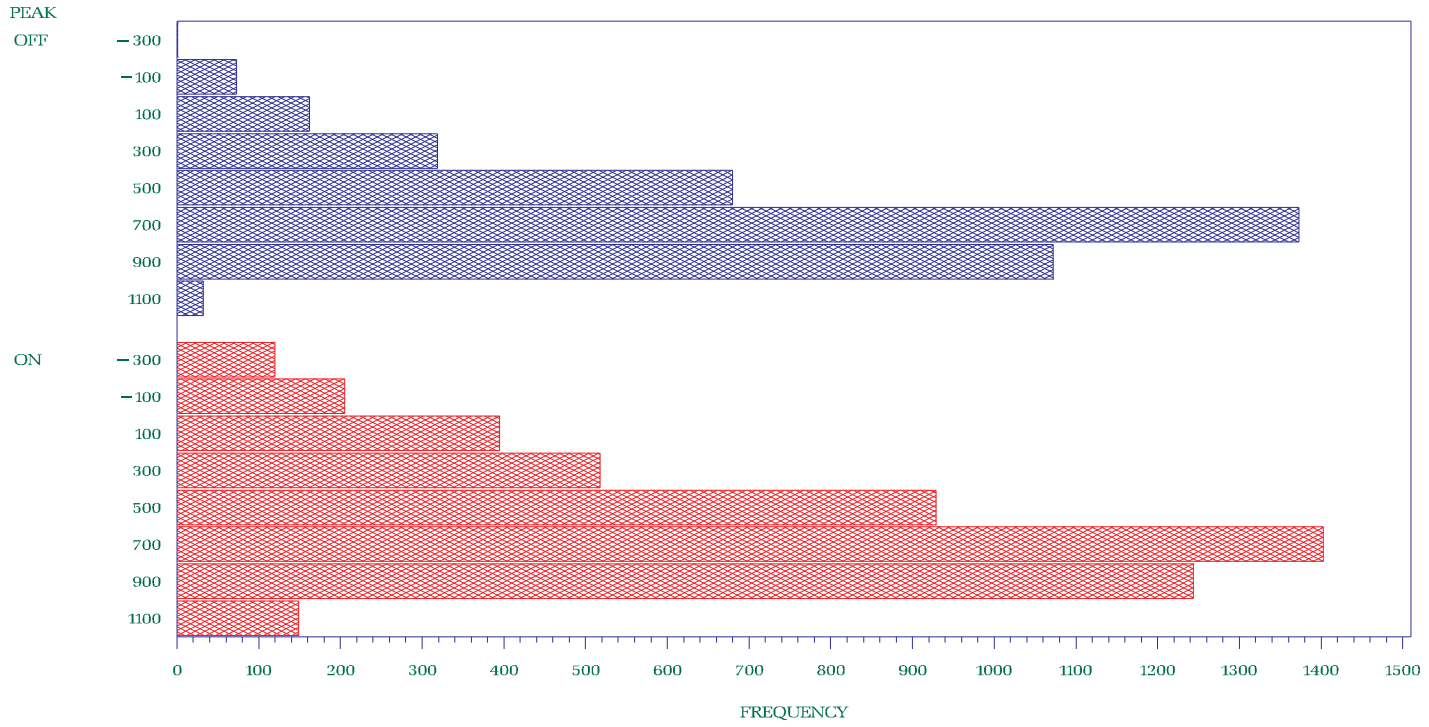
HOMER CITY – WATERCURE



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

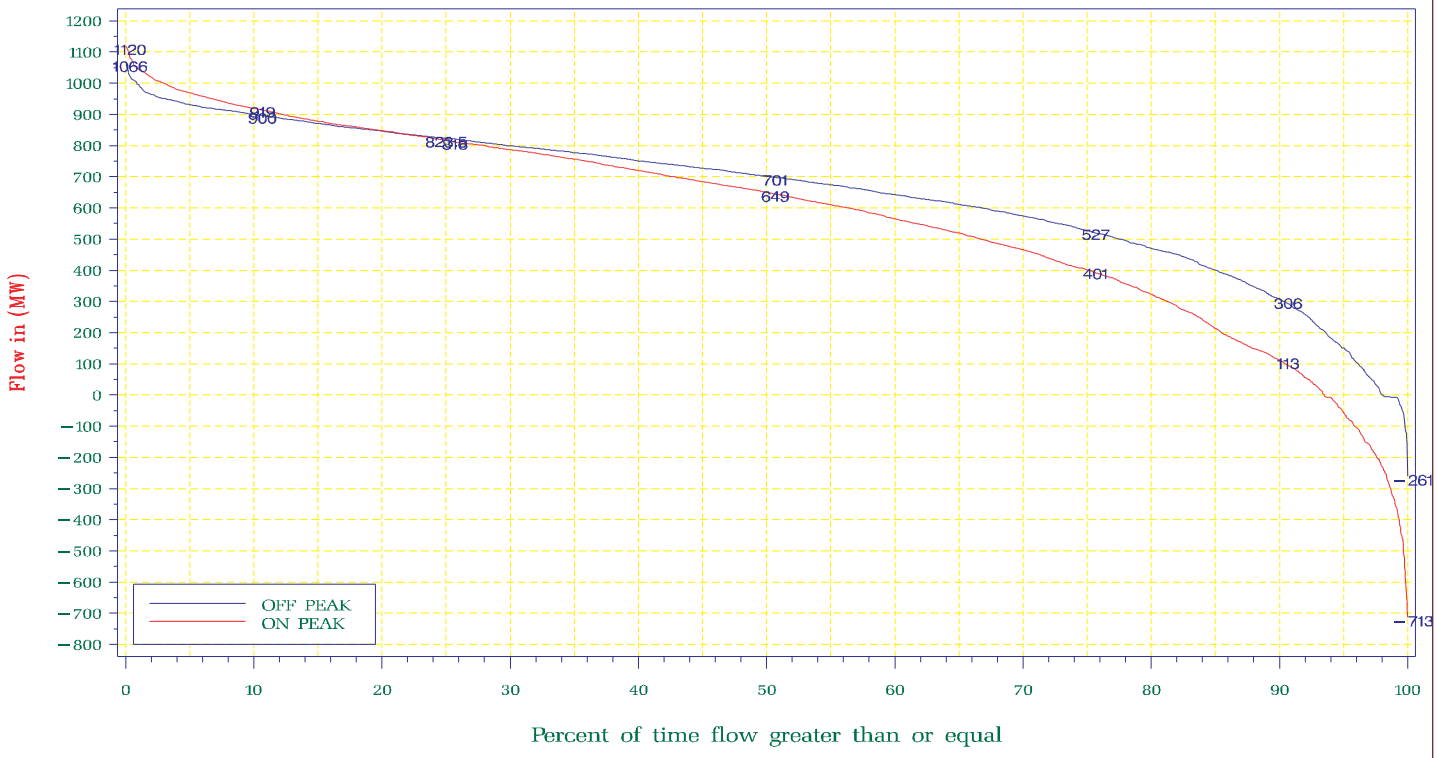
5018:BRANCHBURG – RAMAPO



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

5018:BRANCHBURG – RAMAPO



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

Con Ed/PSEG PAR (JK/ABC) Imbalance

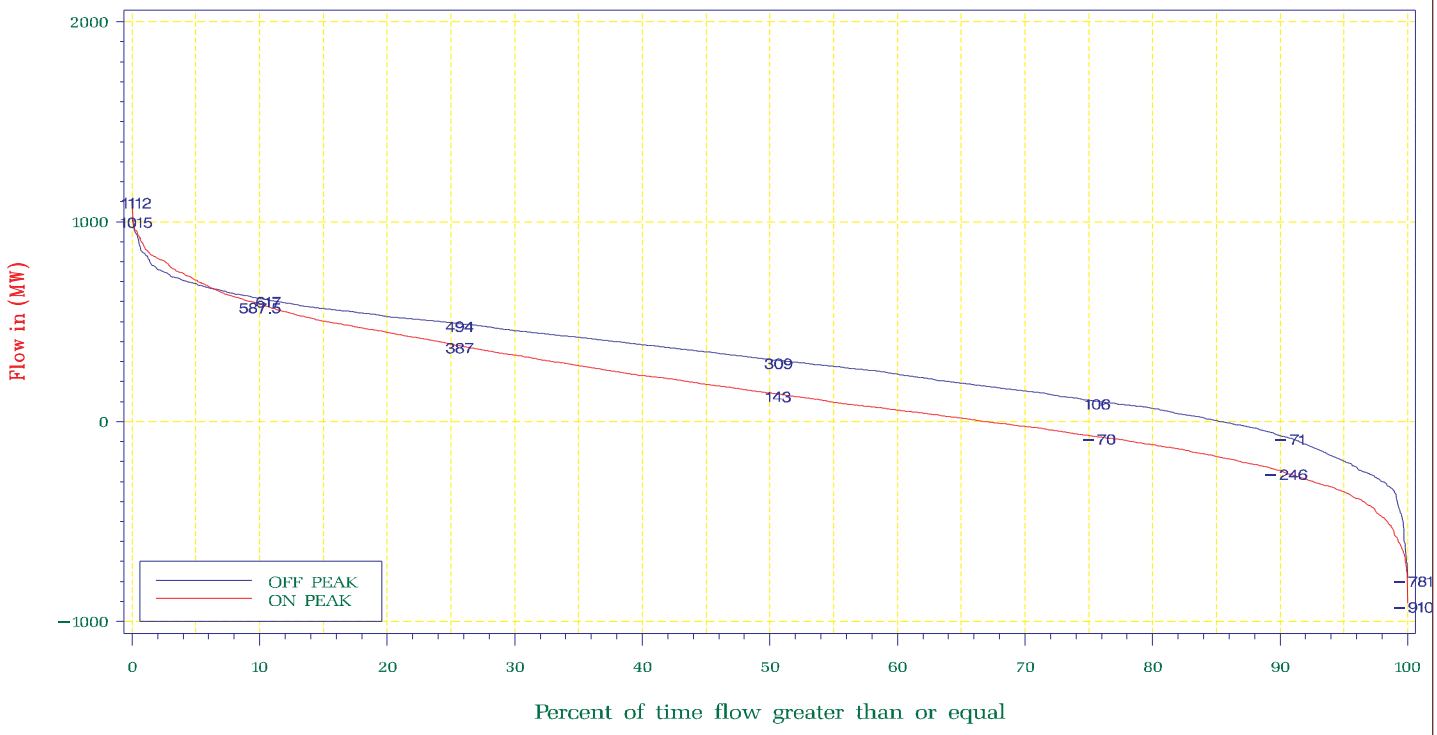
+ is toward PSEG

OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

Con Ed/PSEG PAR (JK/ABC) Imbalance

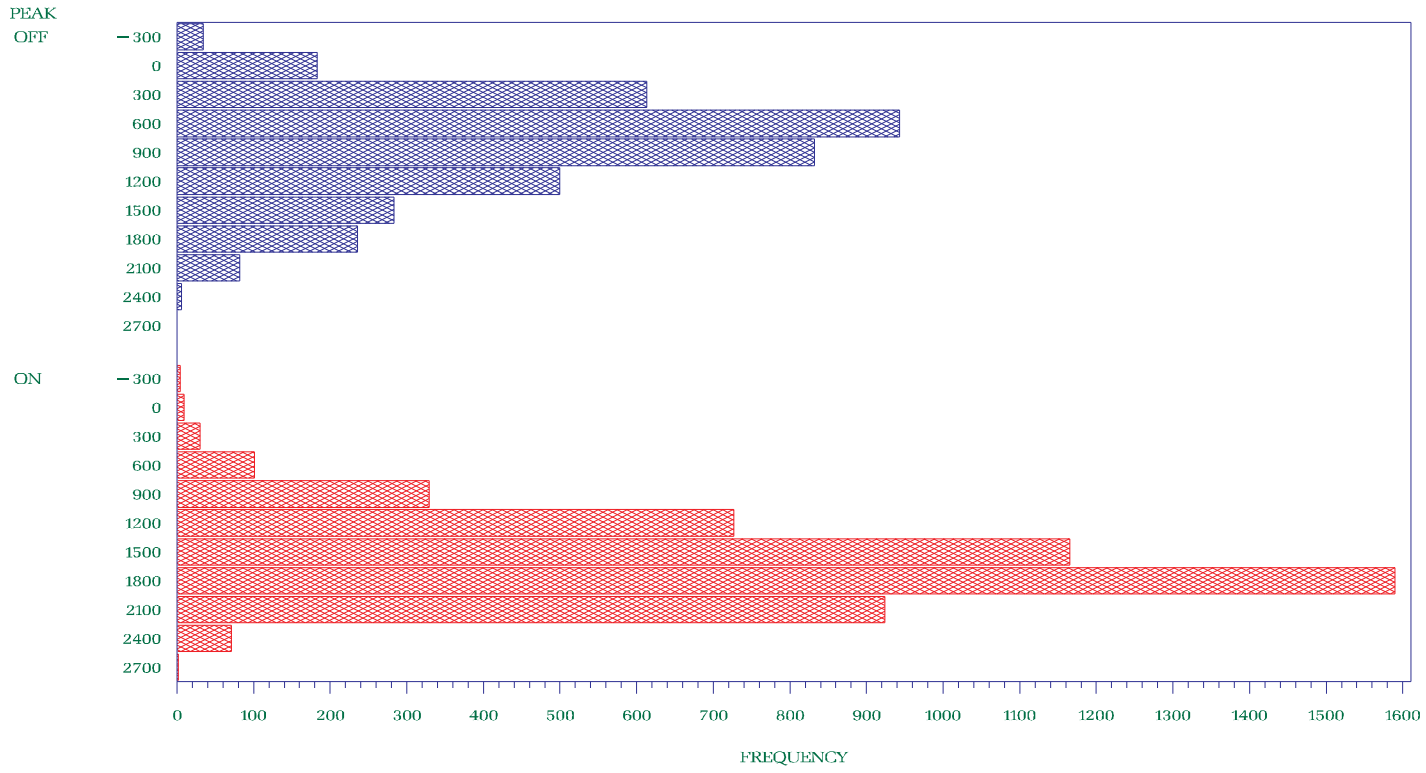
+ is toward PSEG



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

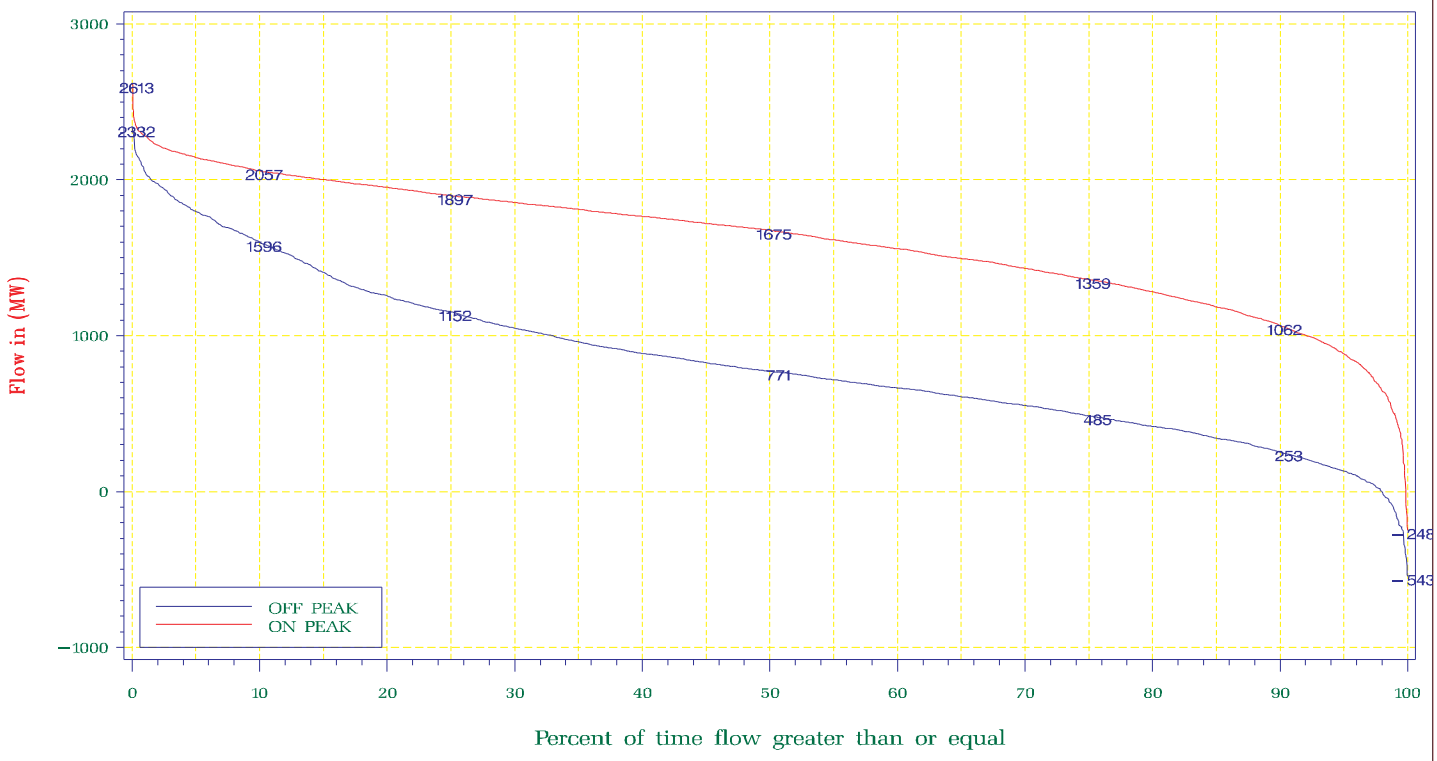
West NY Gen Export



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

West NY Gen Export



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

Appendix G – Margins to Limits
On- Peak vs. Off- Peak

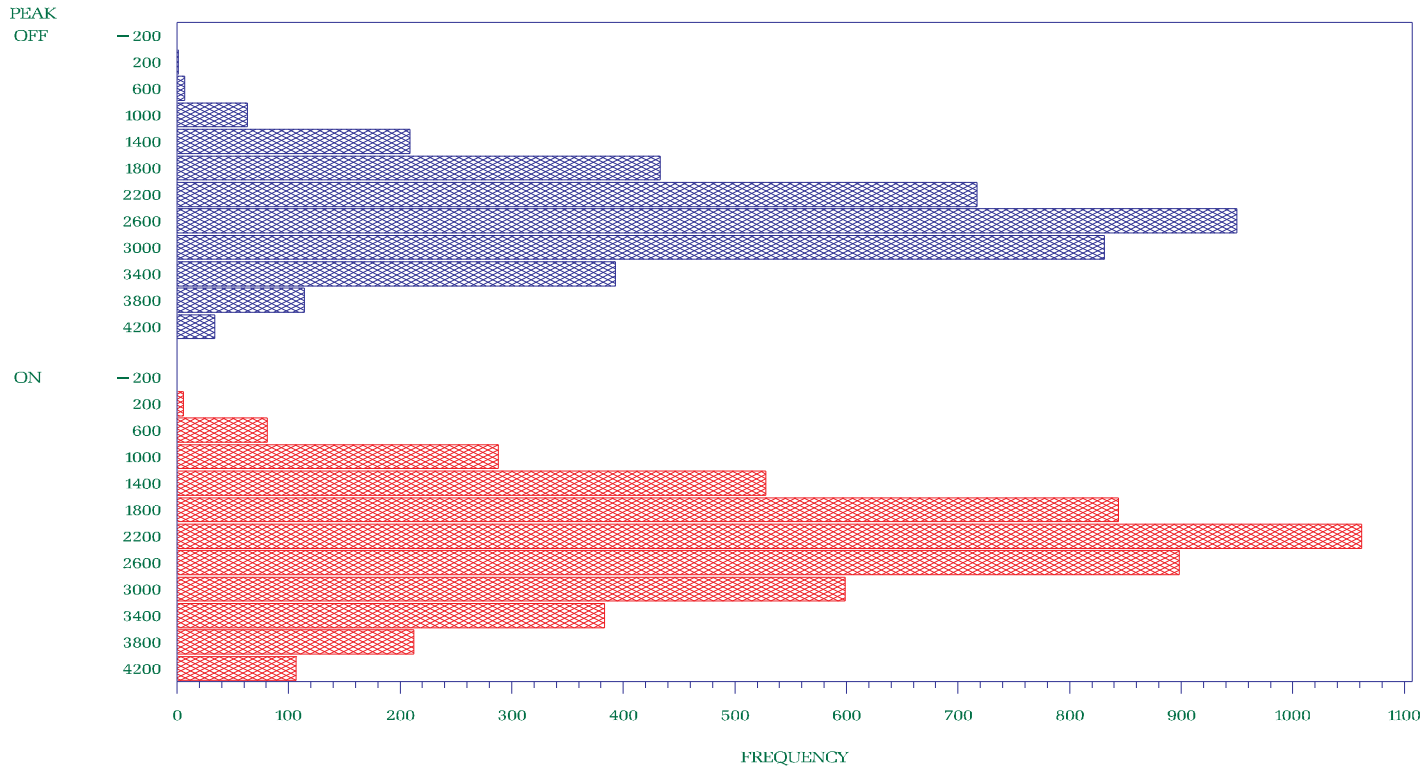
TABLE OF CONTENTS

Prepared by: Tu Minh Thi Nguyen

This page is intentionally left blank.

NYISO Frequency Interface Flow For January – December 2002

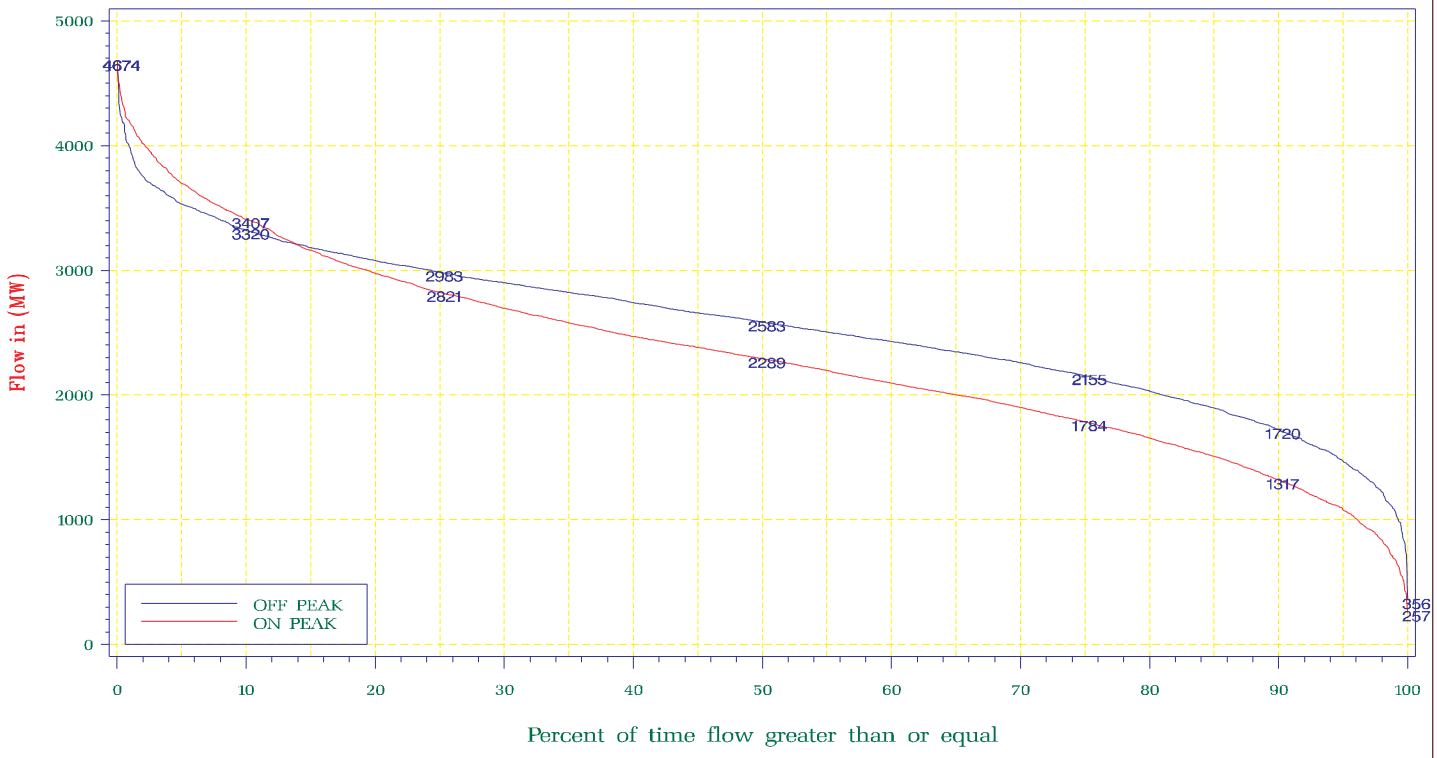
Margin to Total East Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

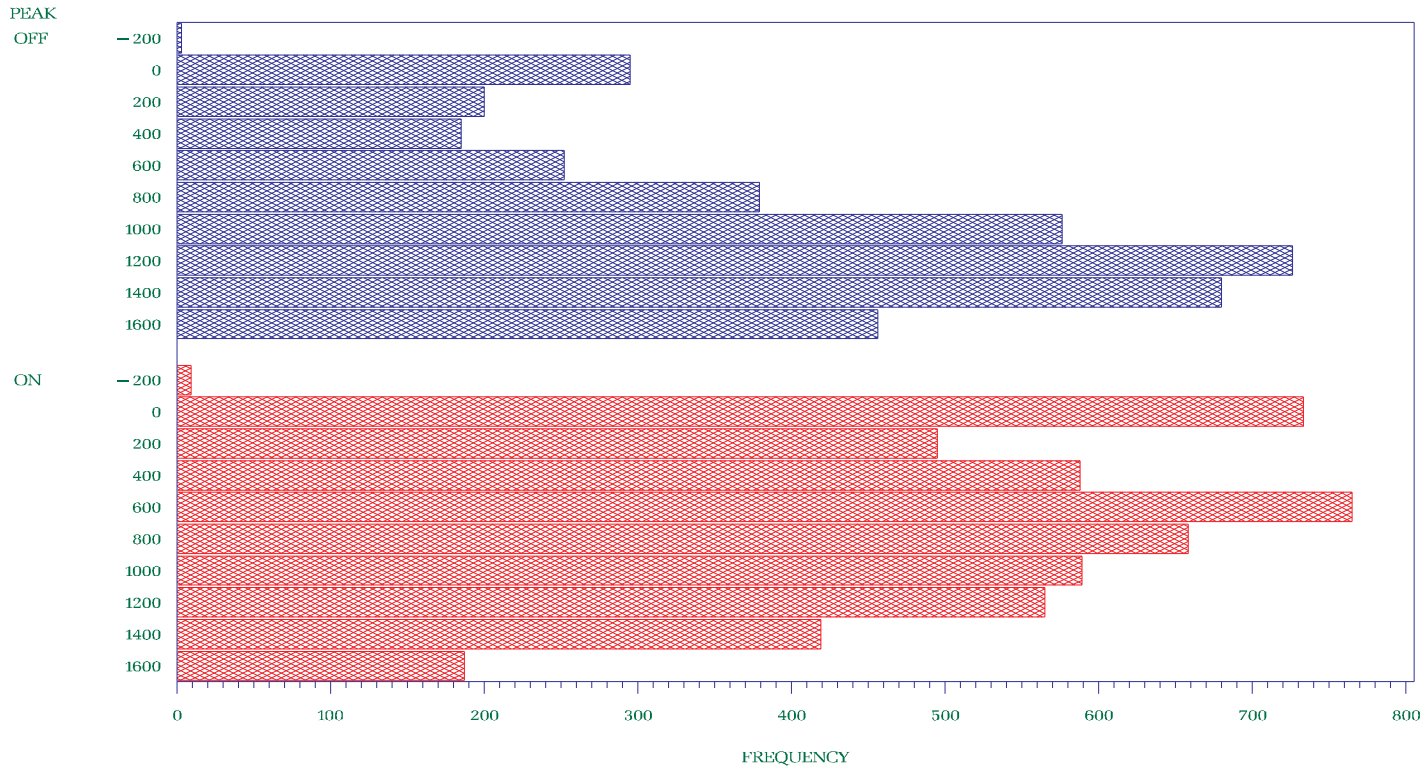
Margin to Total East Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

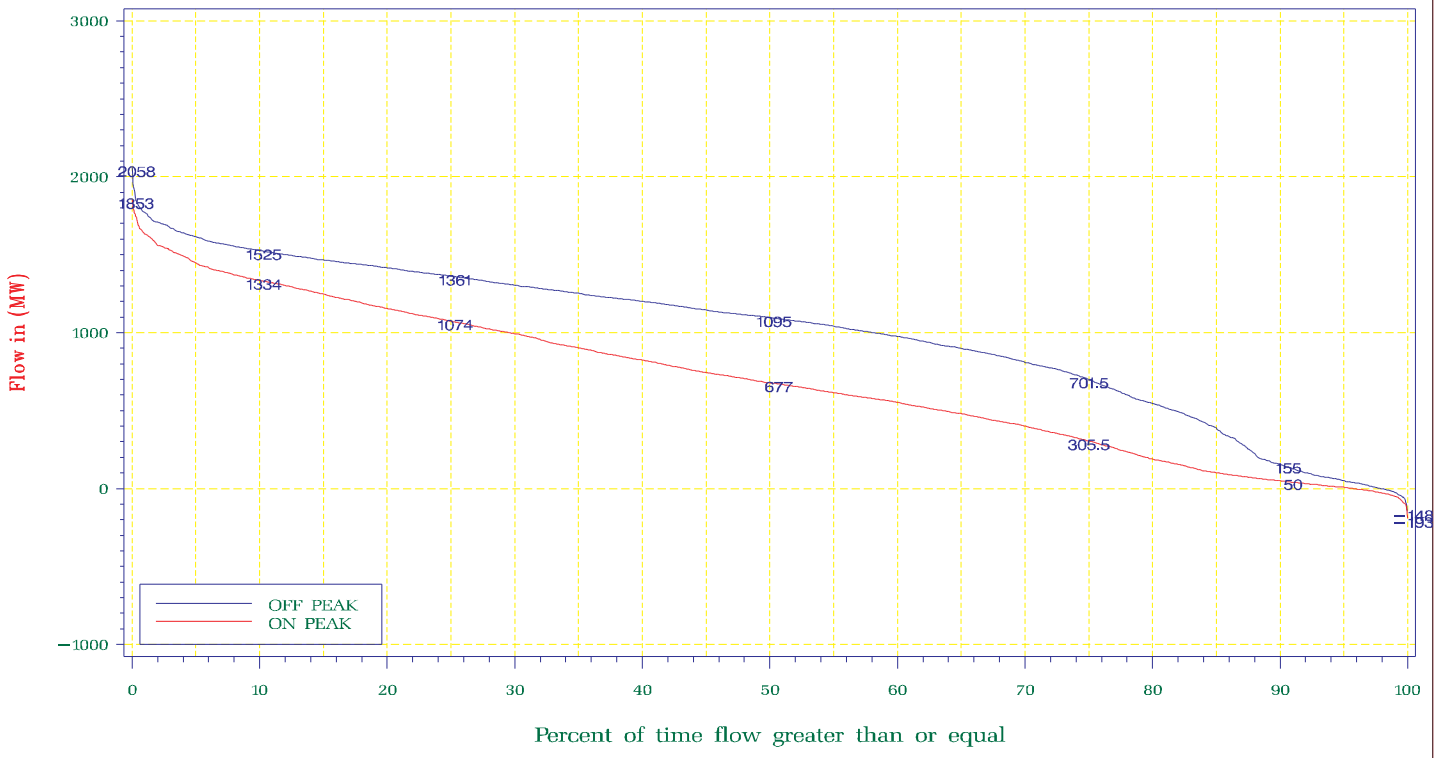
Margin to Central East Stability Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

Margin to Central East Stability Limit

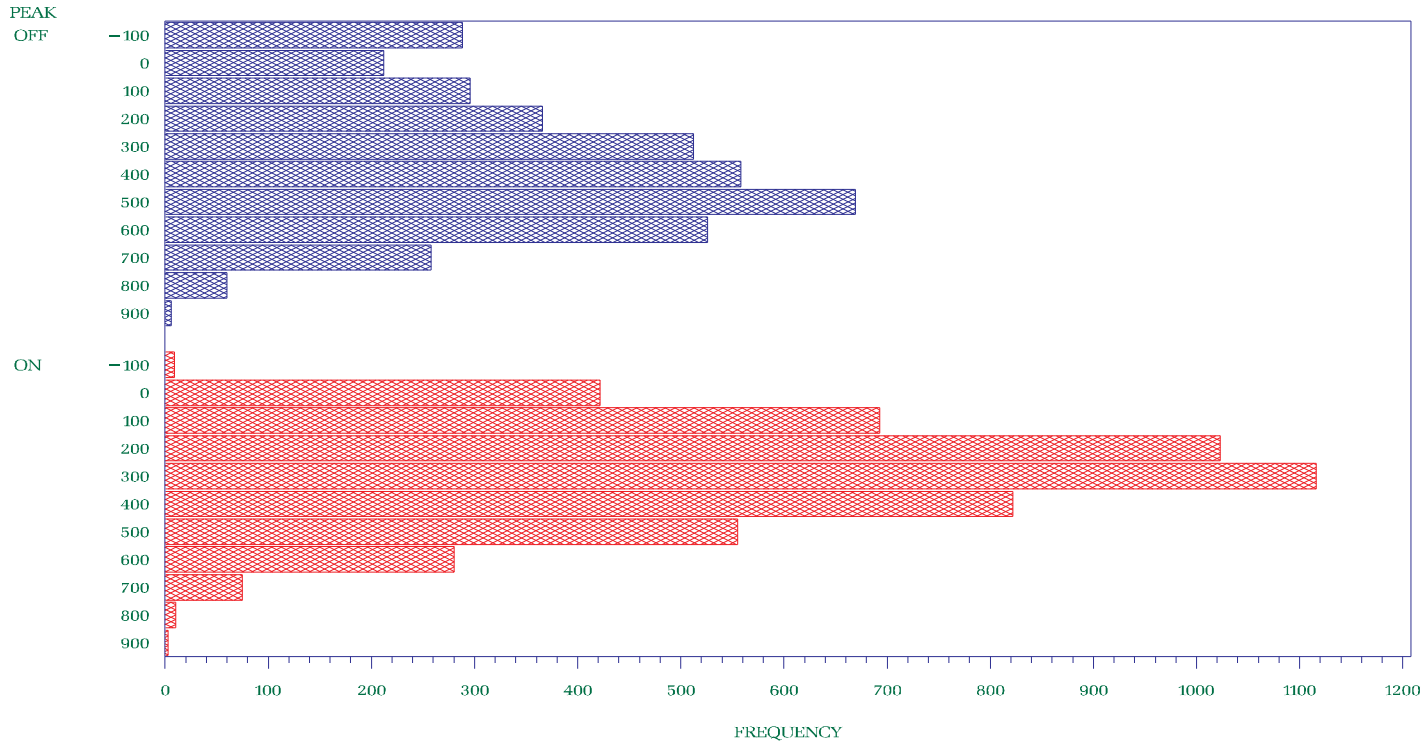


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

Post–Contingency Margin to Central East Limit

Minimum of 3 Most Limiting Voltage Collapse Limits

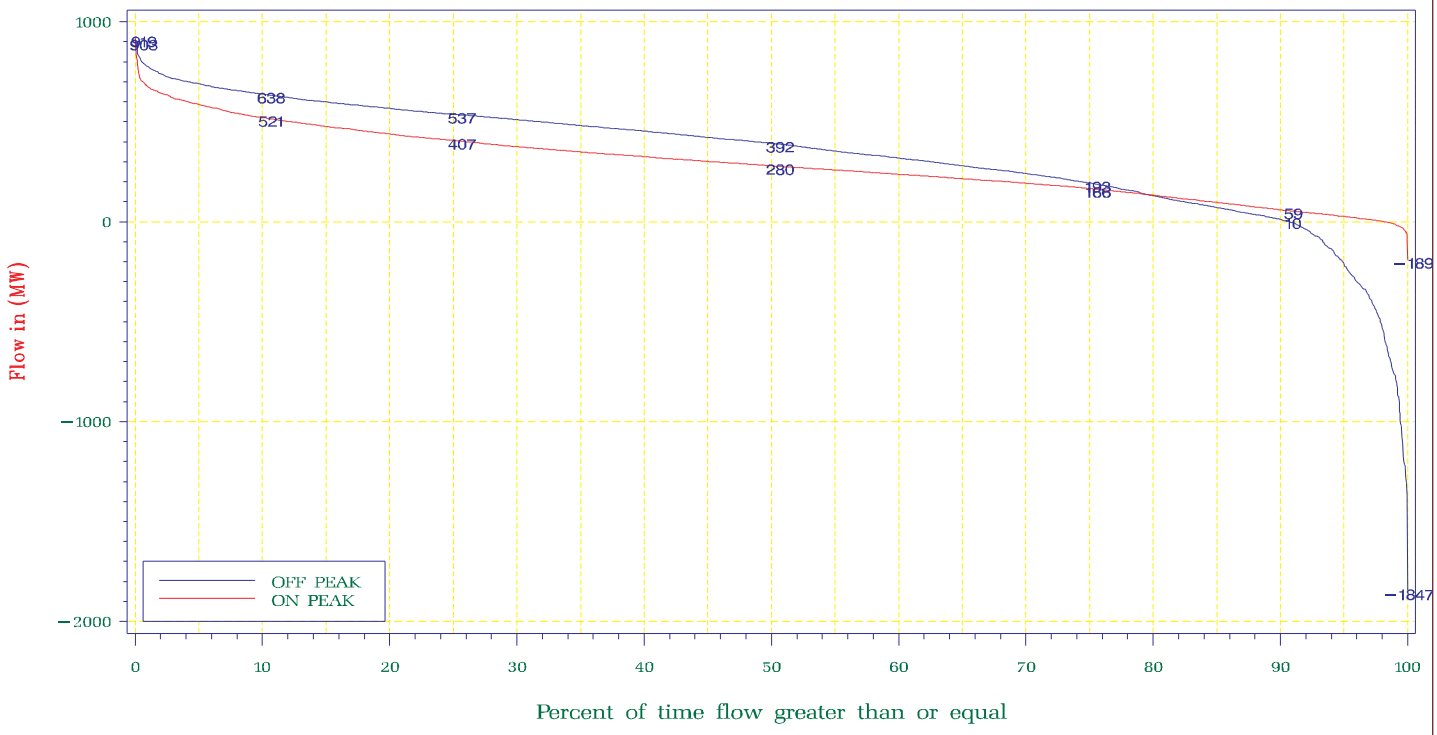


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

Post–Contingency Margin to Central East Limit

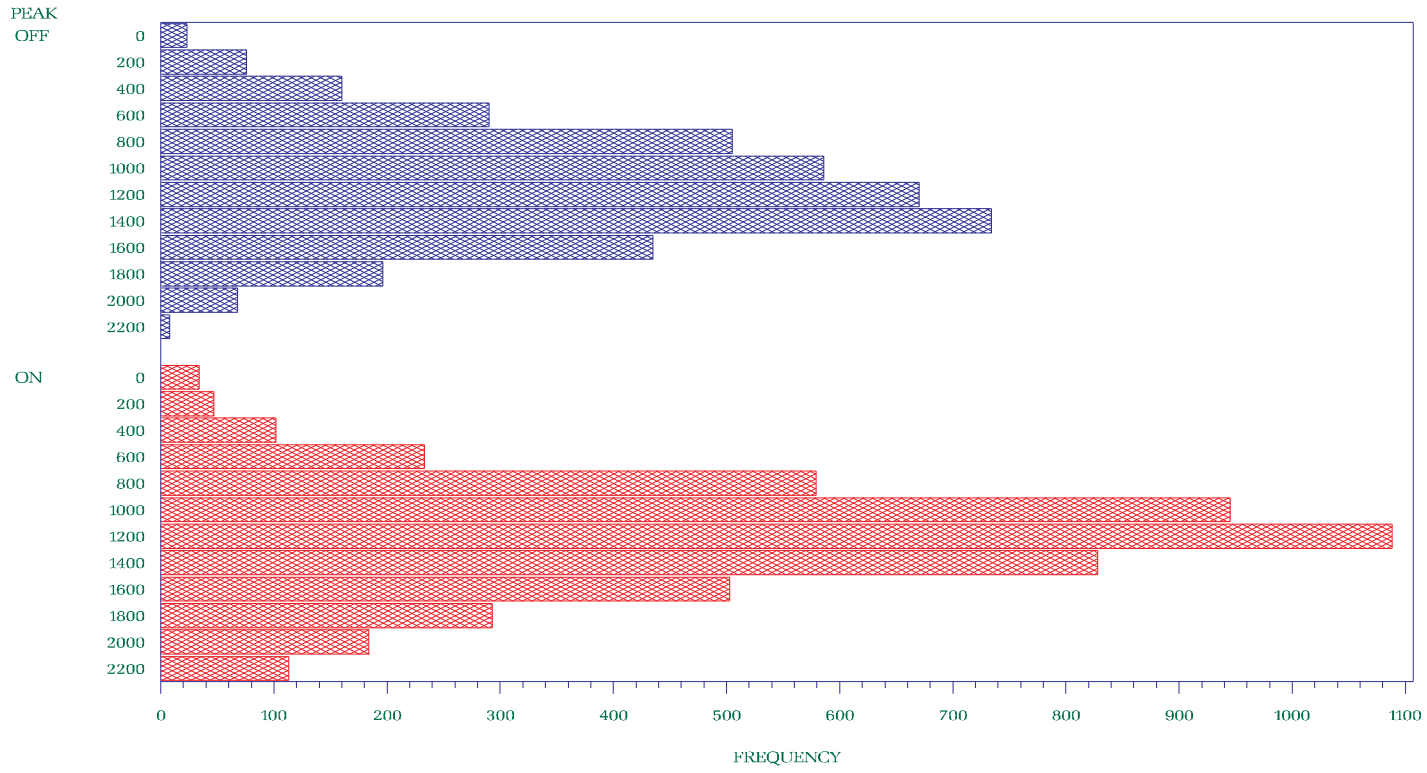
Minimum of 3 Most Limiting Voltage Collapse Limits



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

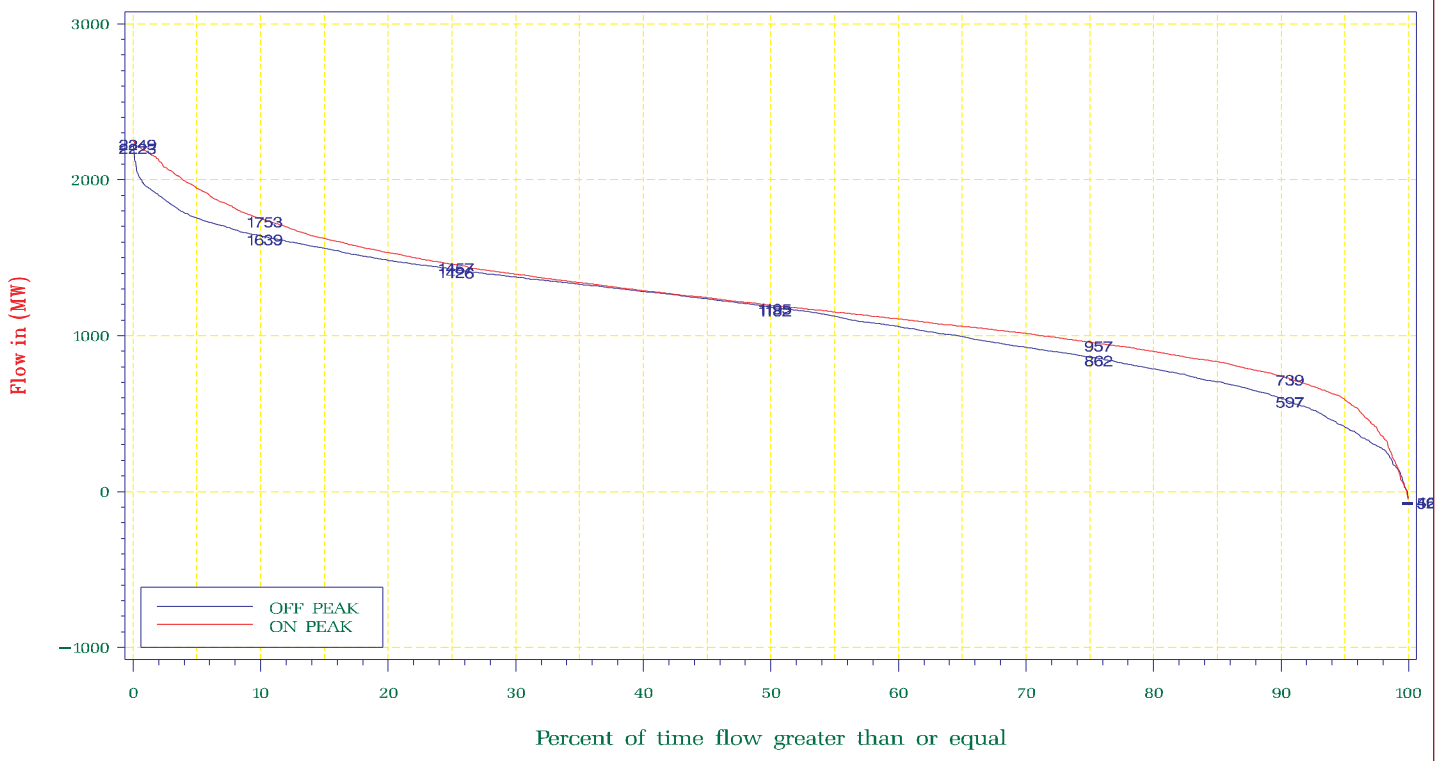
Margin to West Central Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

Margin to West Central Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

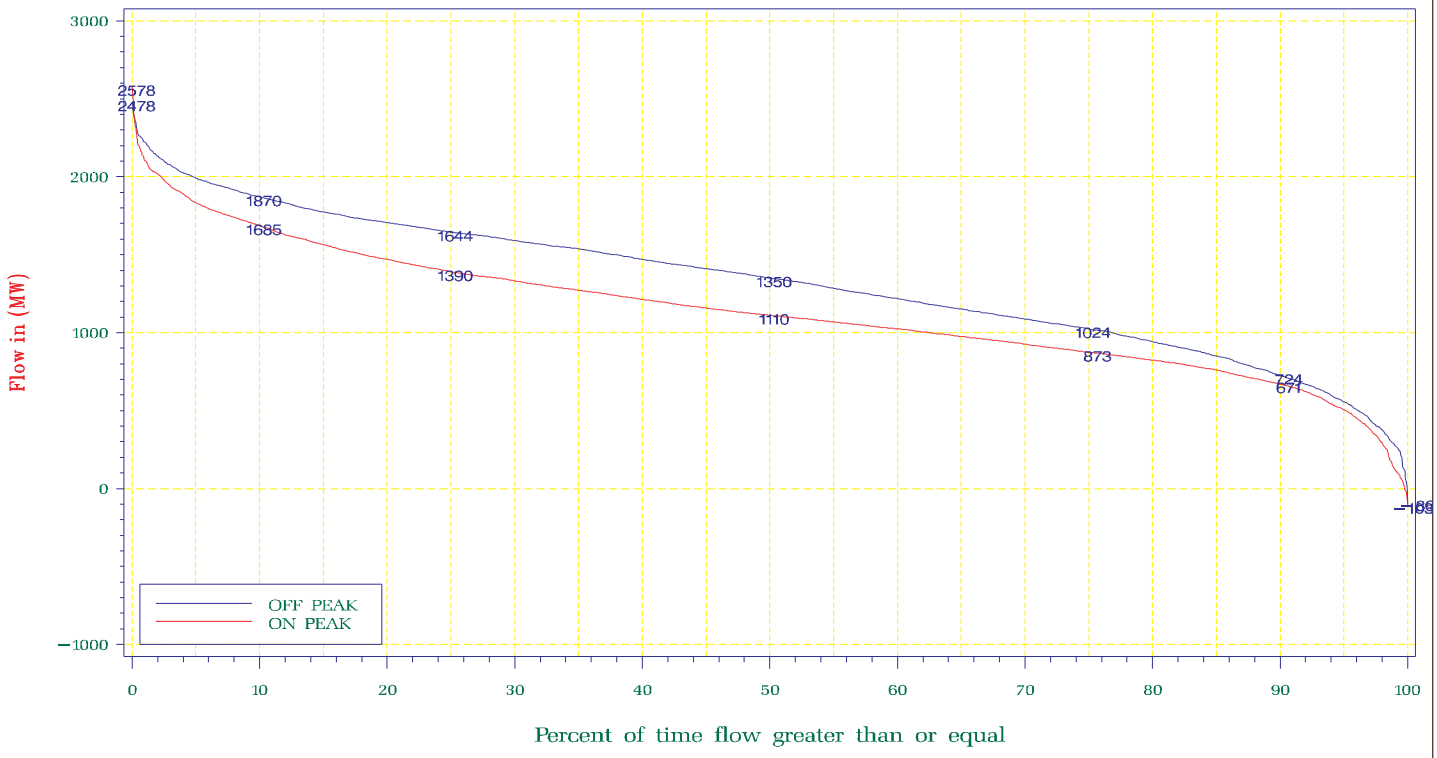
NYISO Frequency Interface Flow For January – December 2002

Margin to UPNY Con Ed Limit

OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

Margin to Dysinger East Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

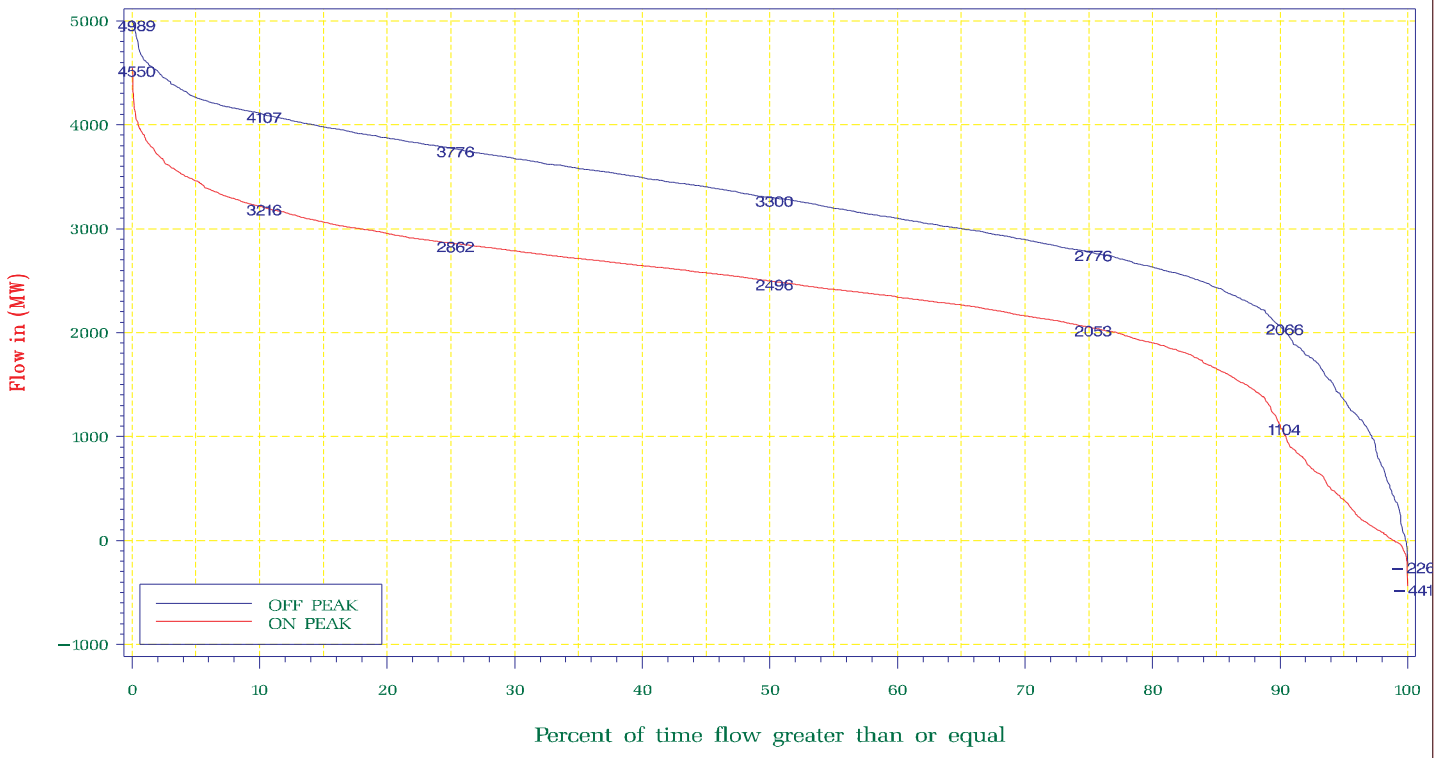
NYISO Frequency Interface Flow For January – December 2002

Margin to Sprainbrook/Dunwoodie Limit

OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

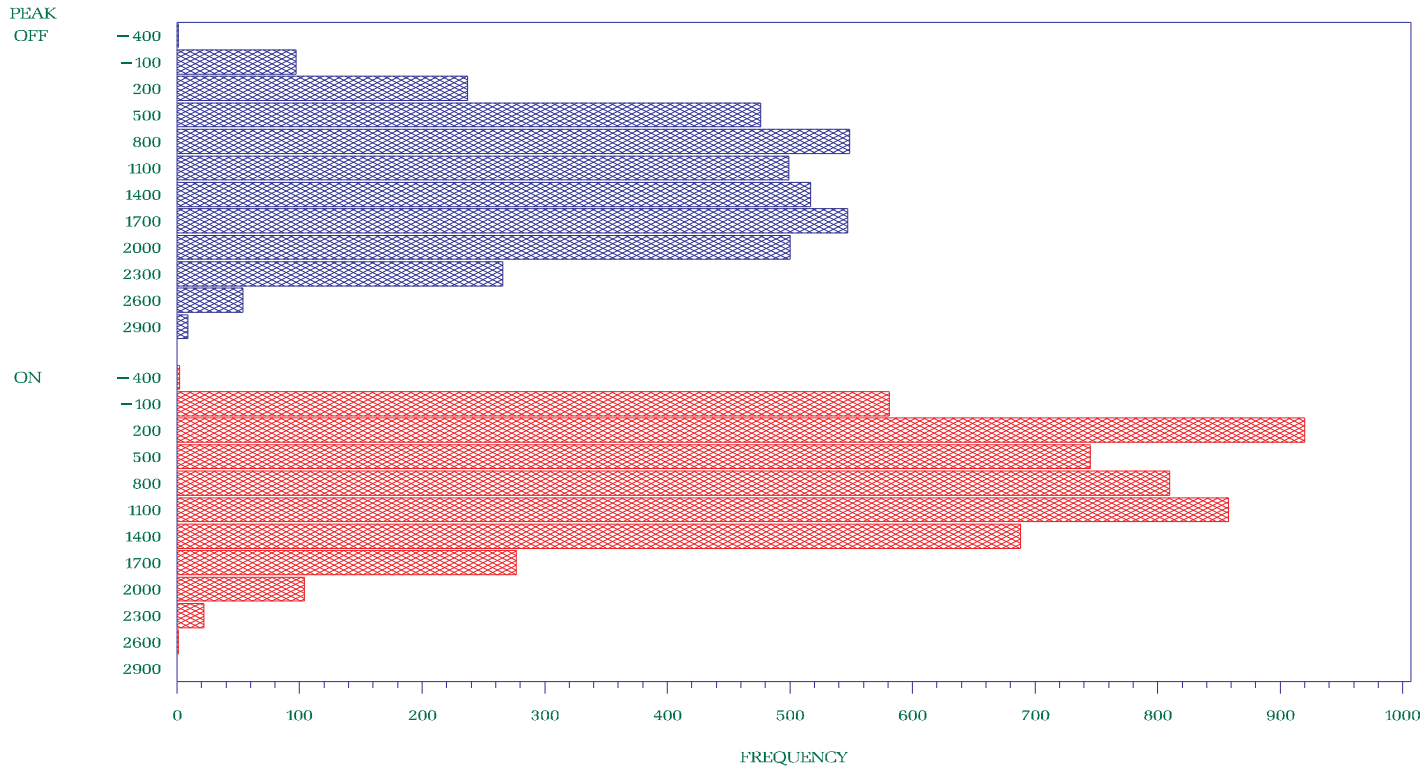
Margin to UPNY Con Ed Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

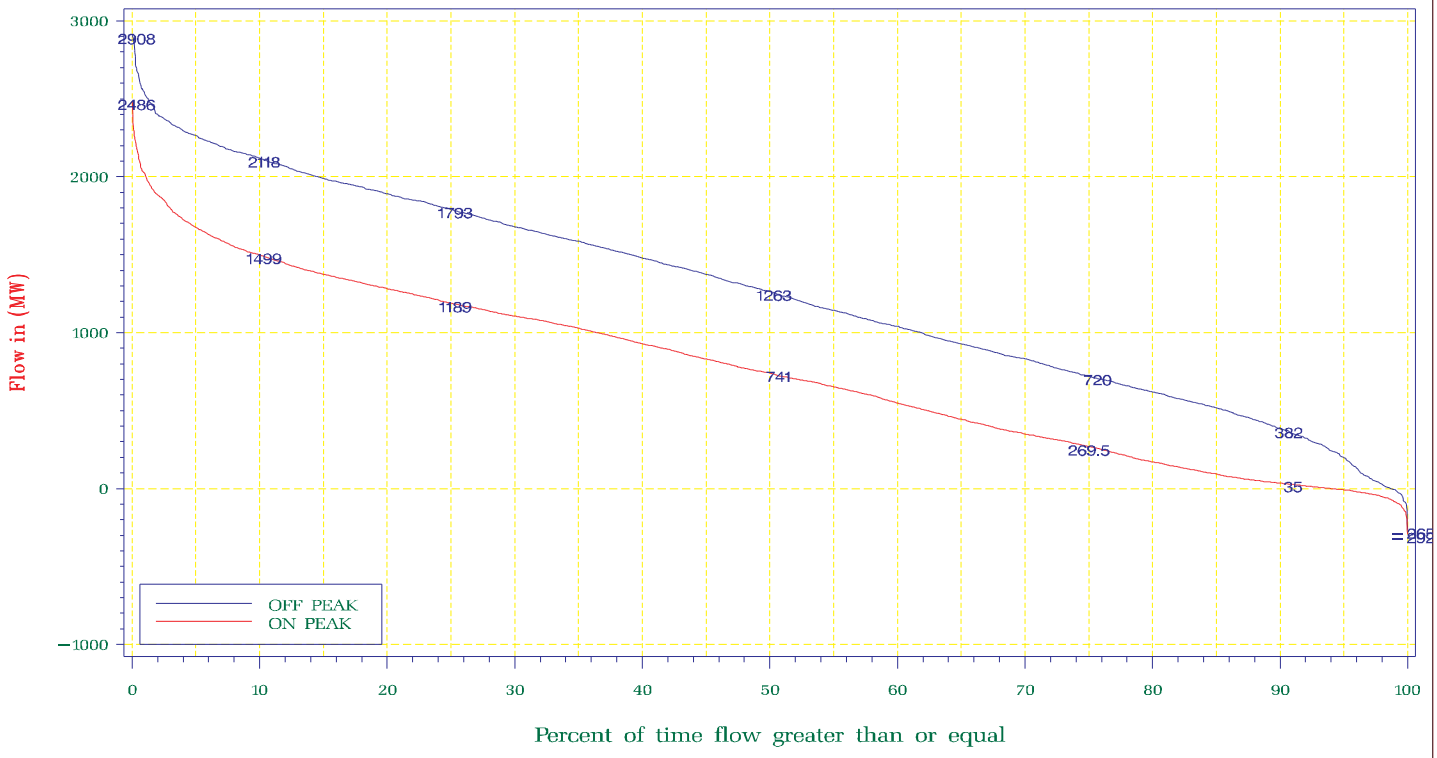
Margin to Sprainbrook/Dunwoodie Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

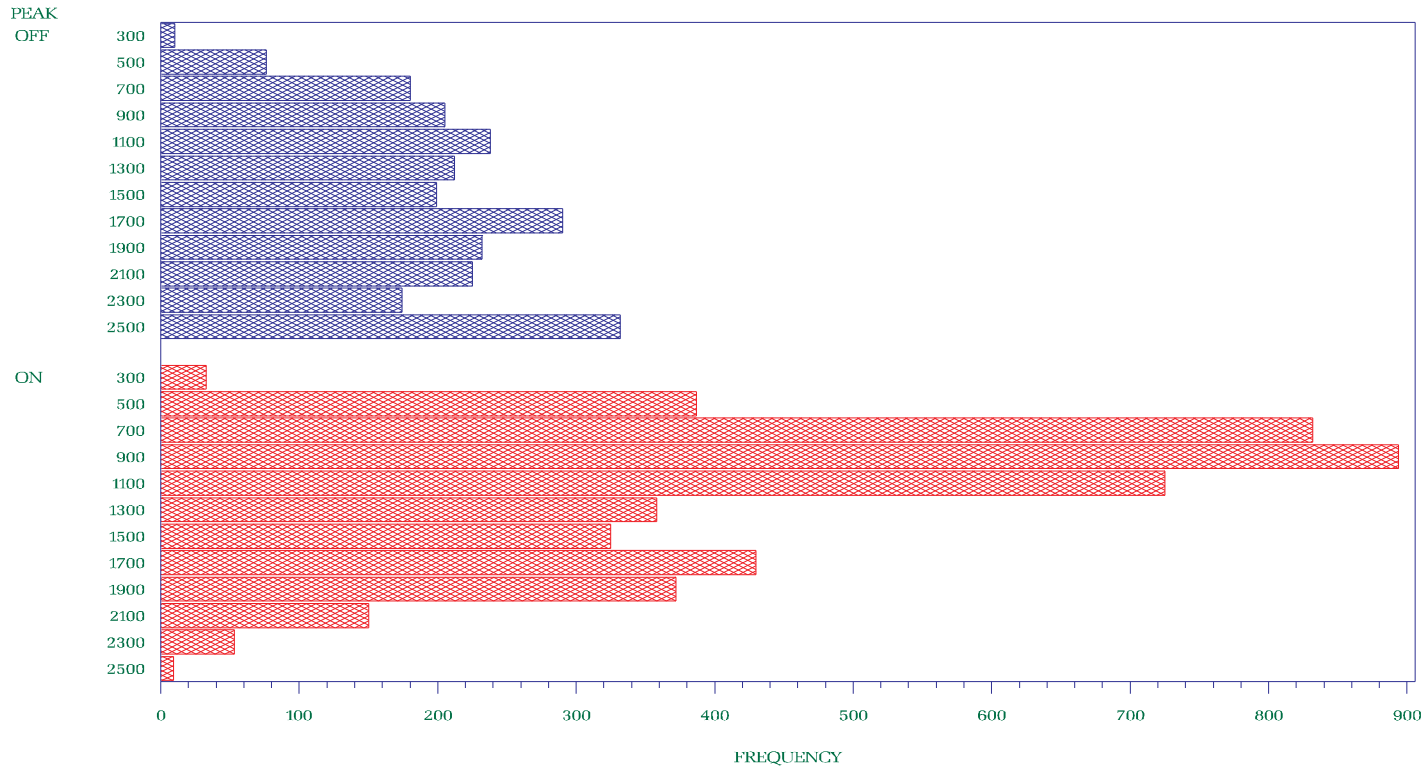
Margin to Sprainbrook/Dunwoodie Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

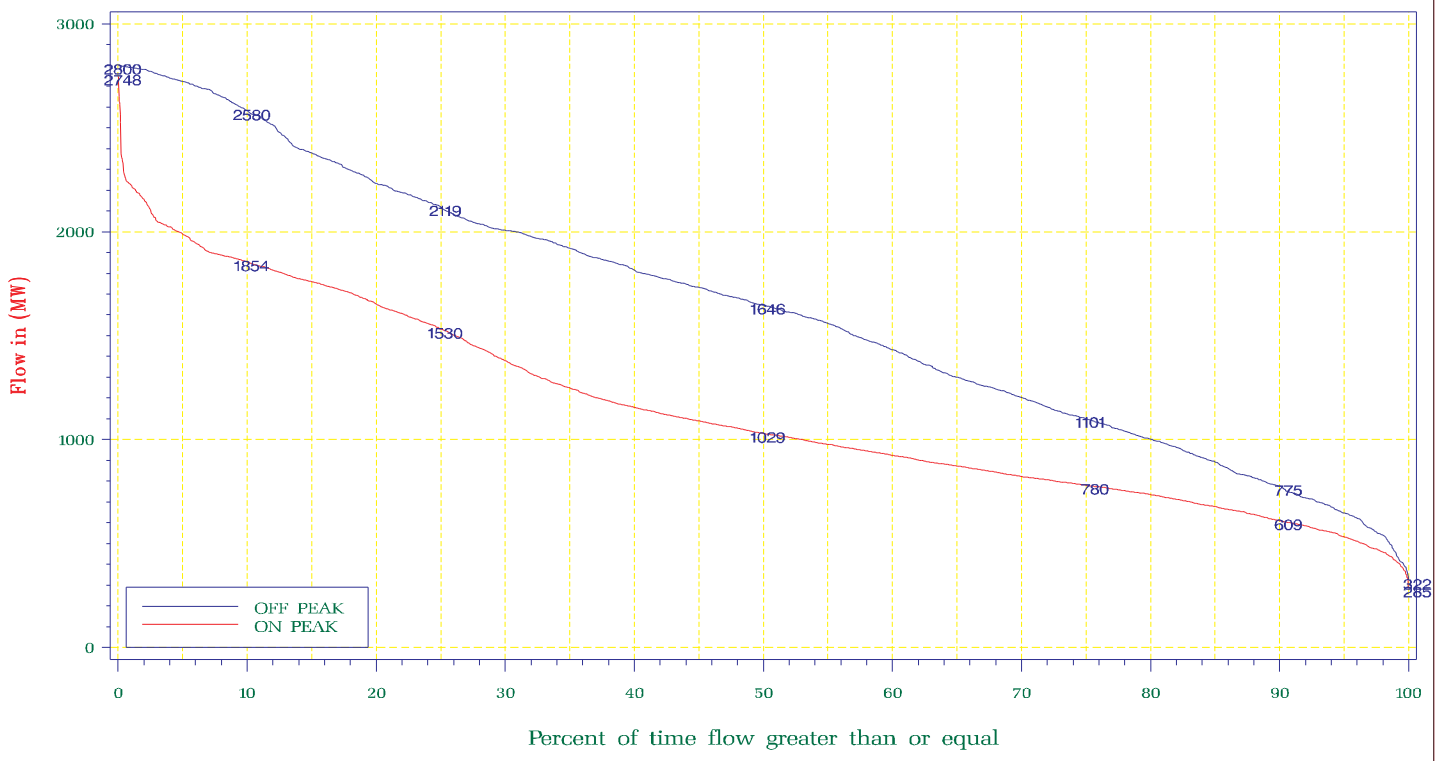
Margin to Moses South Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

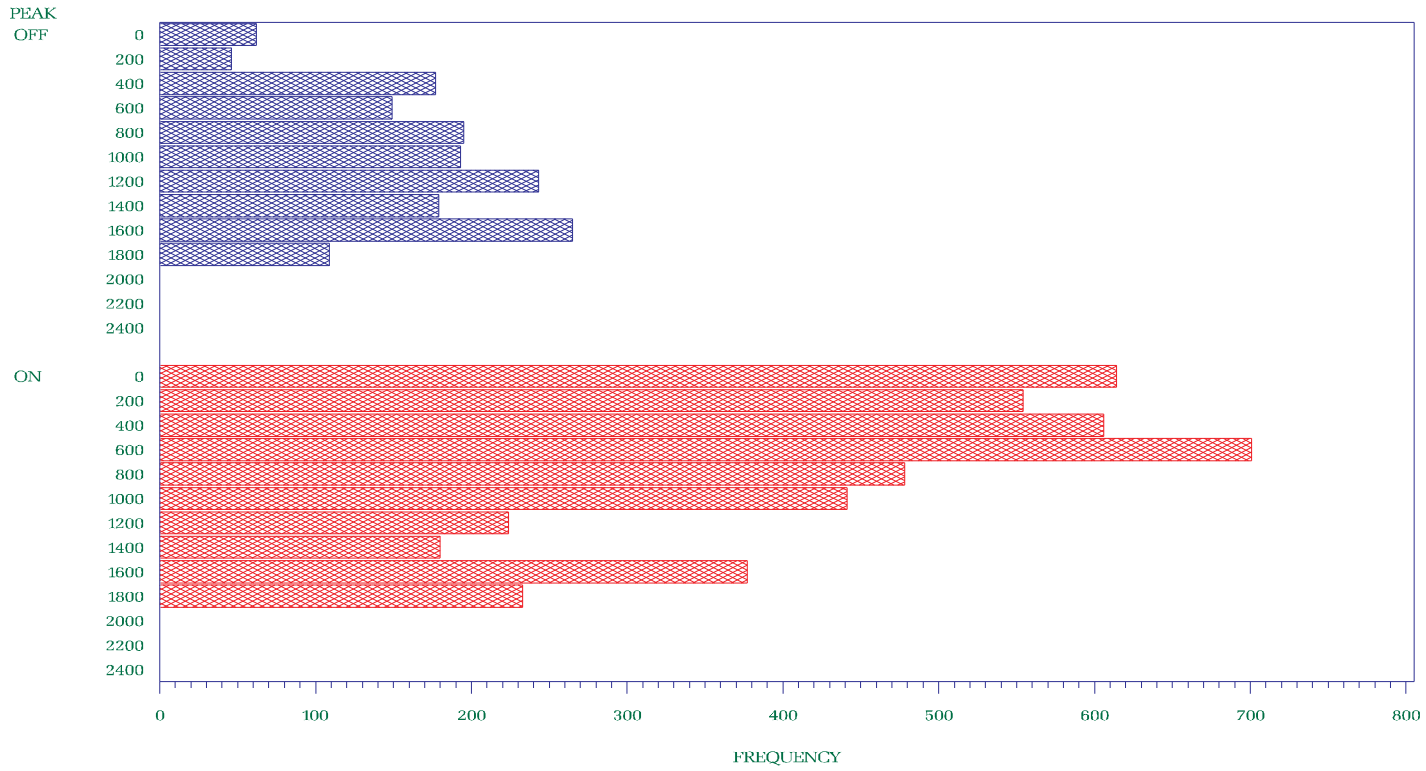
Margin to Moses South Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

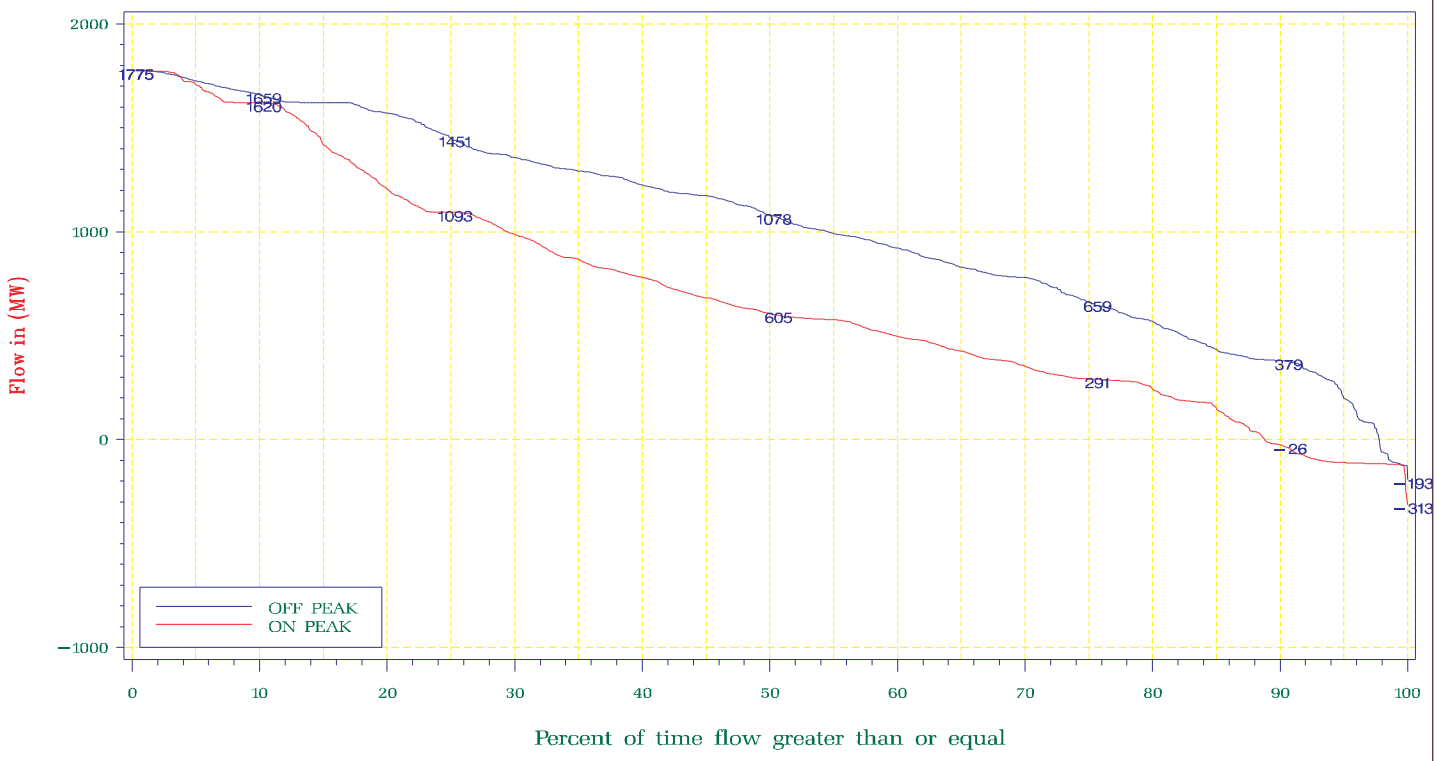
Margin to TE–NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

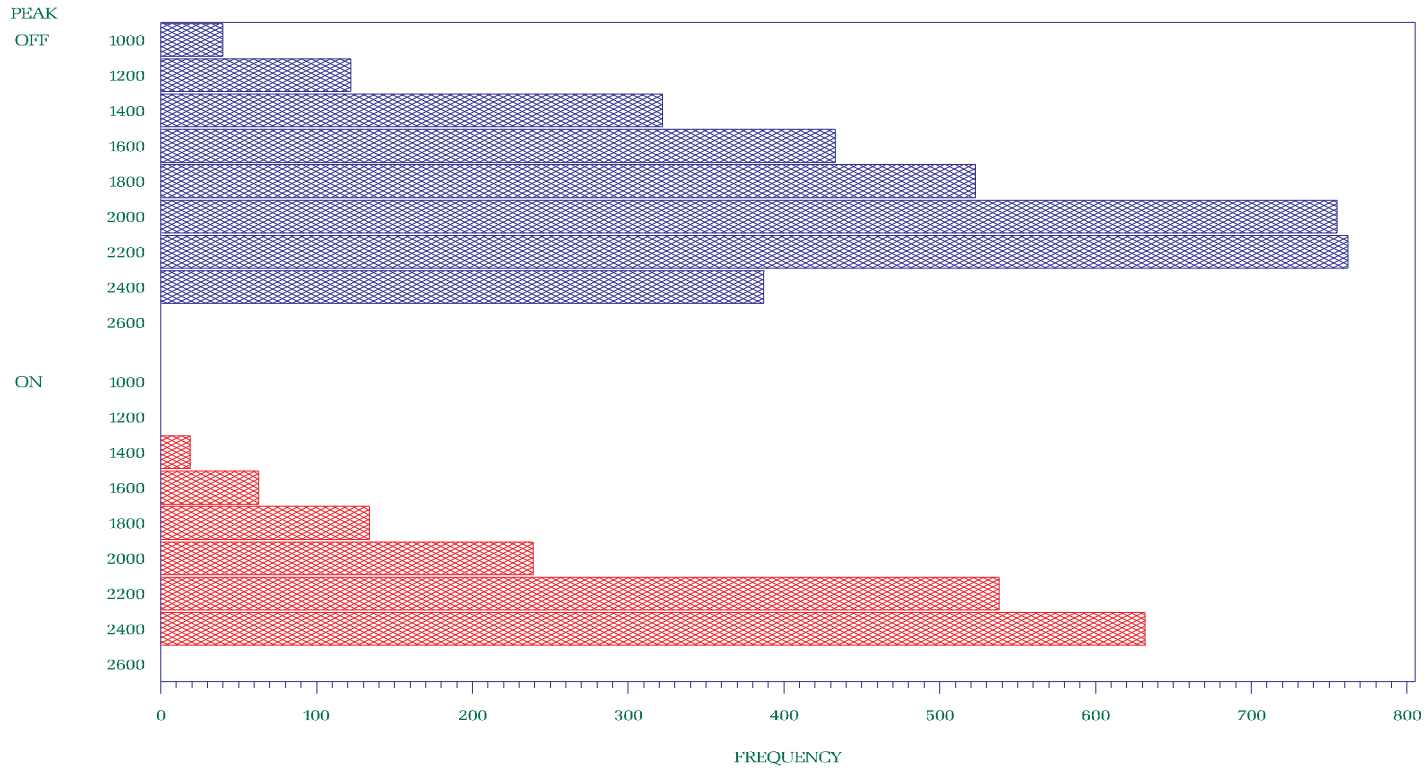
Margin to TE–NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

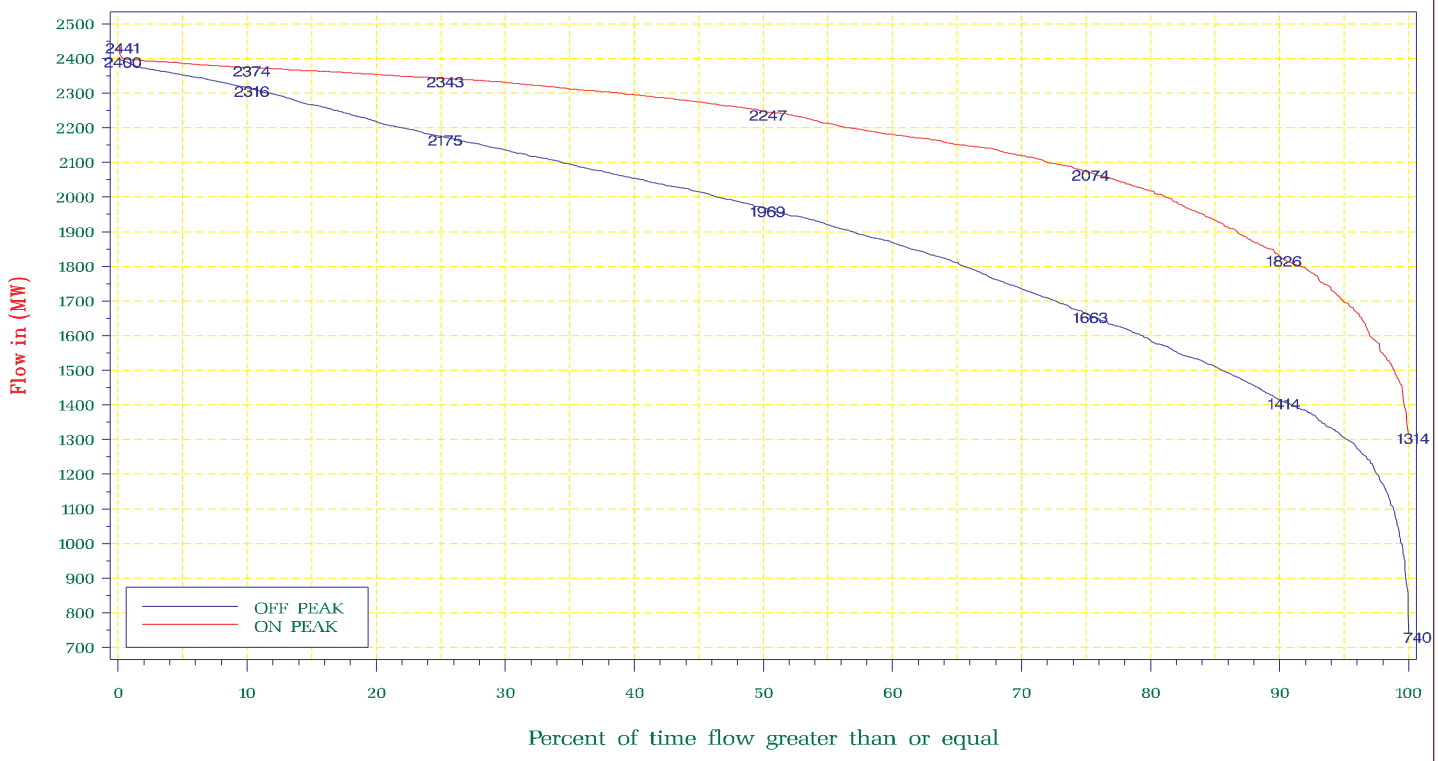
Margin to Ontario – NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

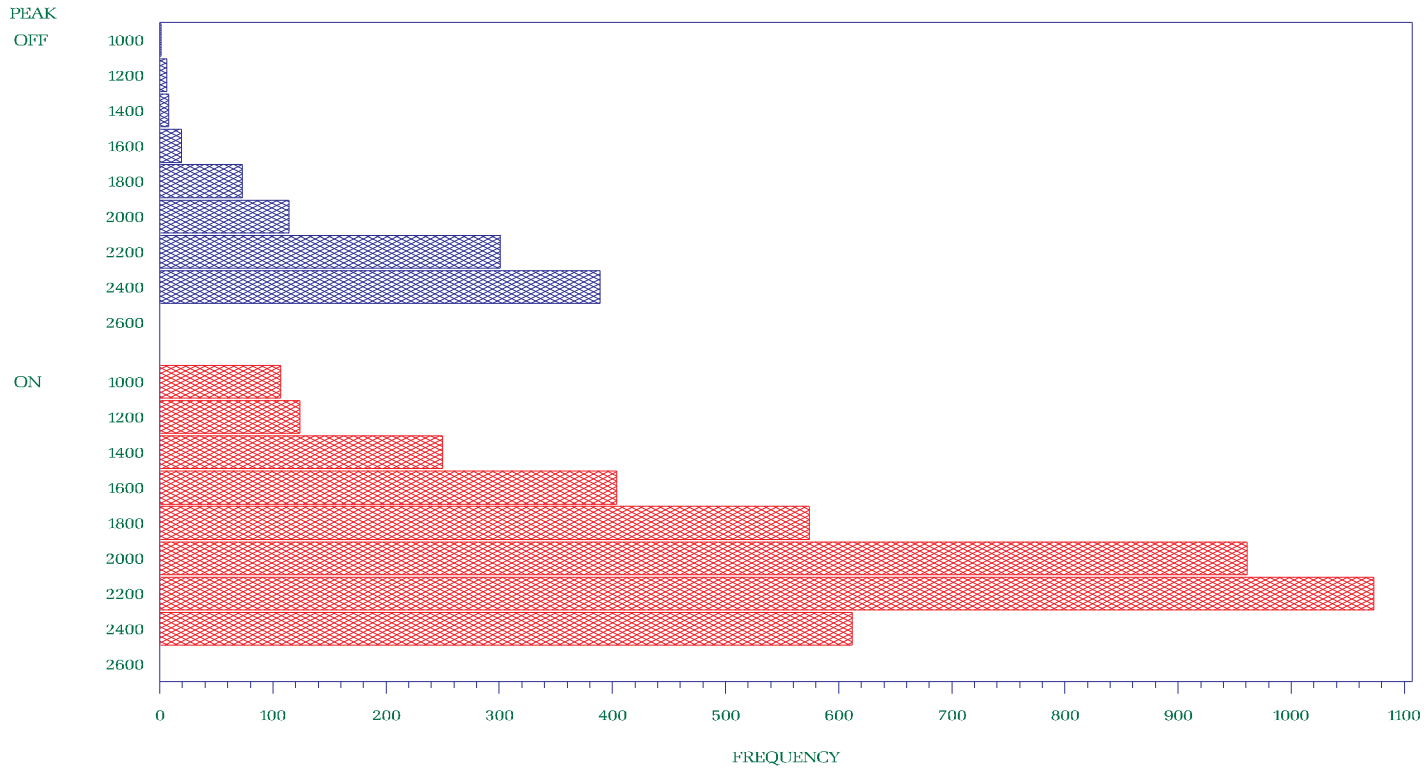
Margin to Ontario – NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

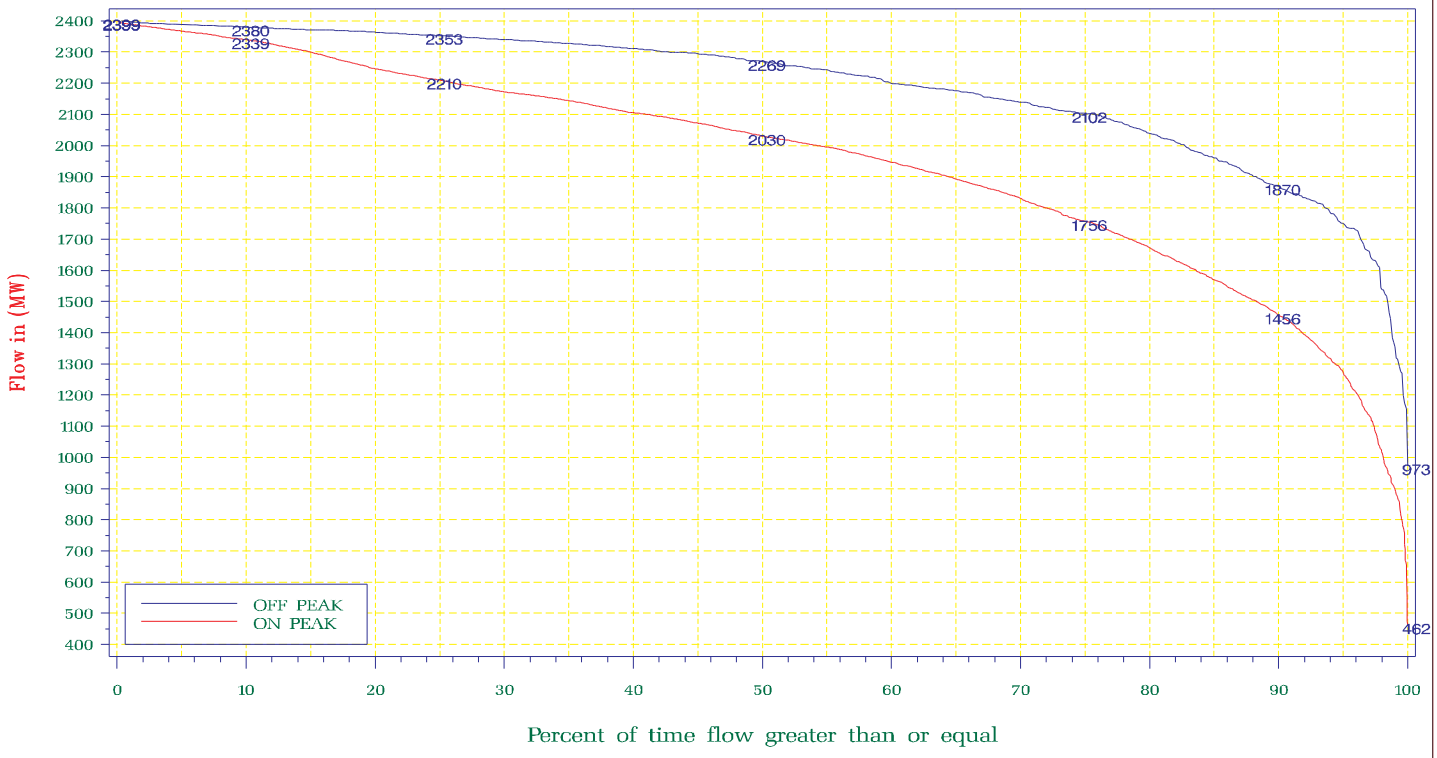
Margin to NY–Ontario Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

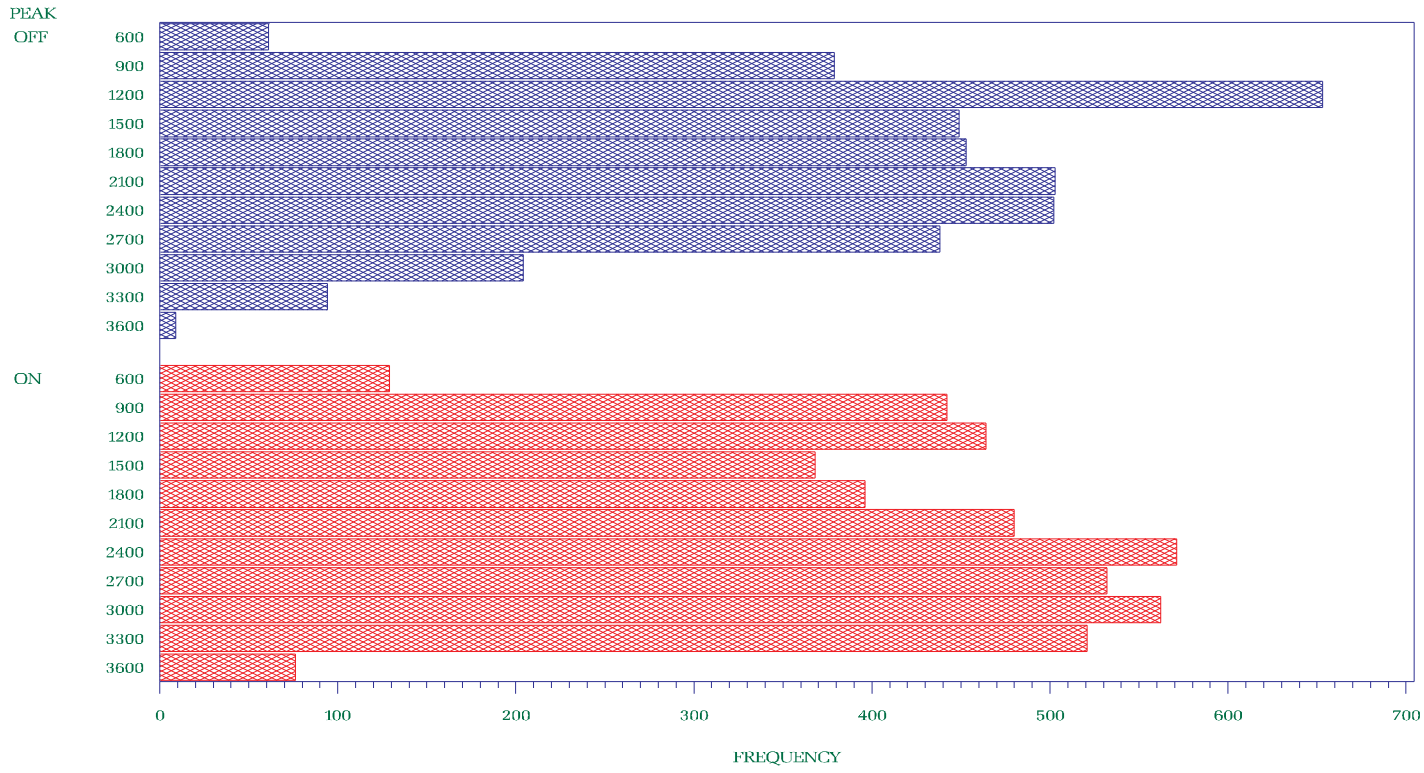
Margin to NY–Ontario Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

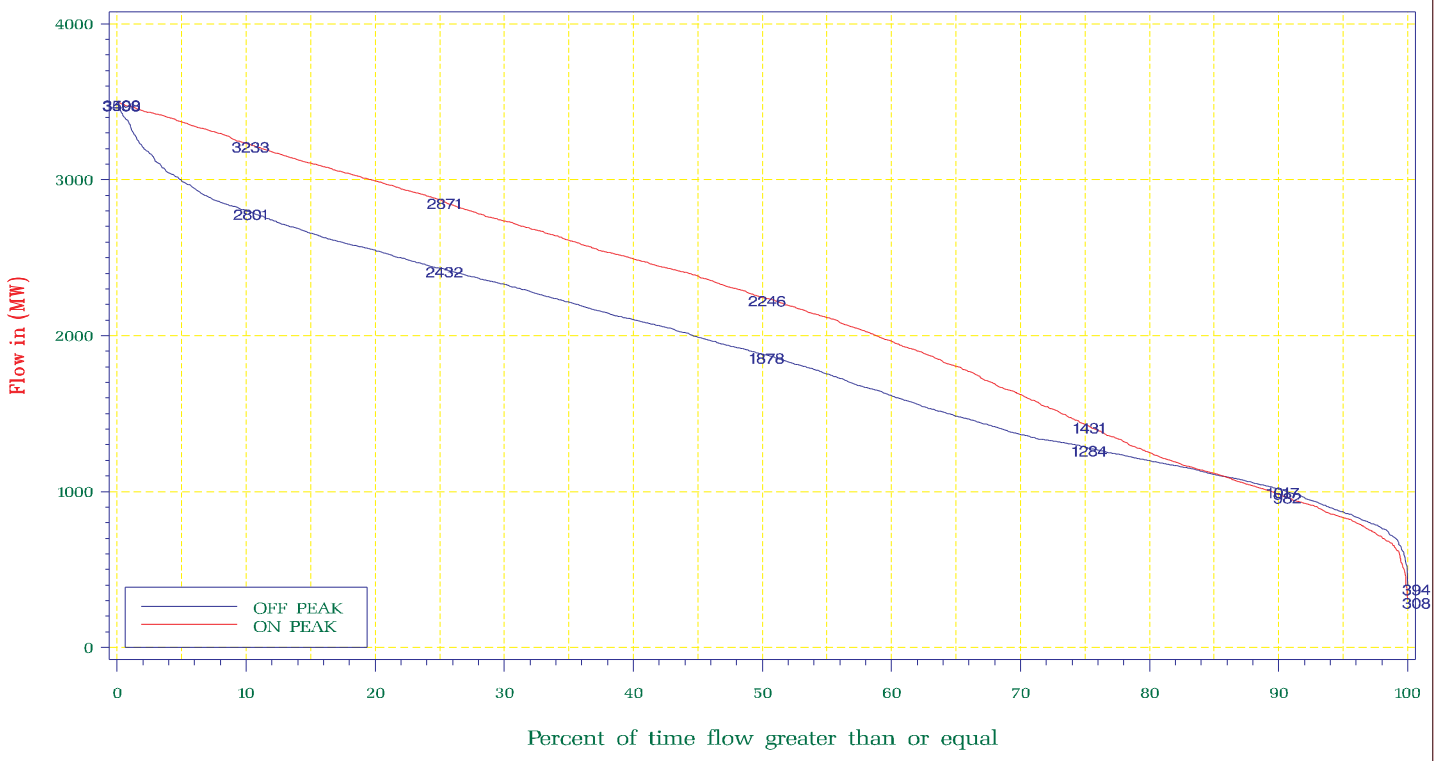
Margin to PJM – NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

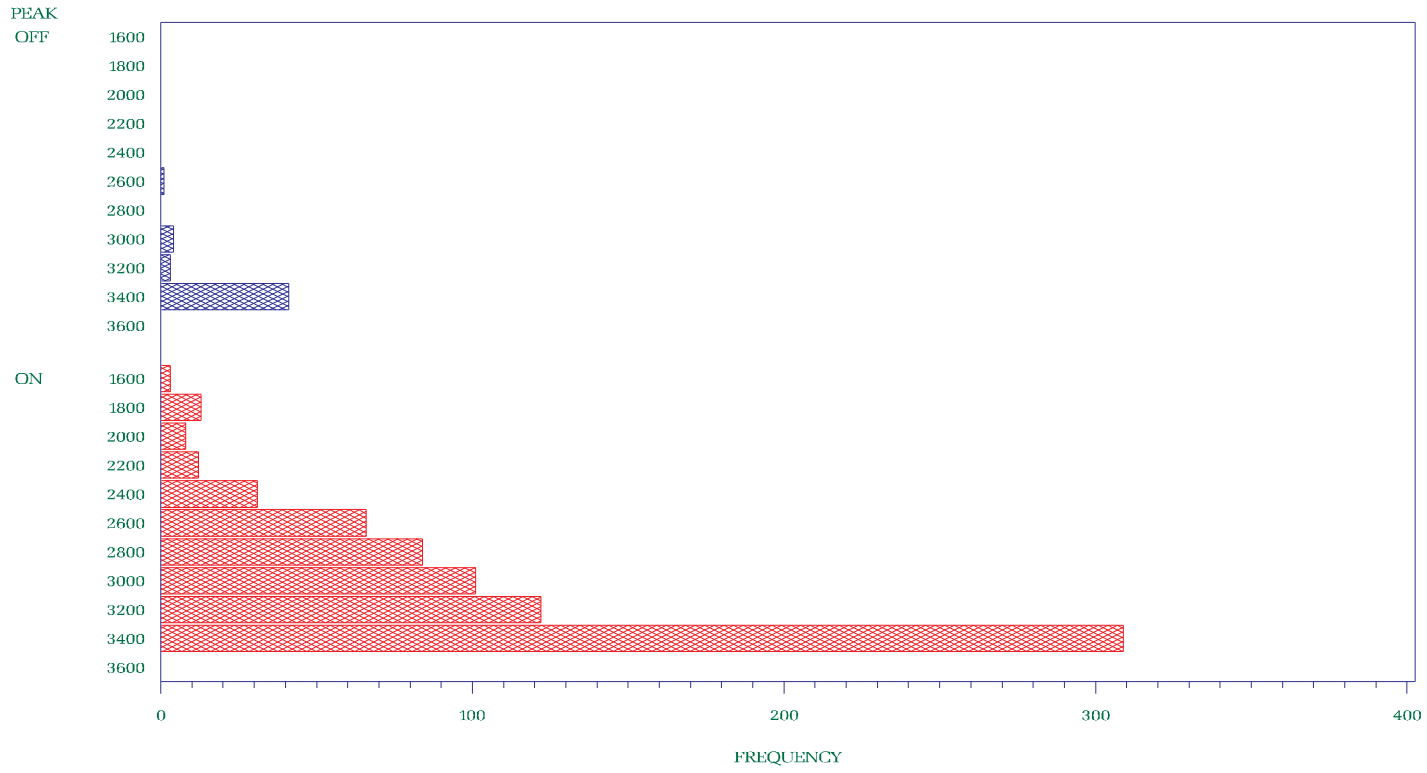
Margin to PJM – NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

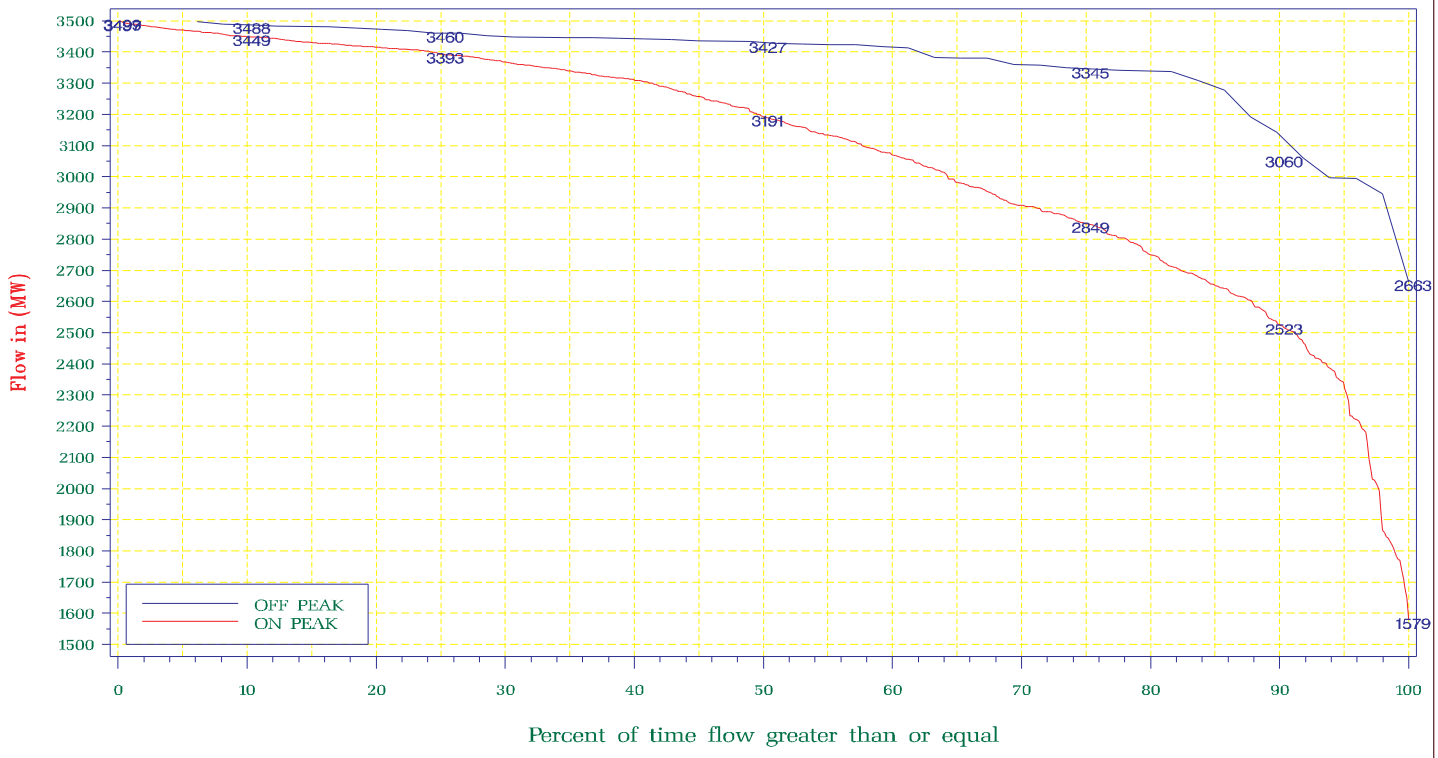
Margin to NY – PJM Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

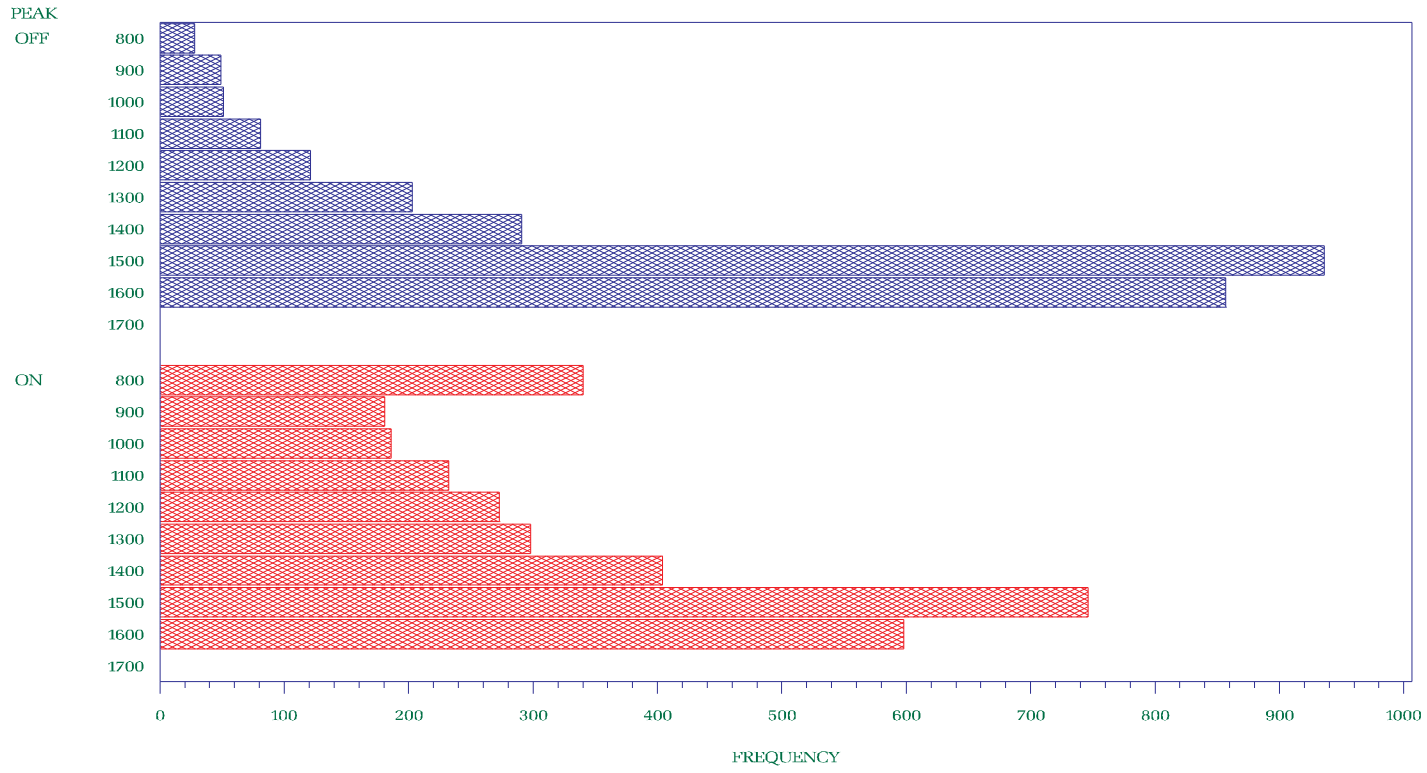
Margin to NY – PJM Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

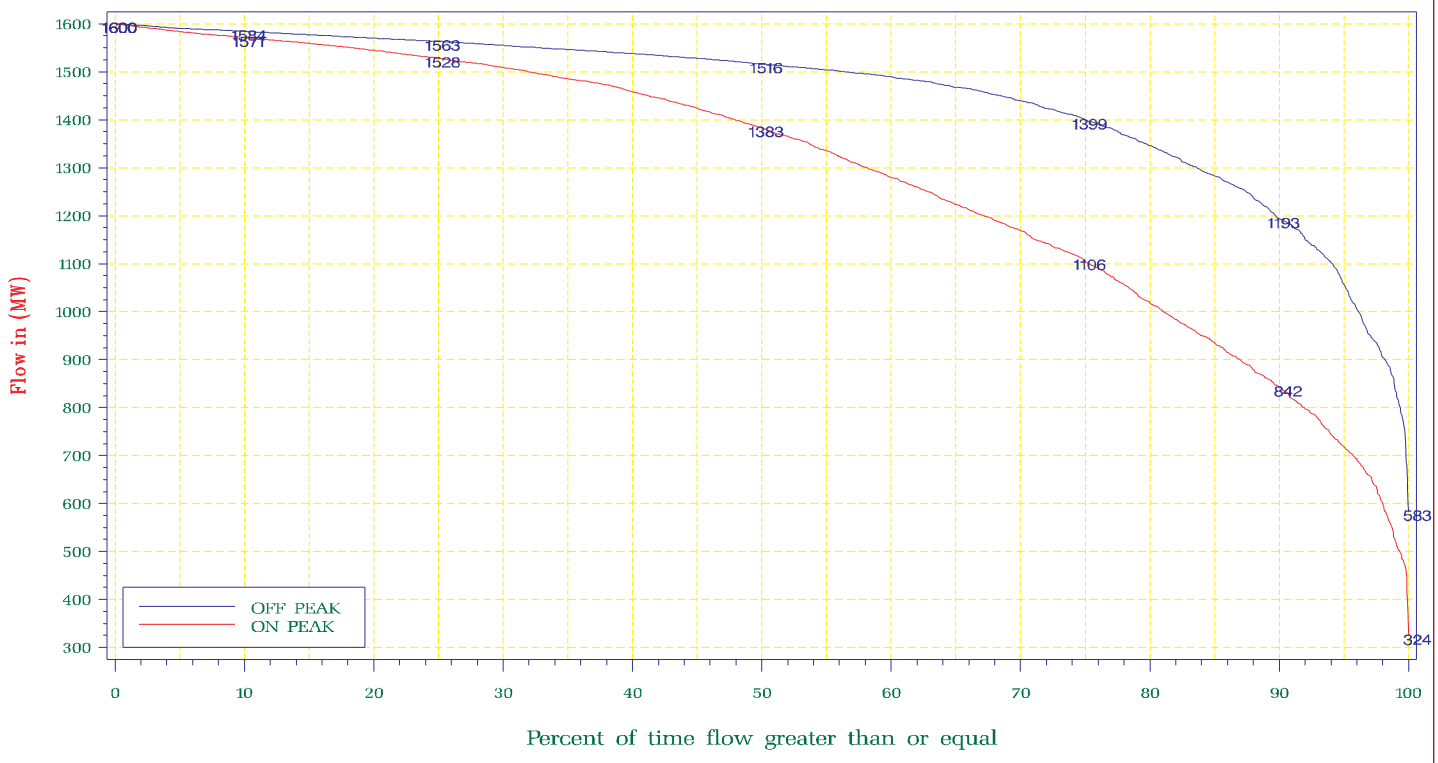
Margin to New England – NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

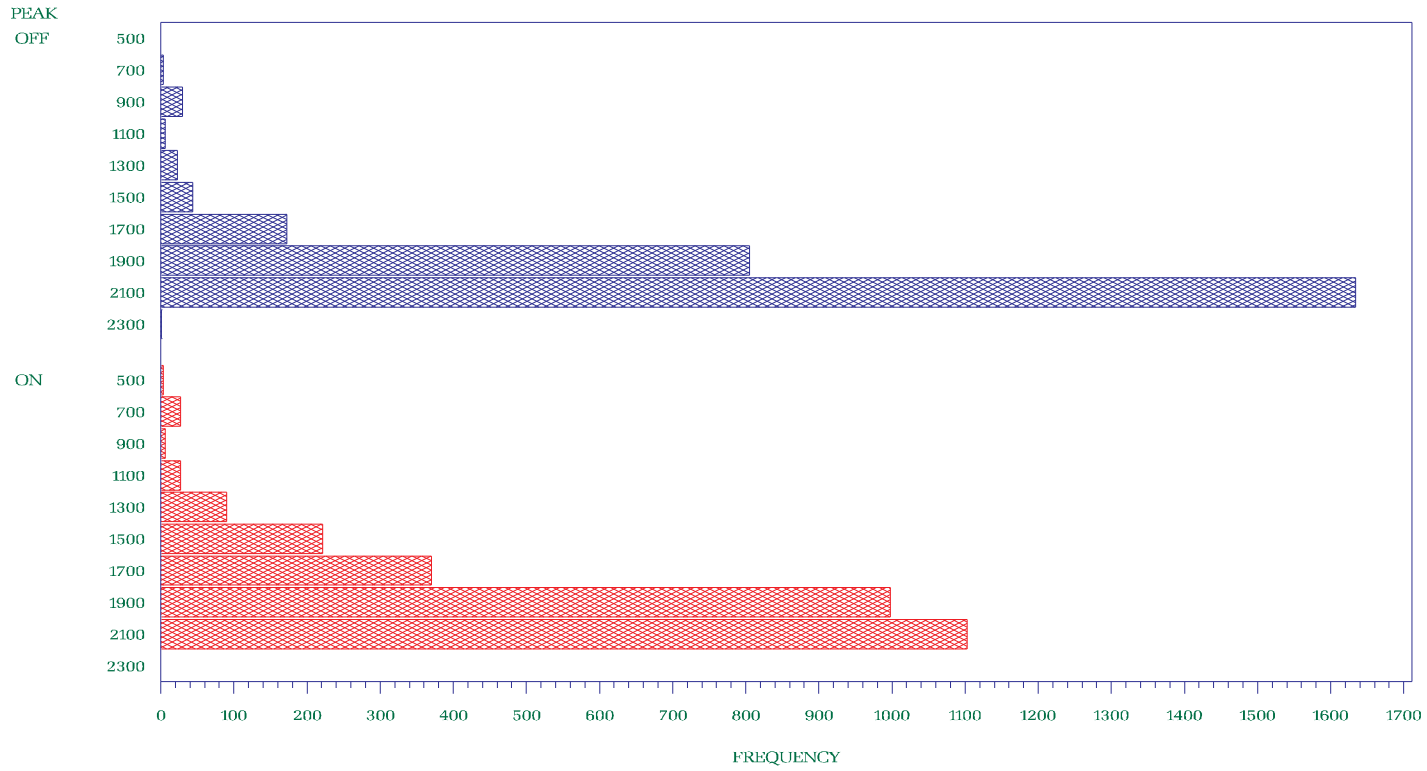
Margin to New England – NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

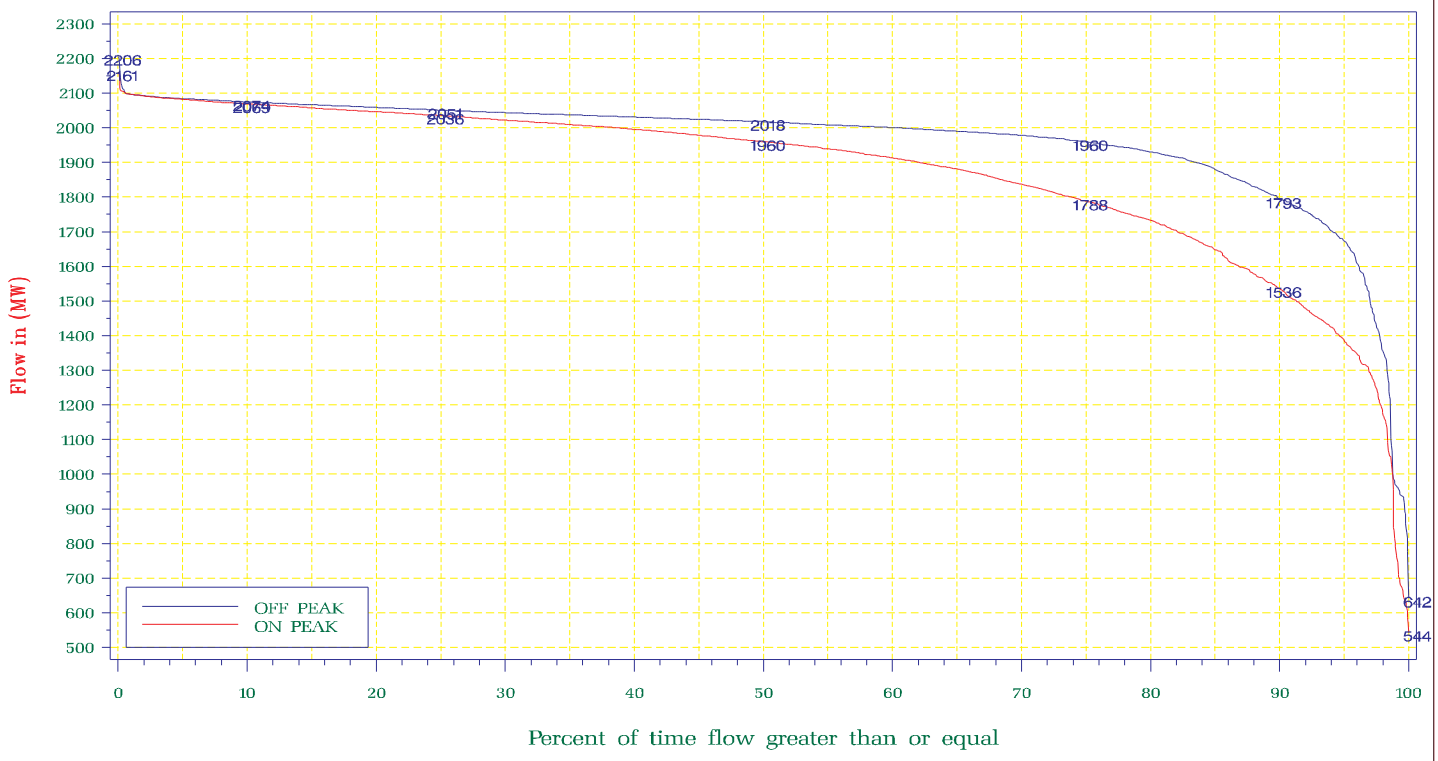
Margin to NY – New England Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

Margin to NY – New England Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

This page is intentionally left blank.

Appendix H – Interface Limits
On-peak vs. Off-Peak

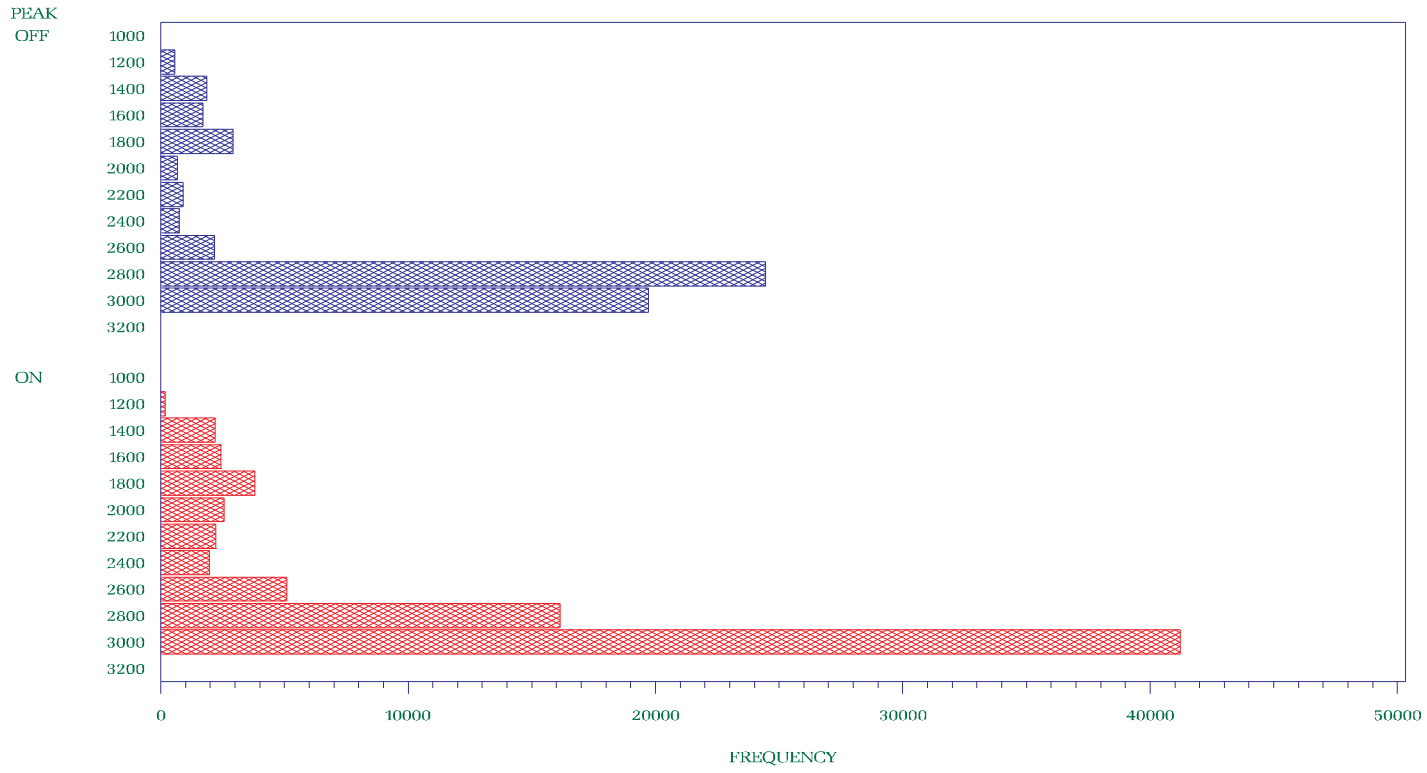
TABLE OF CONTENTS

Prepared by: Tu Minh Thi Nguyen

This page is intentionally left blank.

NYISO Frequency Interface Flow For January – December 2002

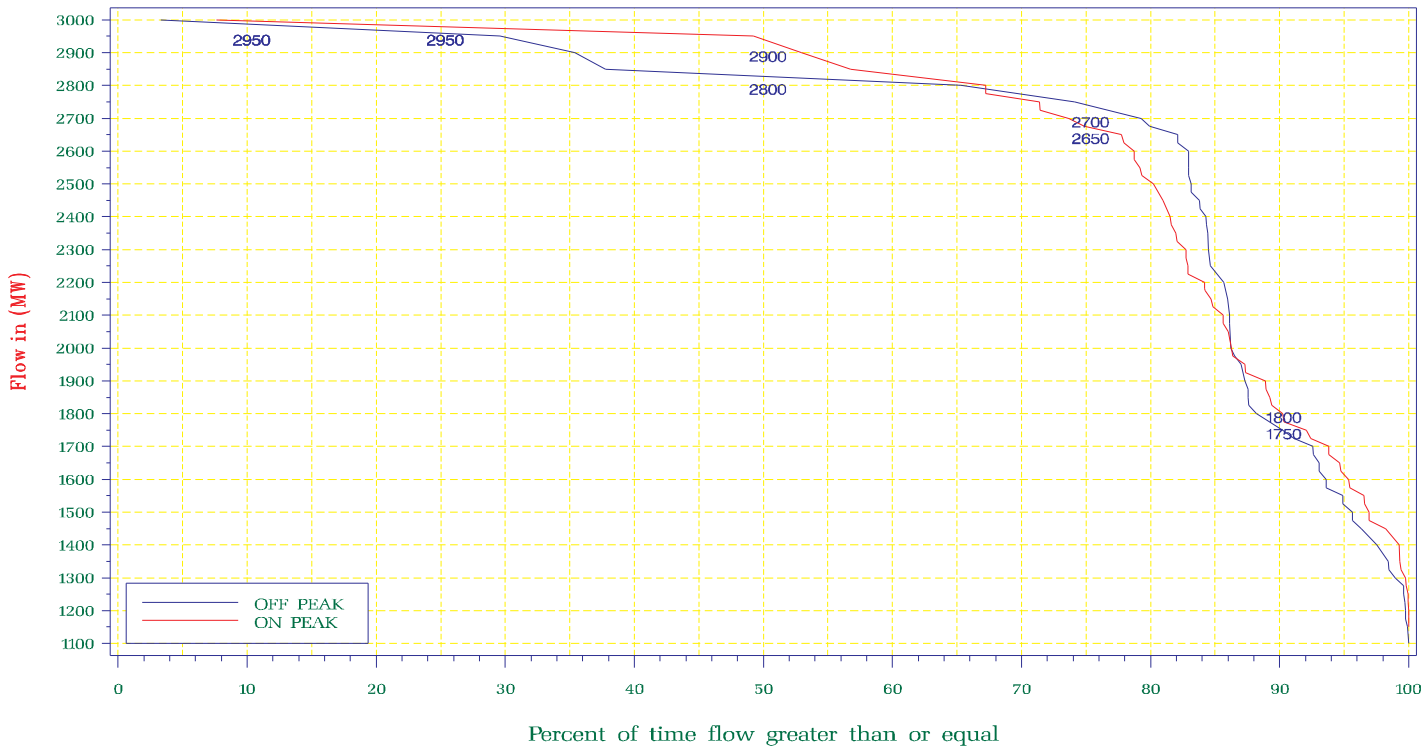
Central East Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

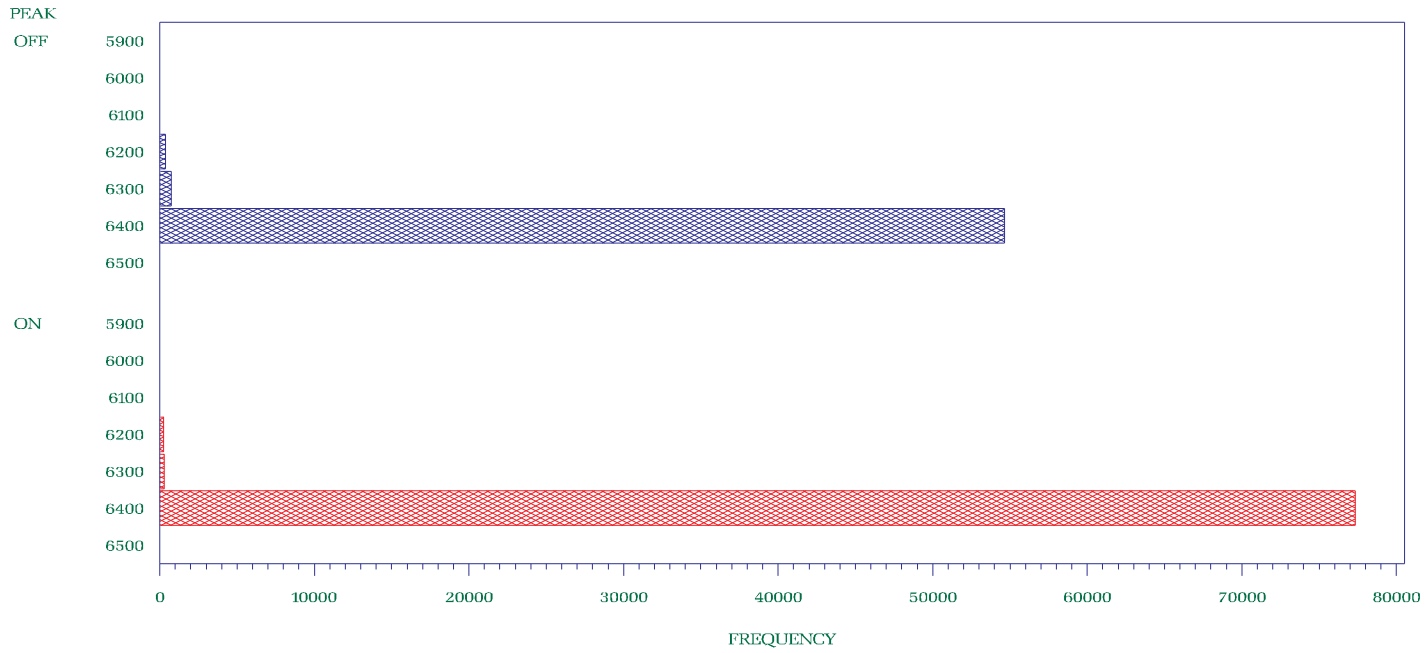
Central East Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

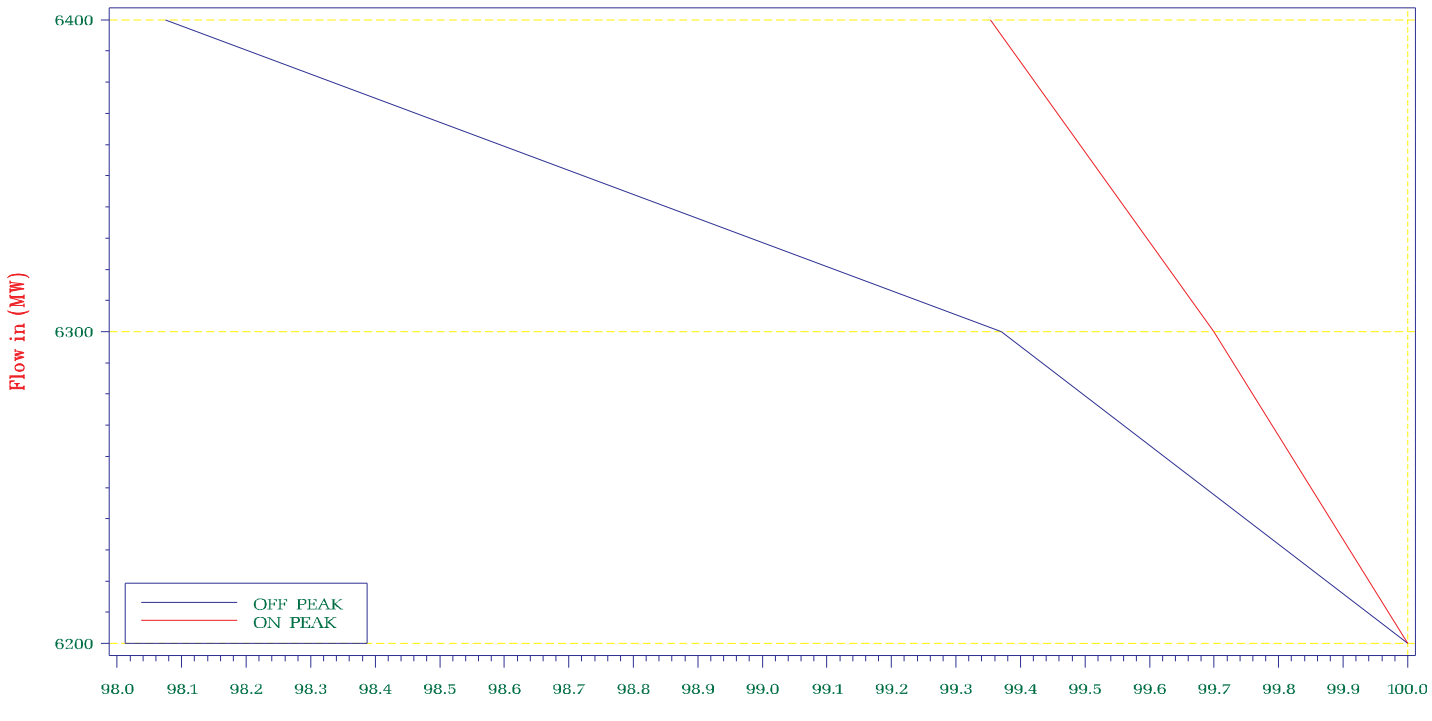
Total East Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

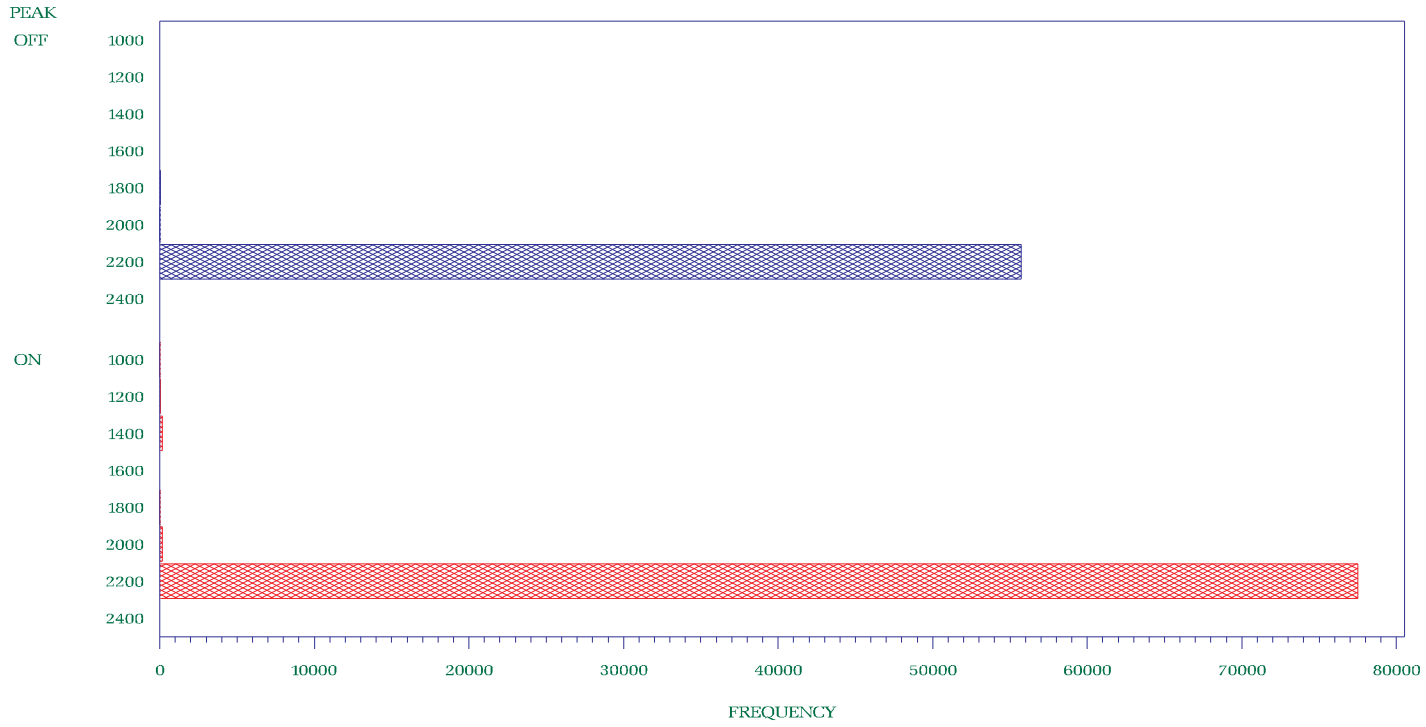
Total East Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

West Central Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

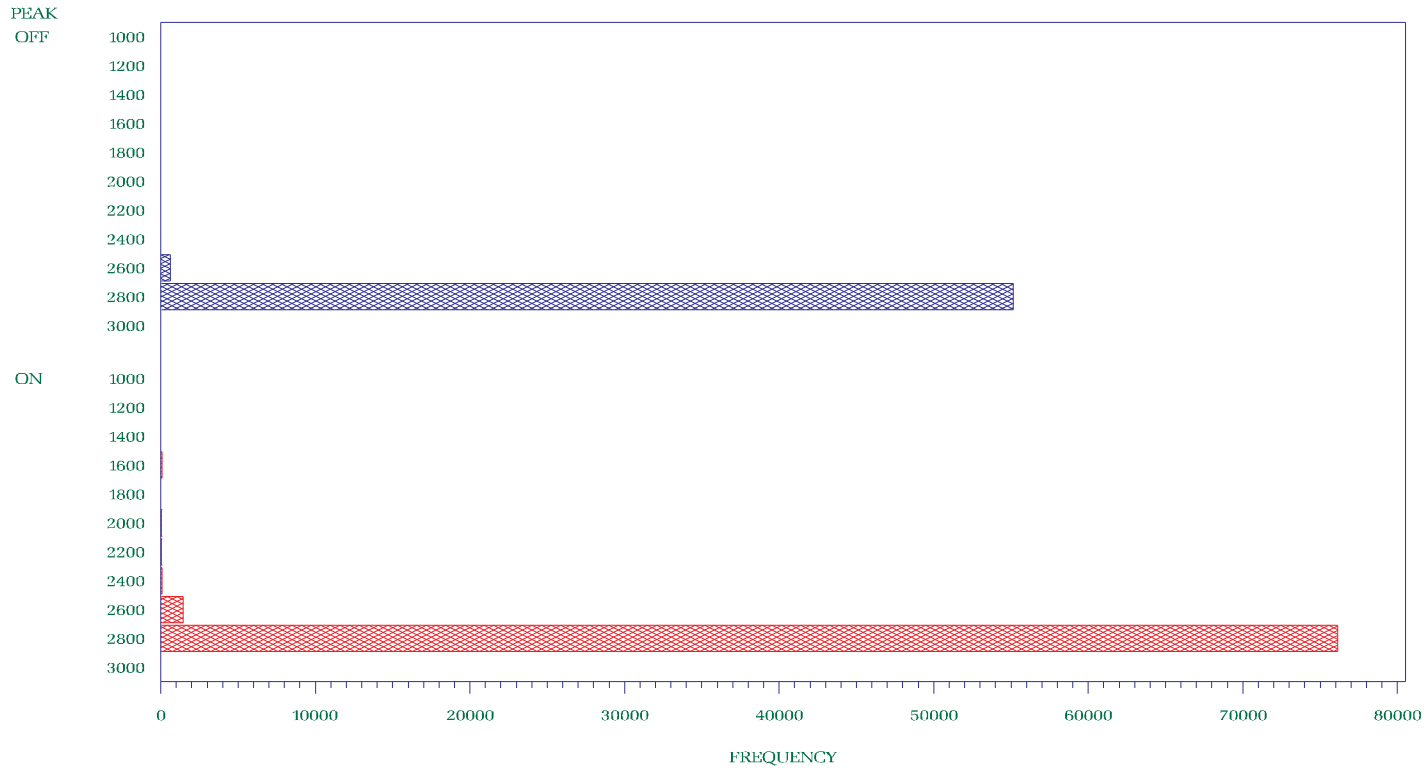
NYISO Percent of time Interface Flow For January – December 2002

West Central Limit

OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

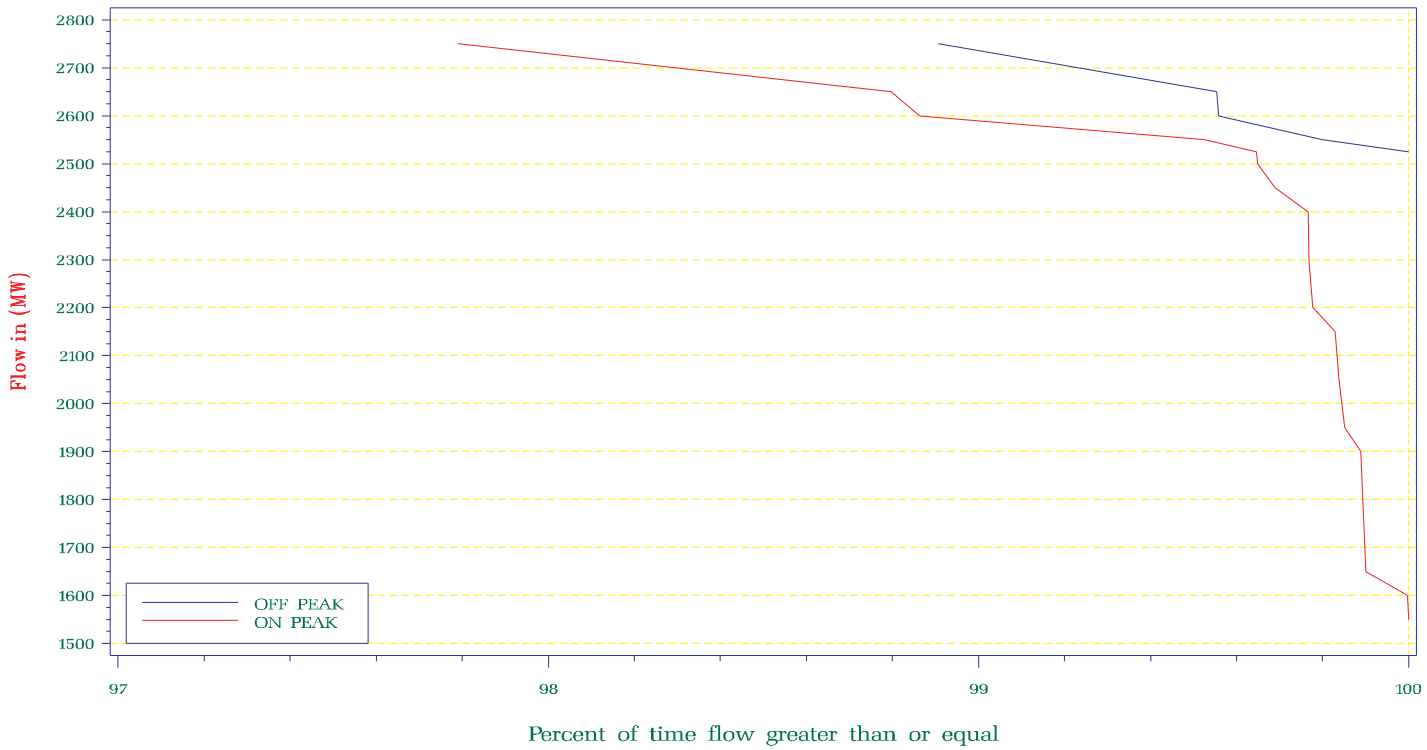
Dysinger East Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

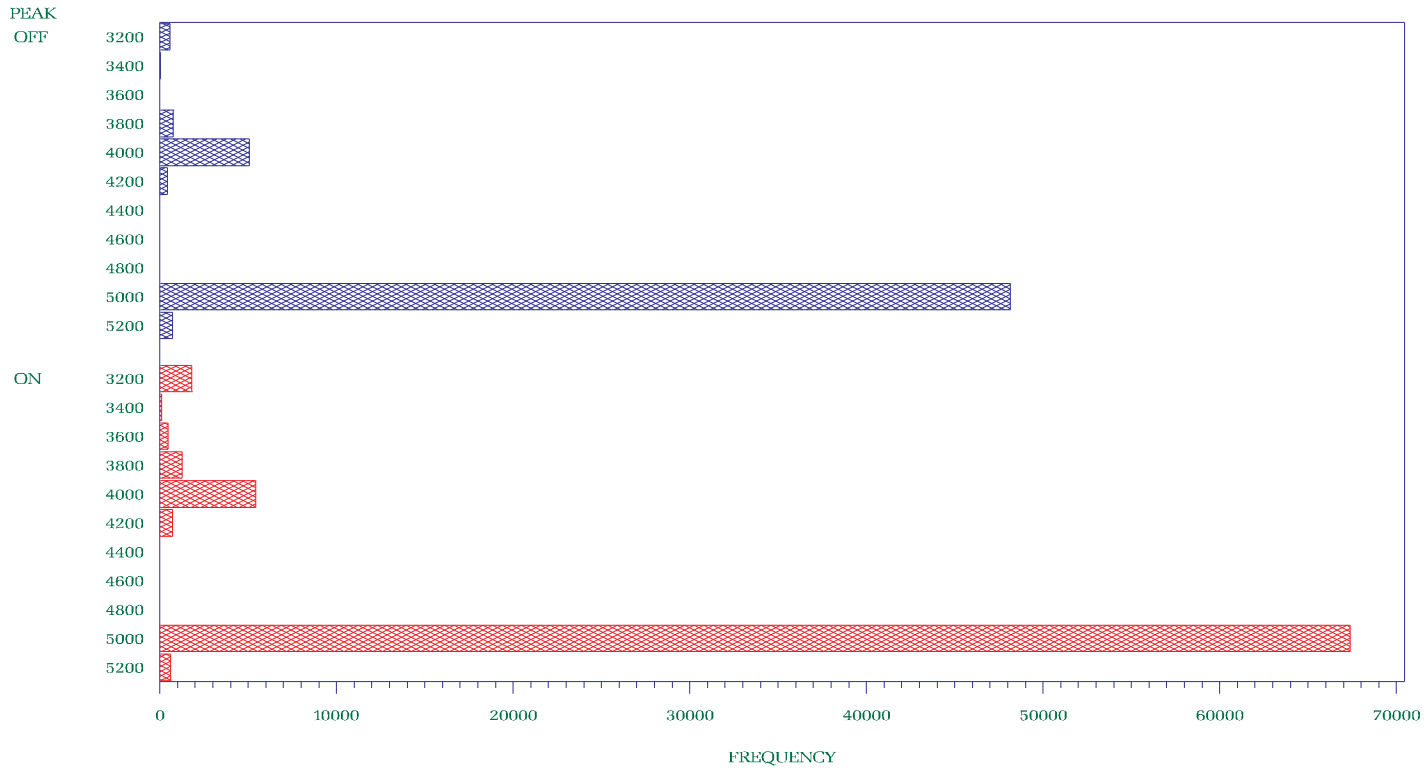
Dysinger East Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

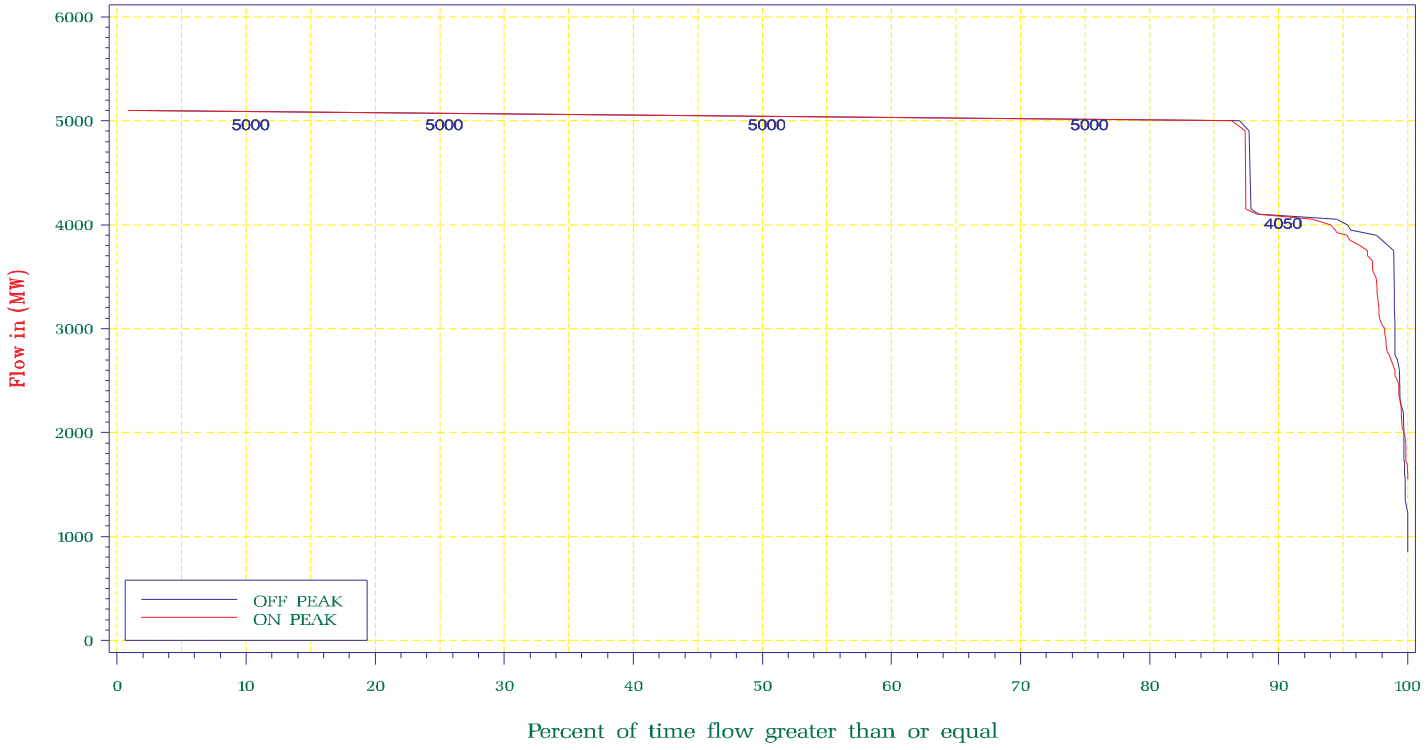
UPNY Con Ed Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

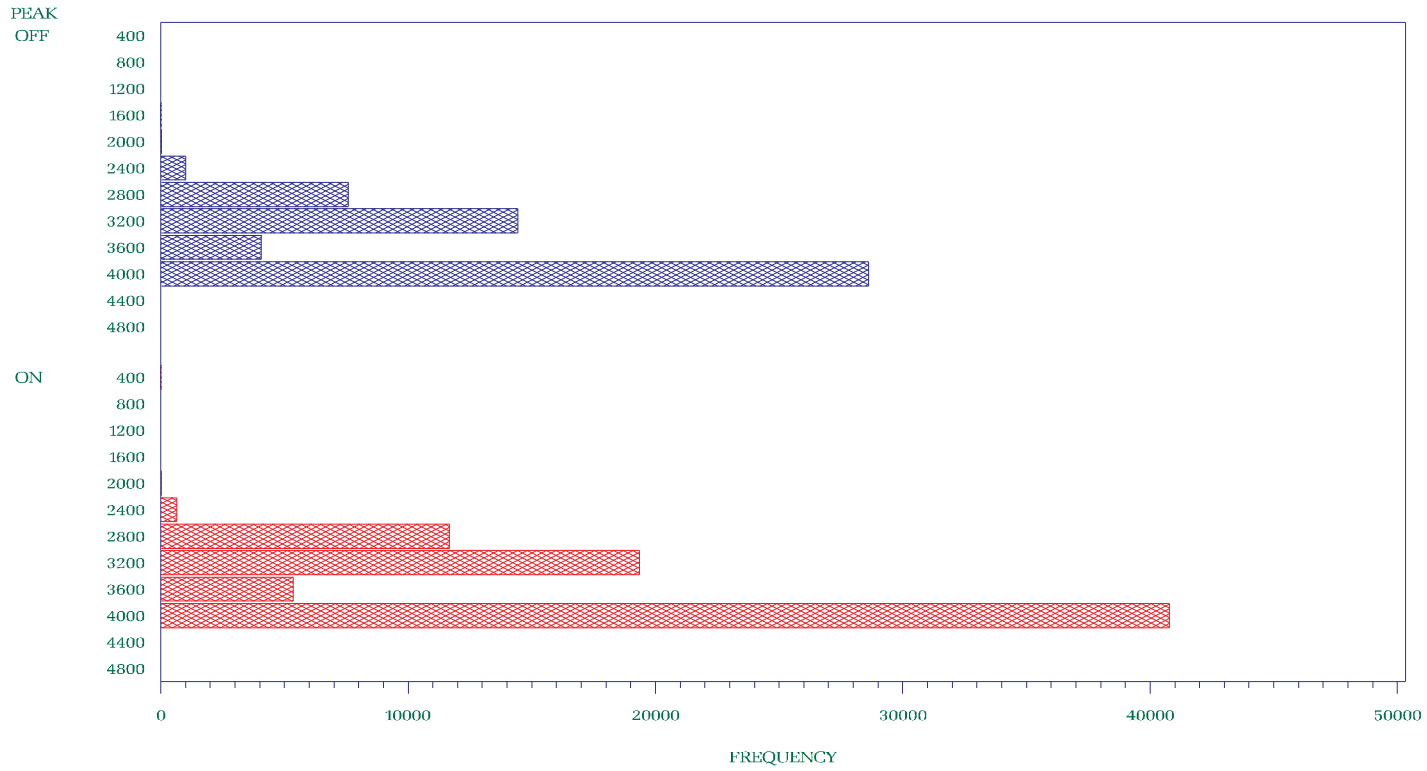
UPNY Con Ed Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

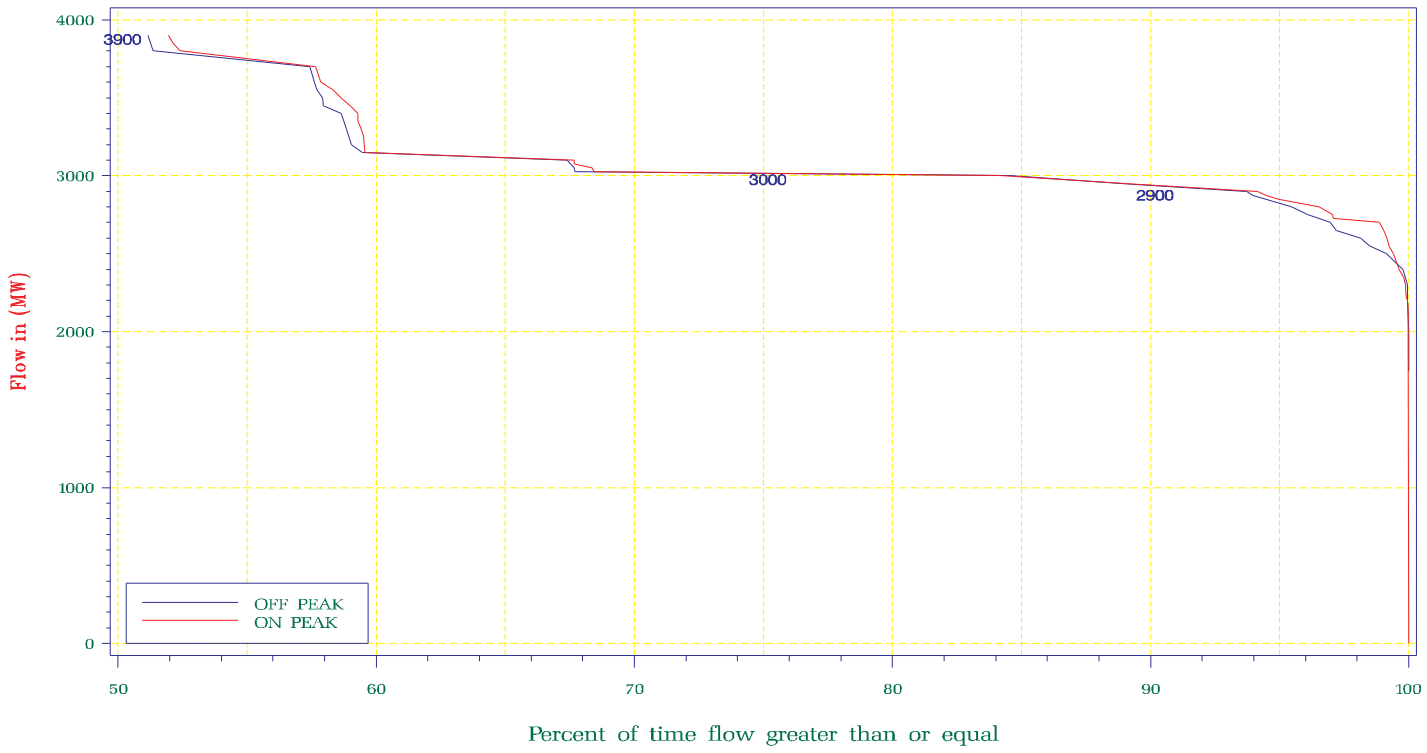
Dunwoodie South Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

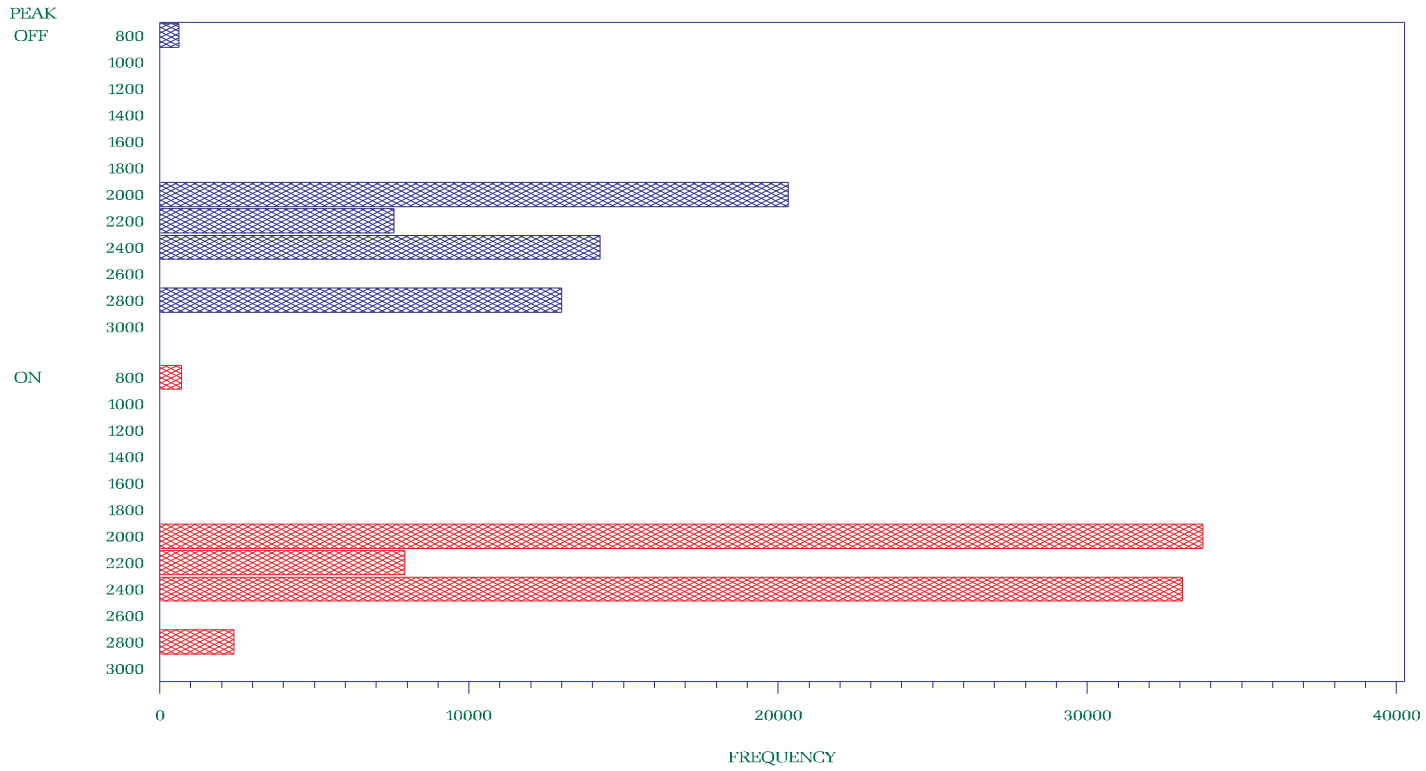
Dunwoodie South Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

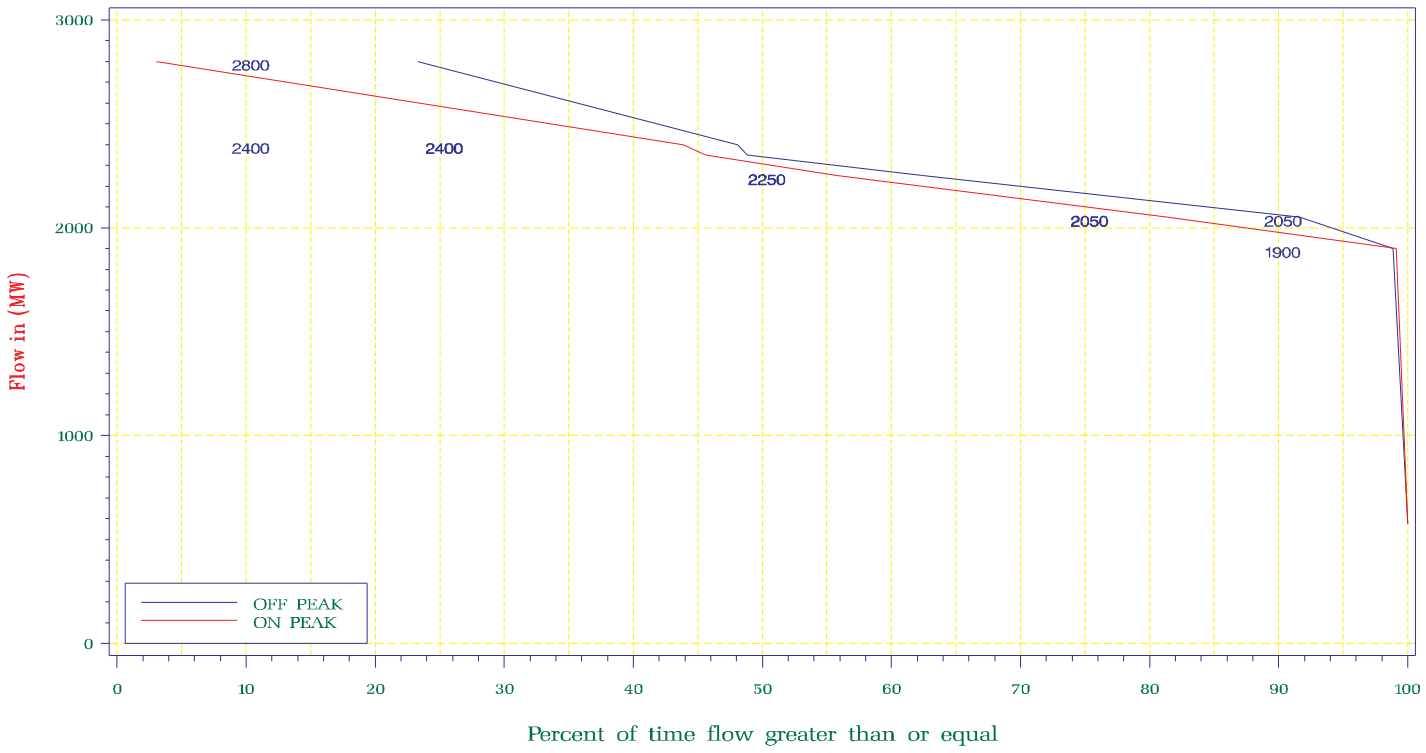
Moses South Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

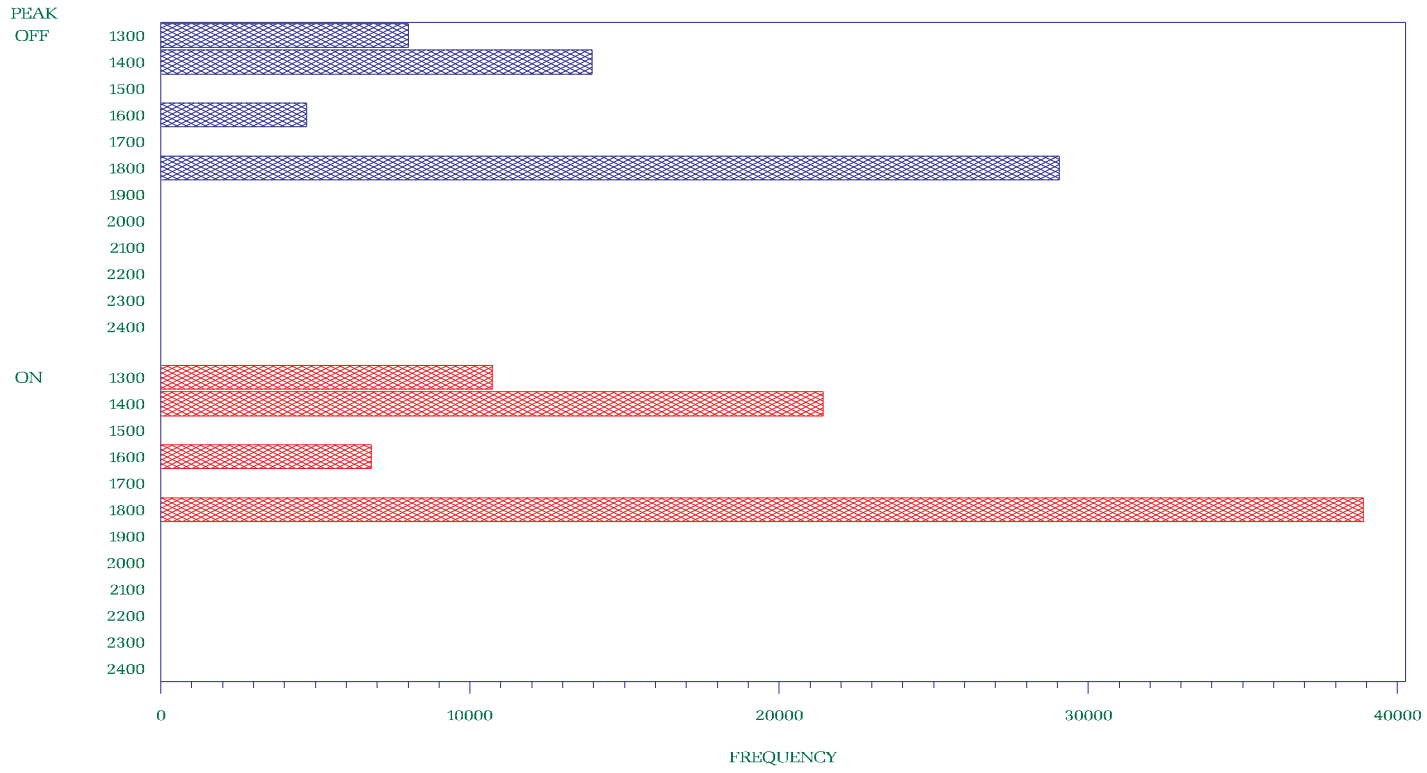
Moses South Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

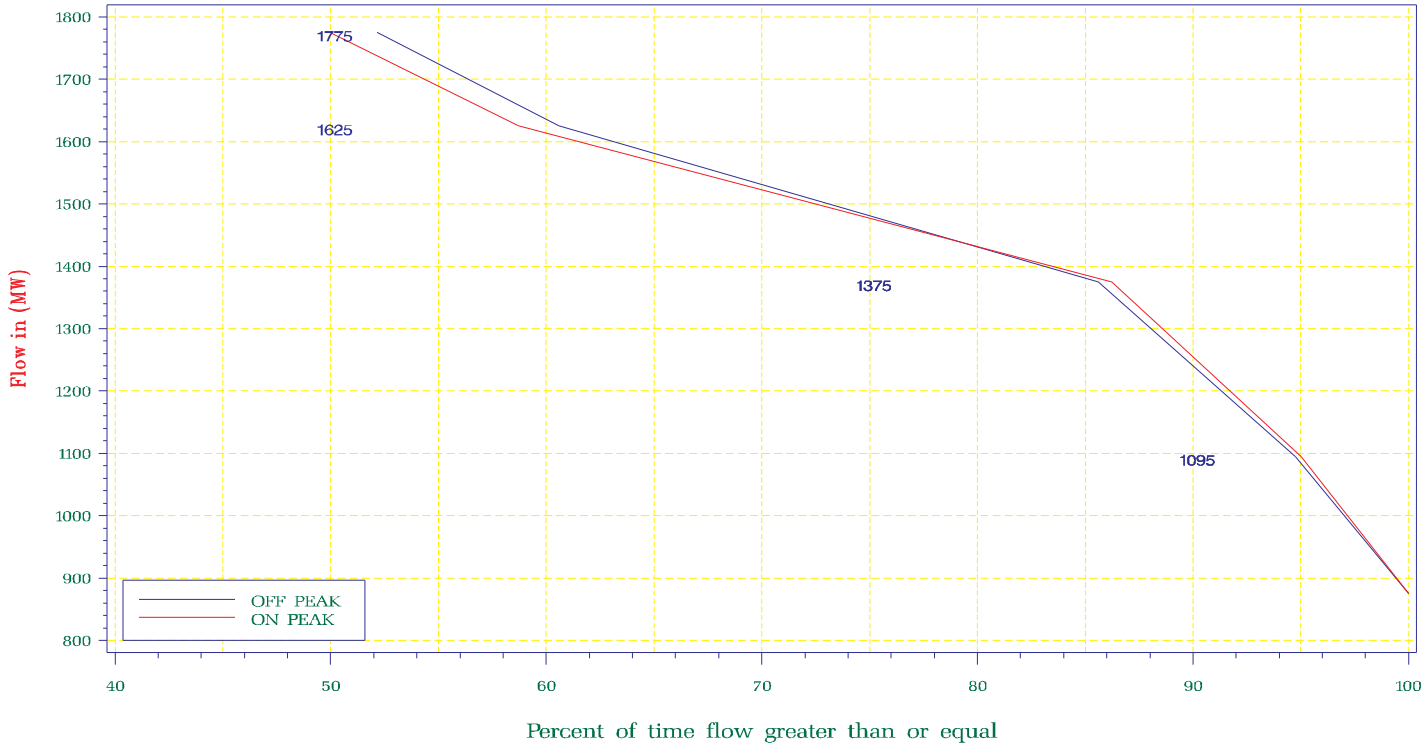
TE – NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

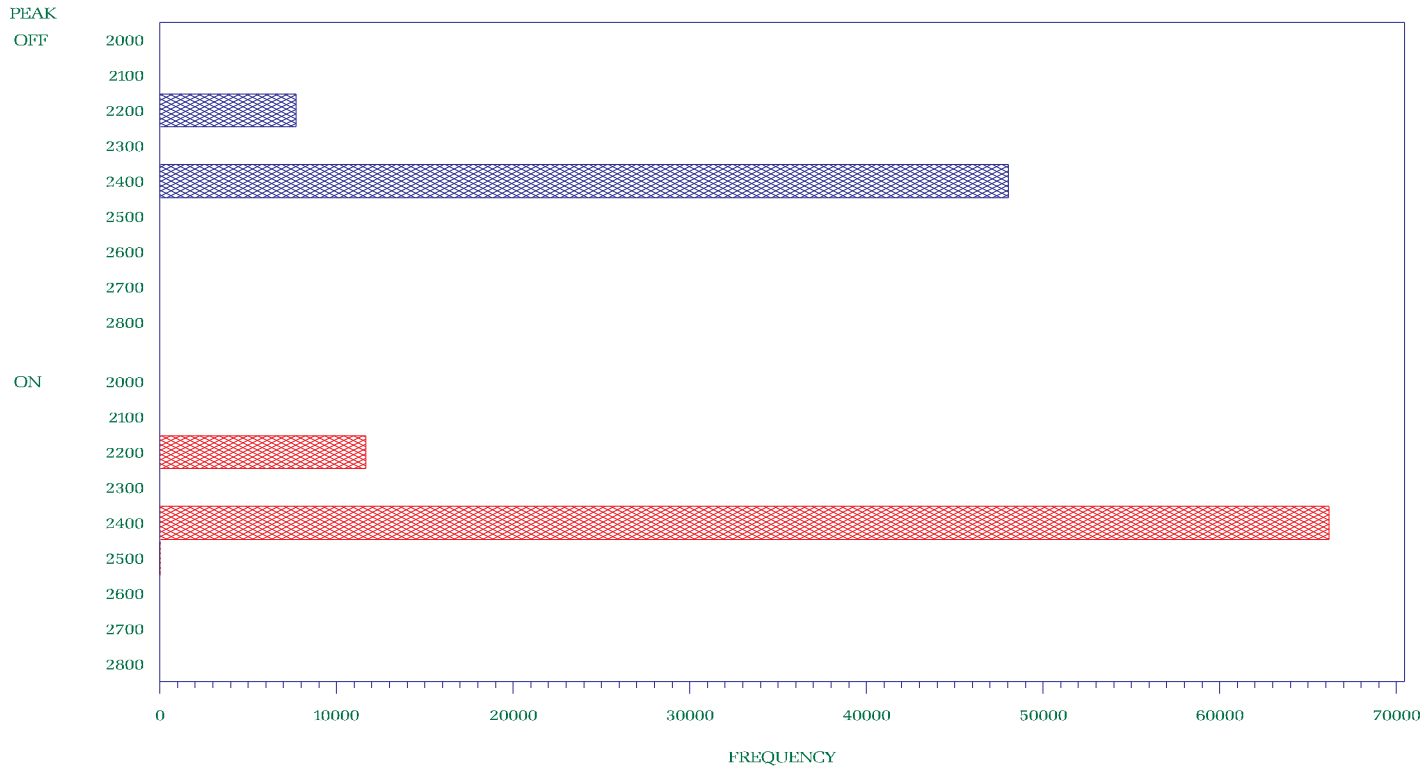
TE – NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

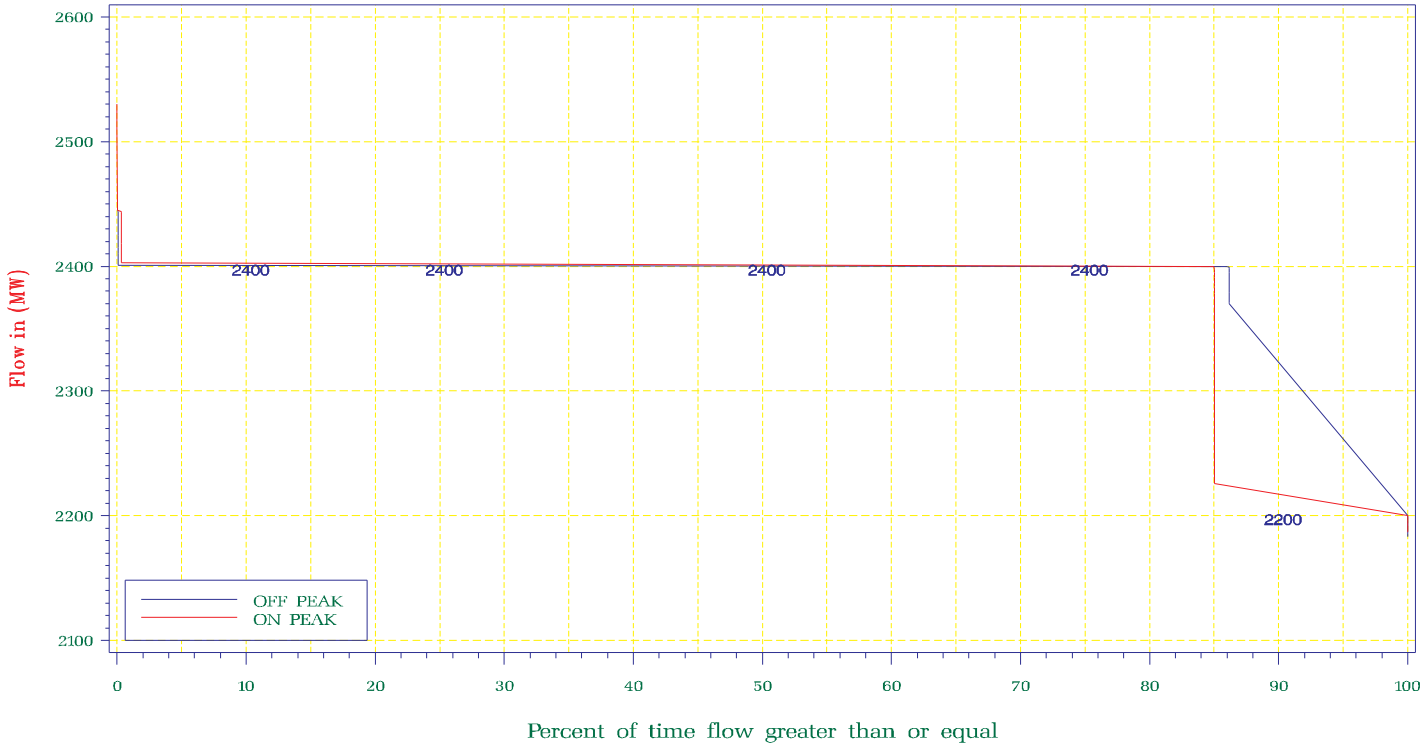
Ontario – NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

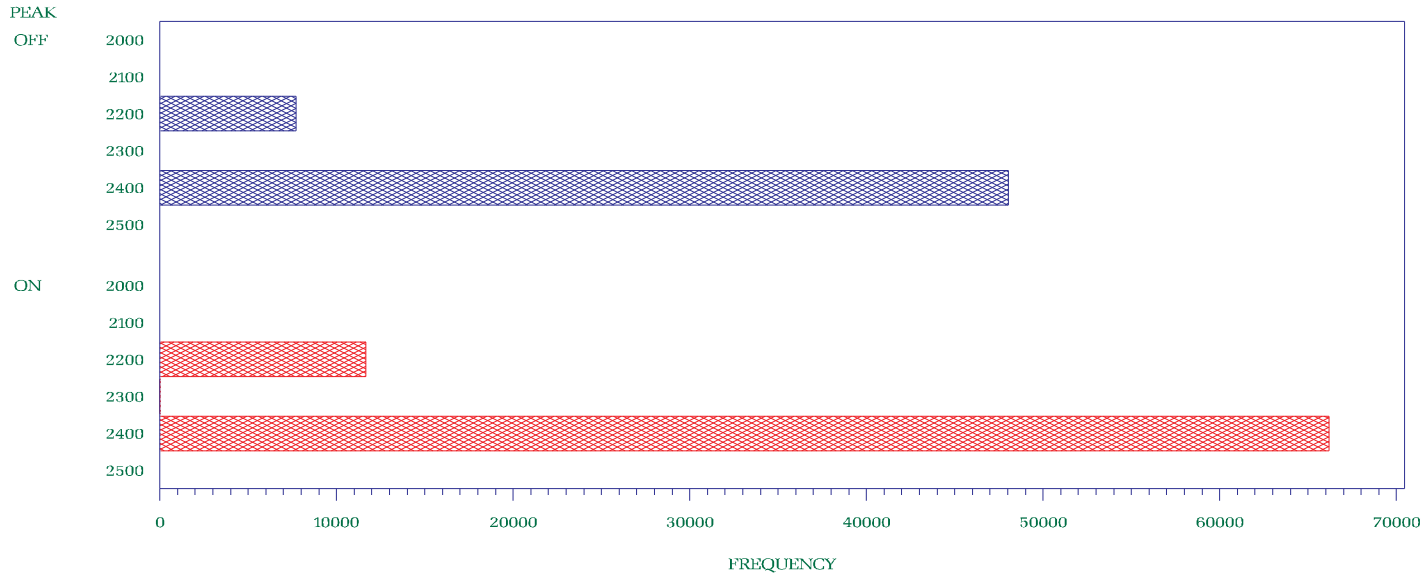
Ontario – NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

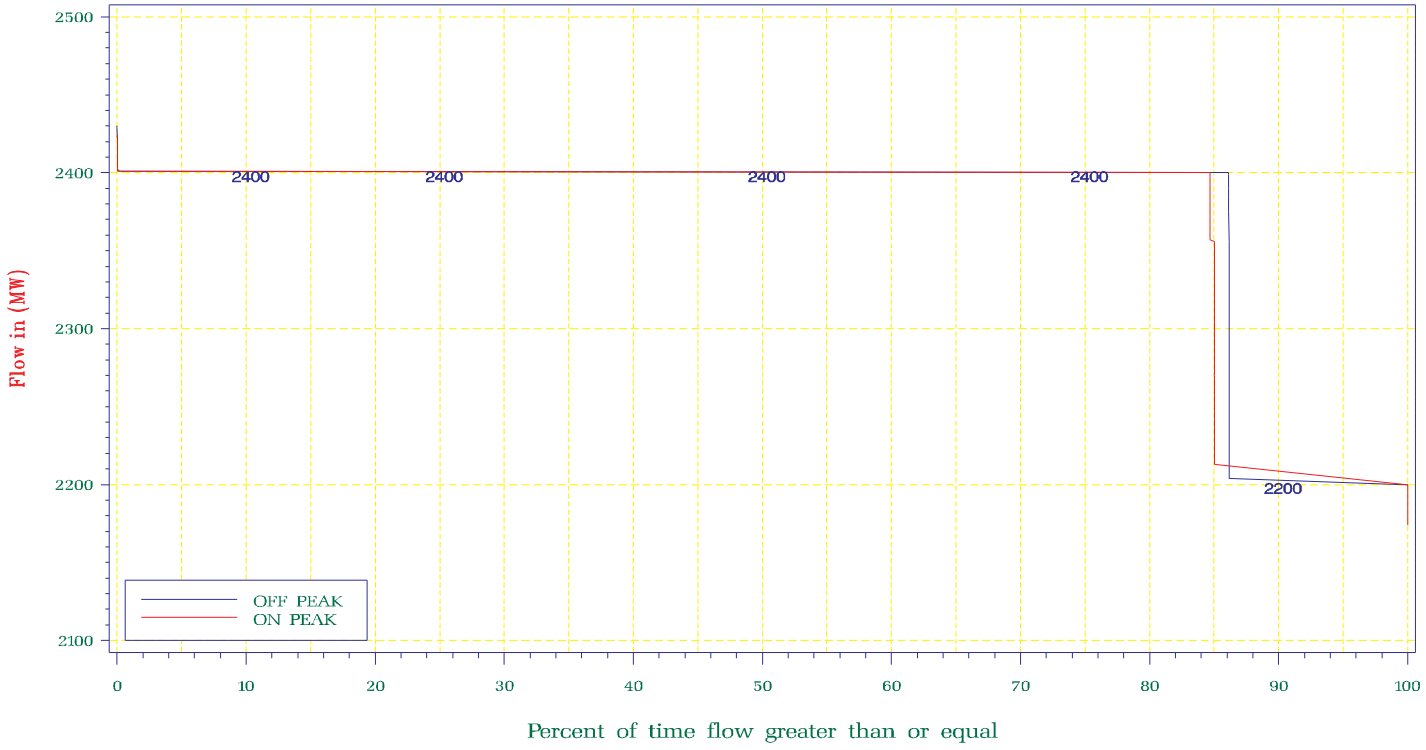
NY – Ontario Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

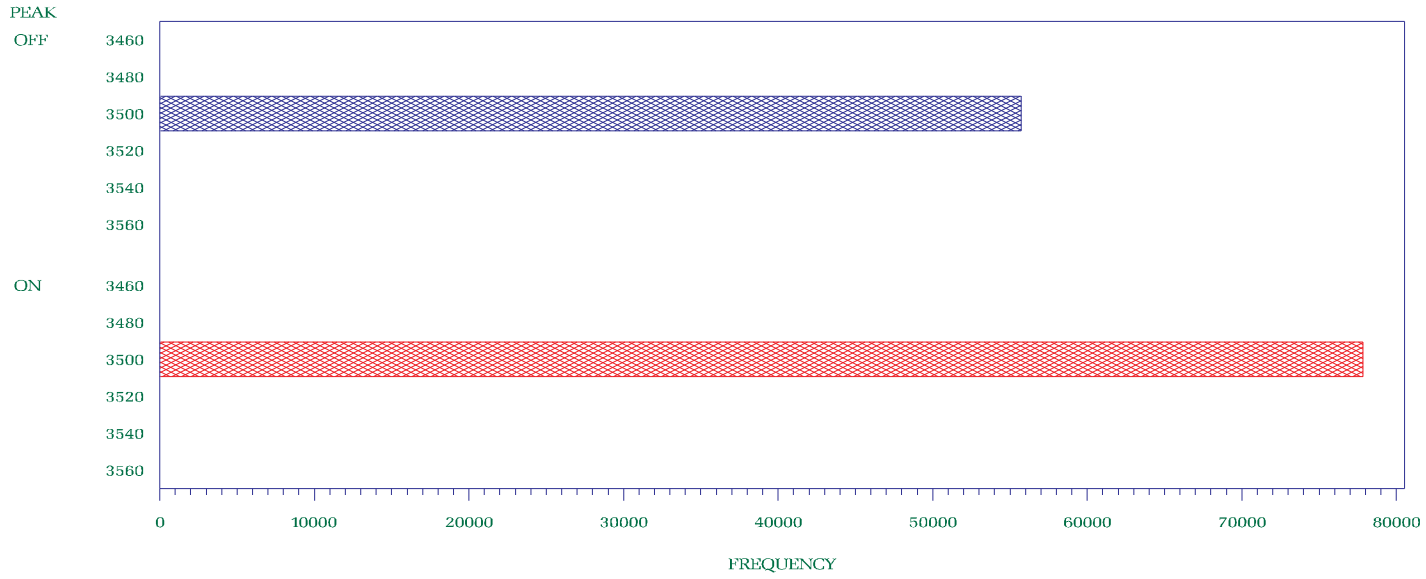
NY – Ontario Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

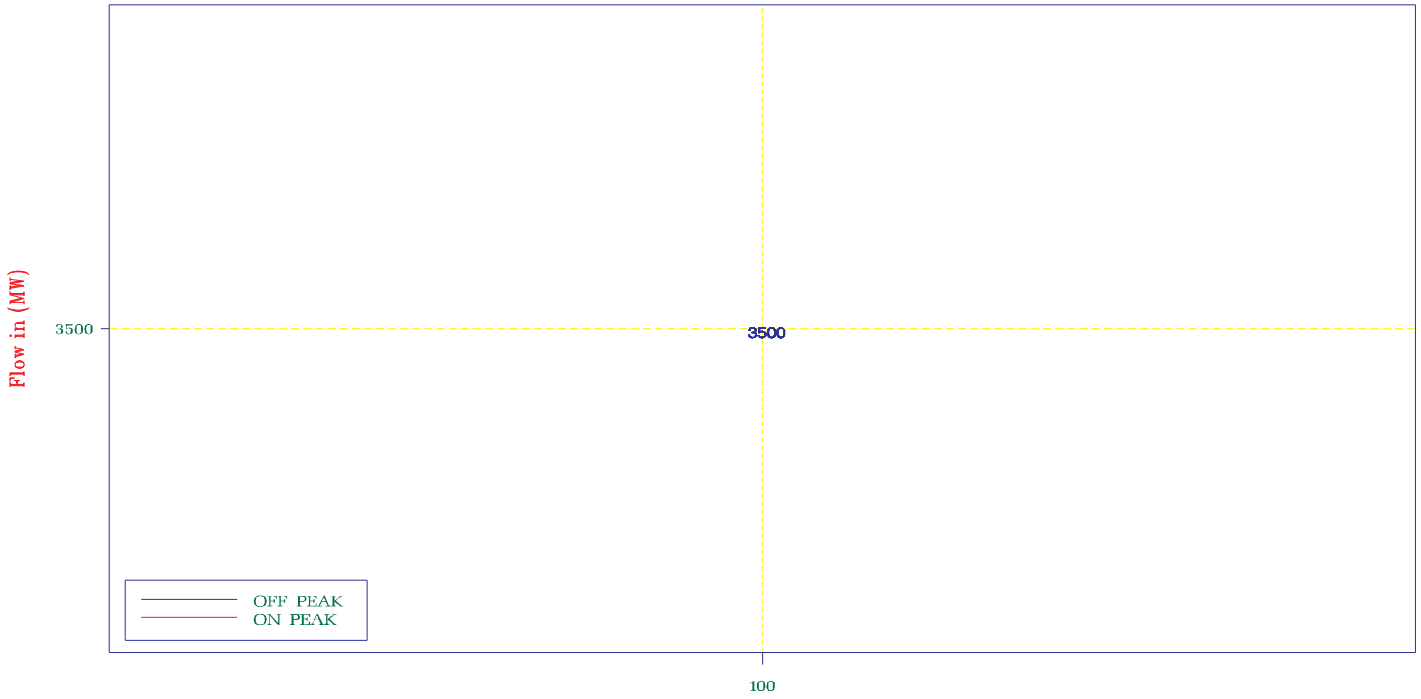
PJM – NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

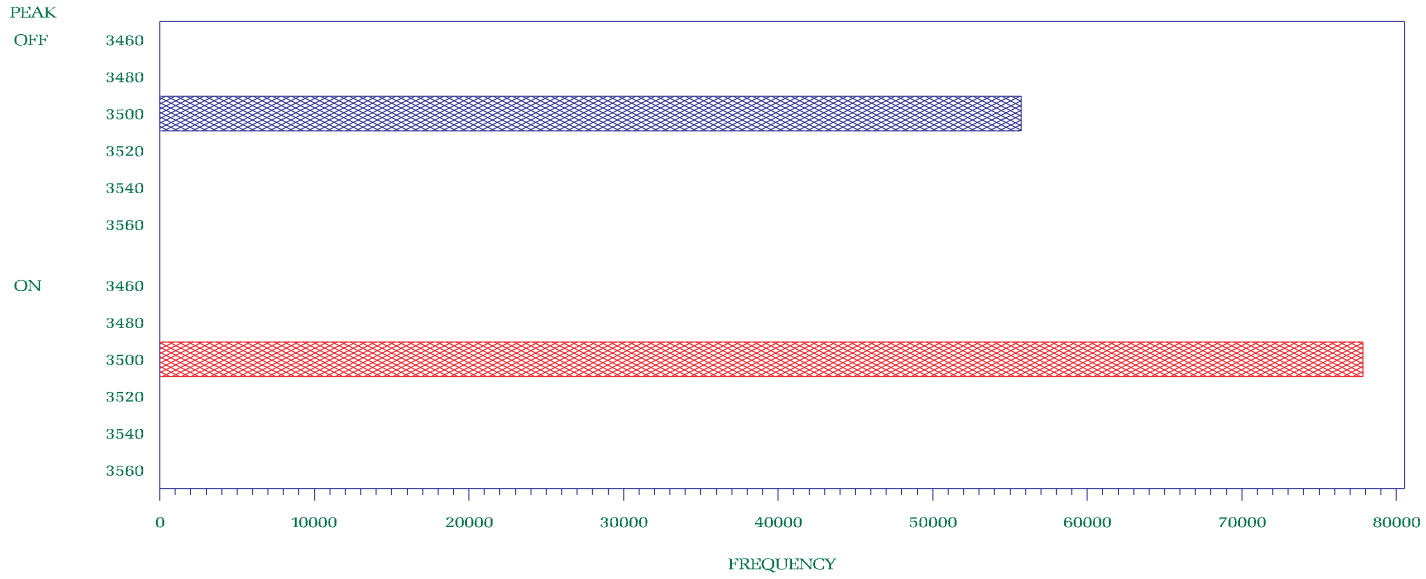
PJM – NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

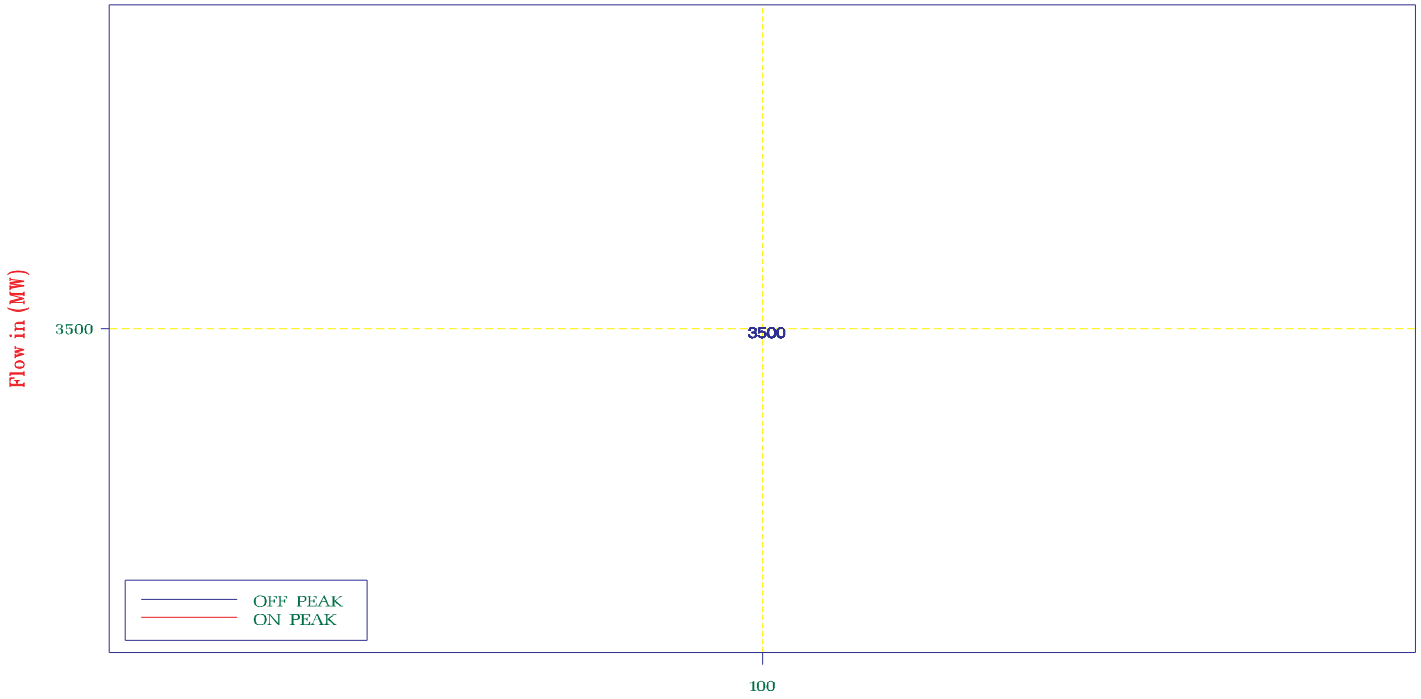
NY – PJM Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

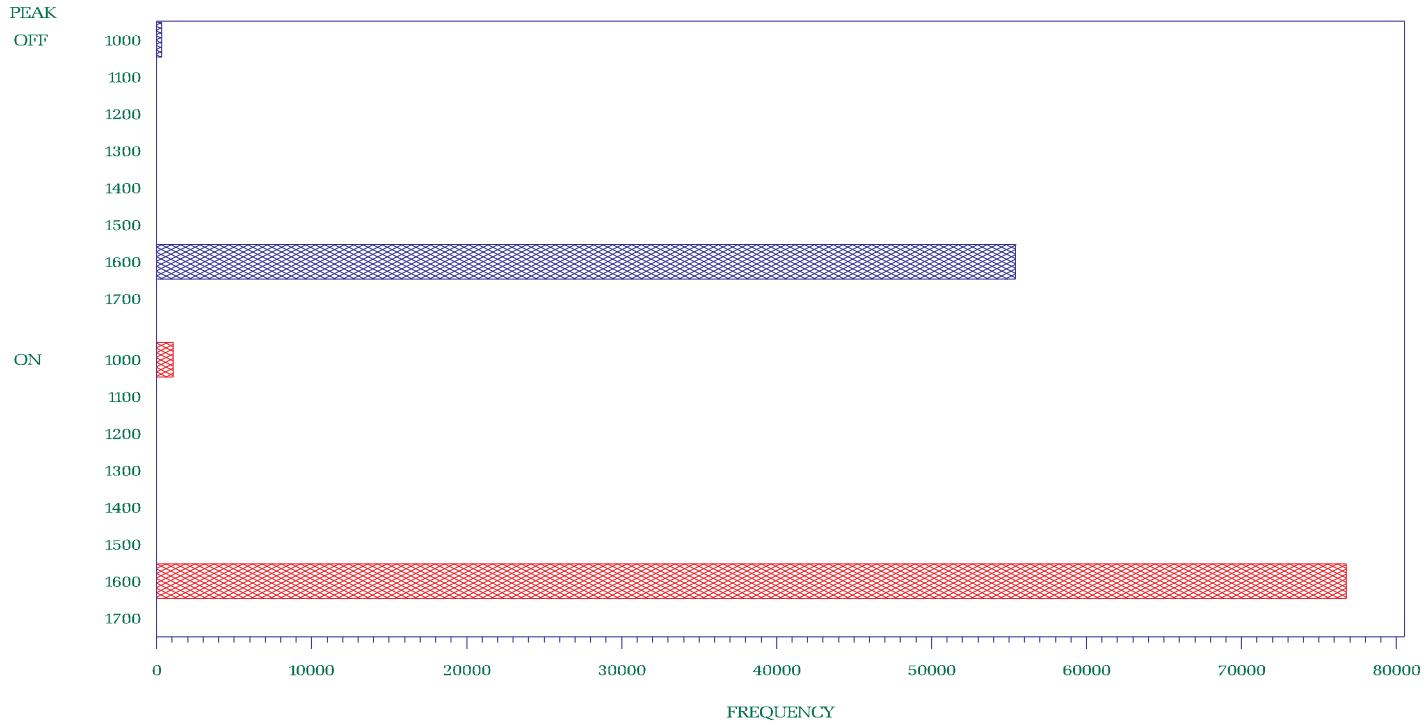
NY – PJM Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

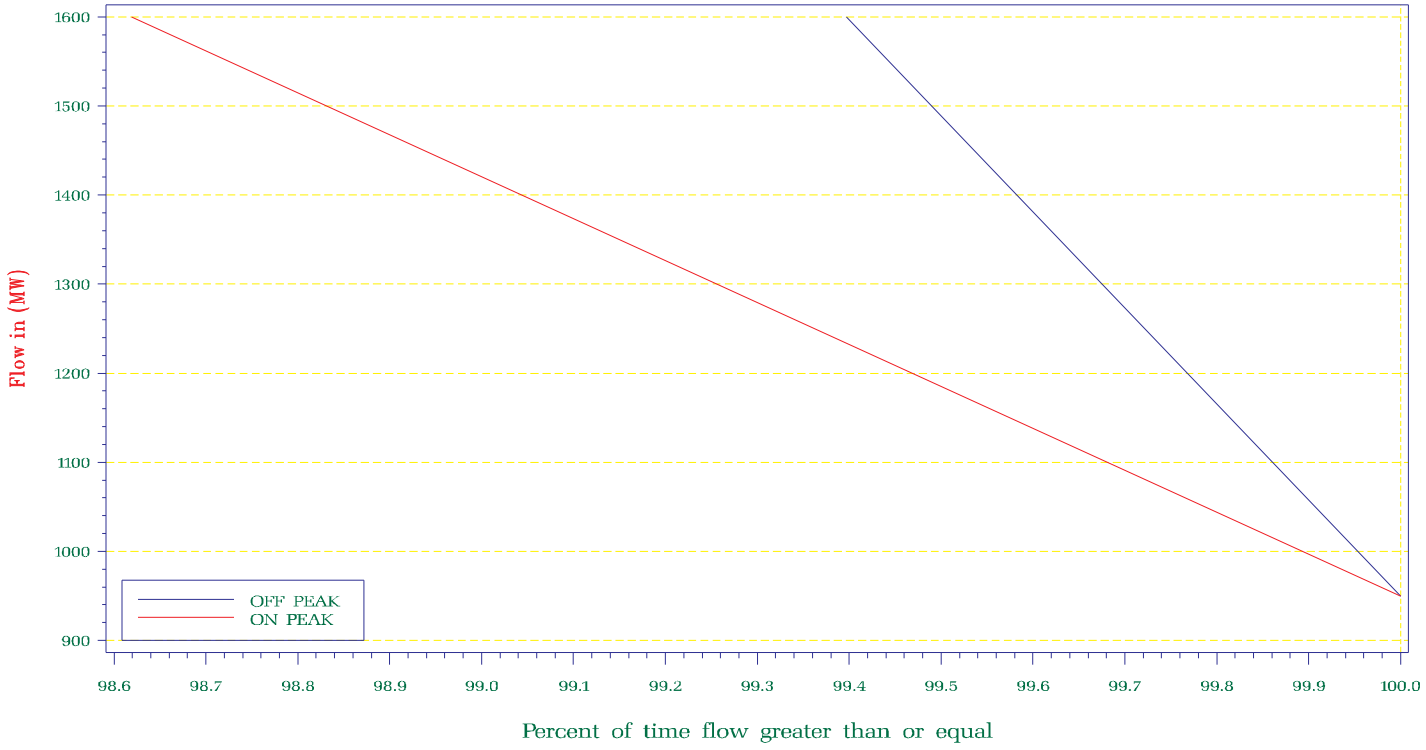
NE – NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

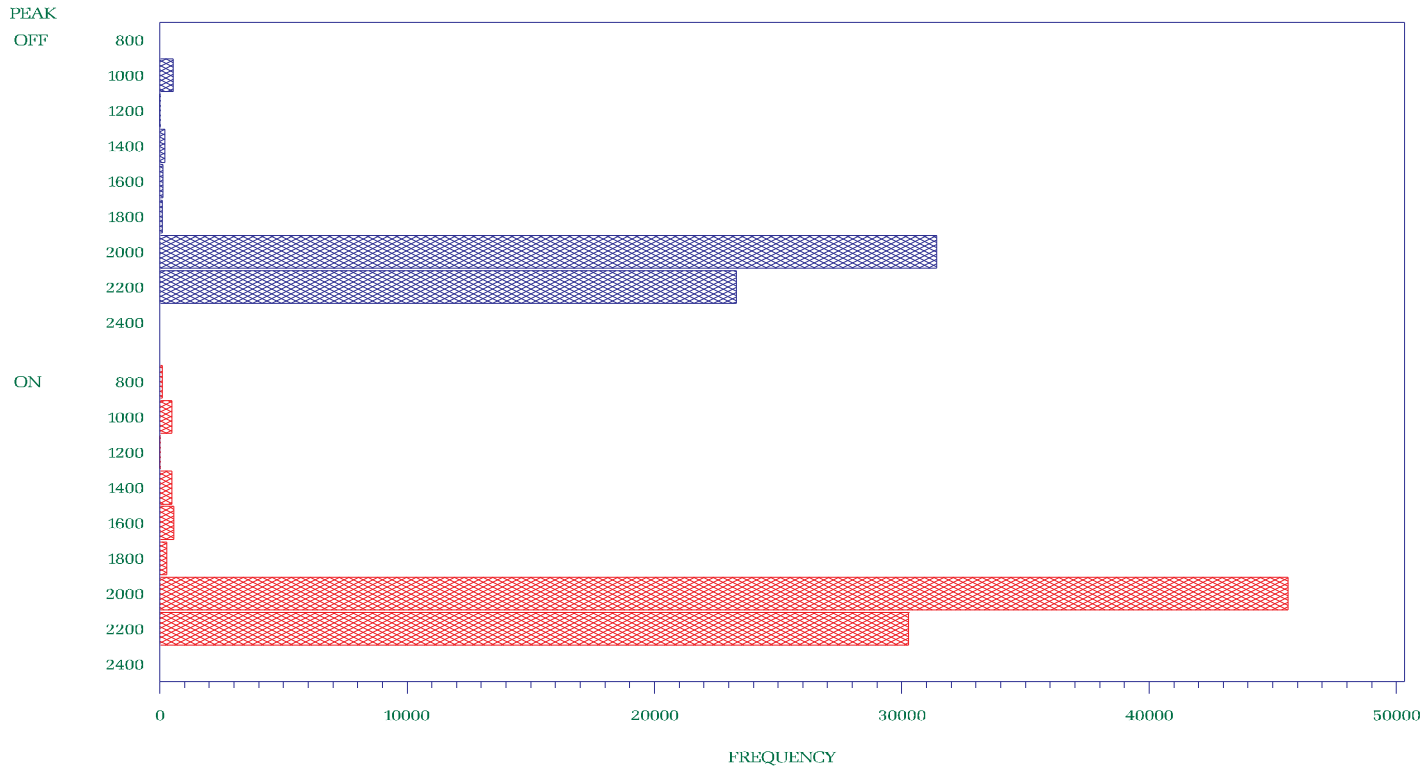
NE – NY Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

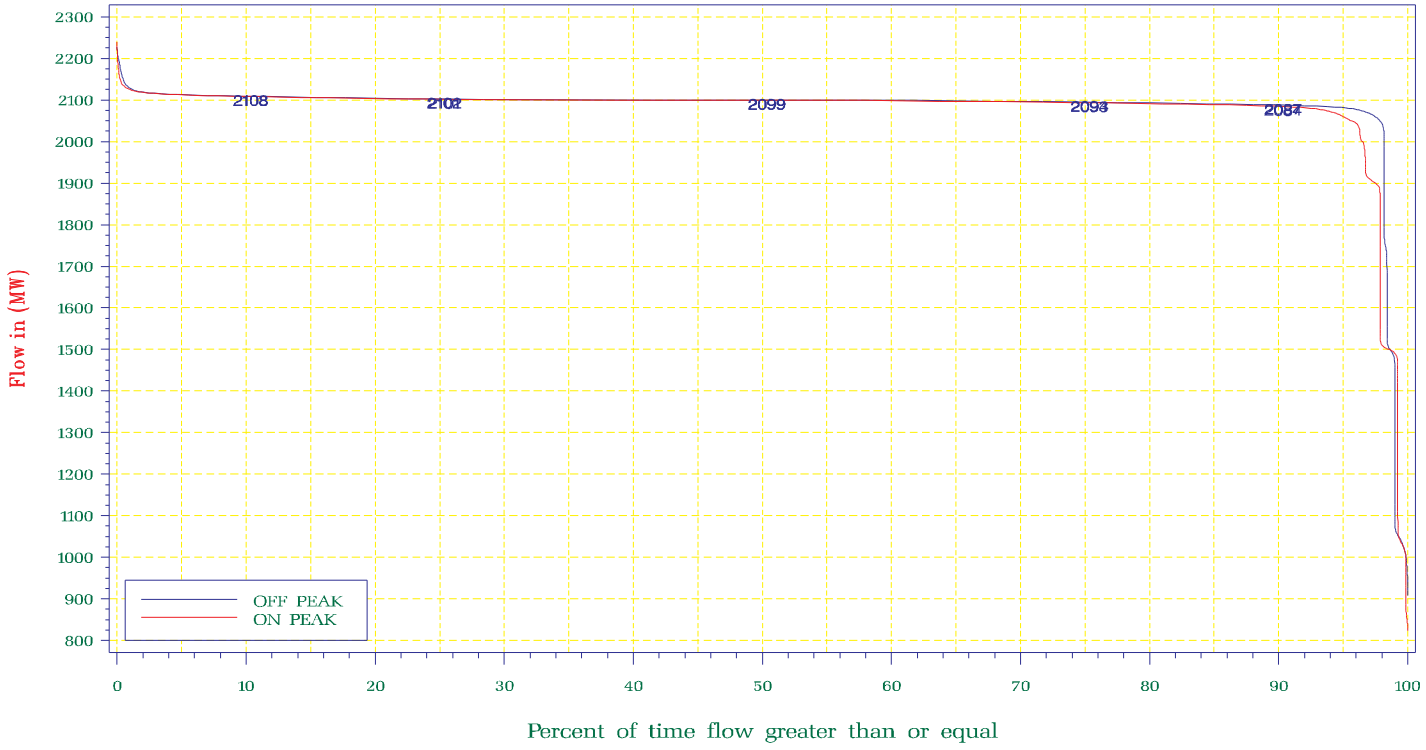
NY – NE Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

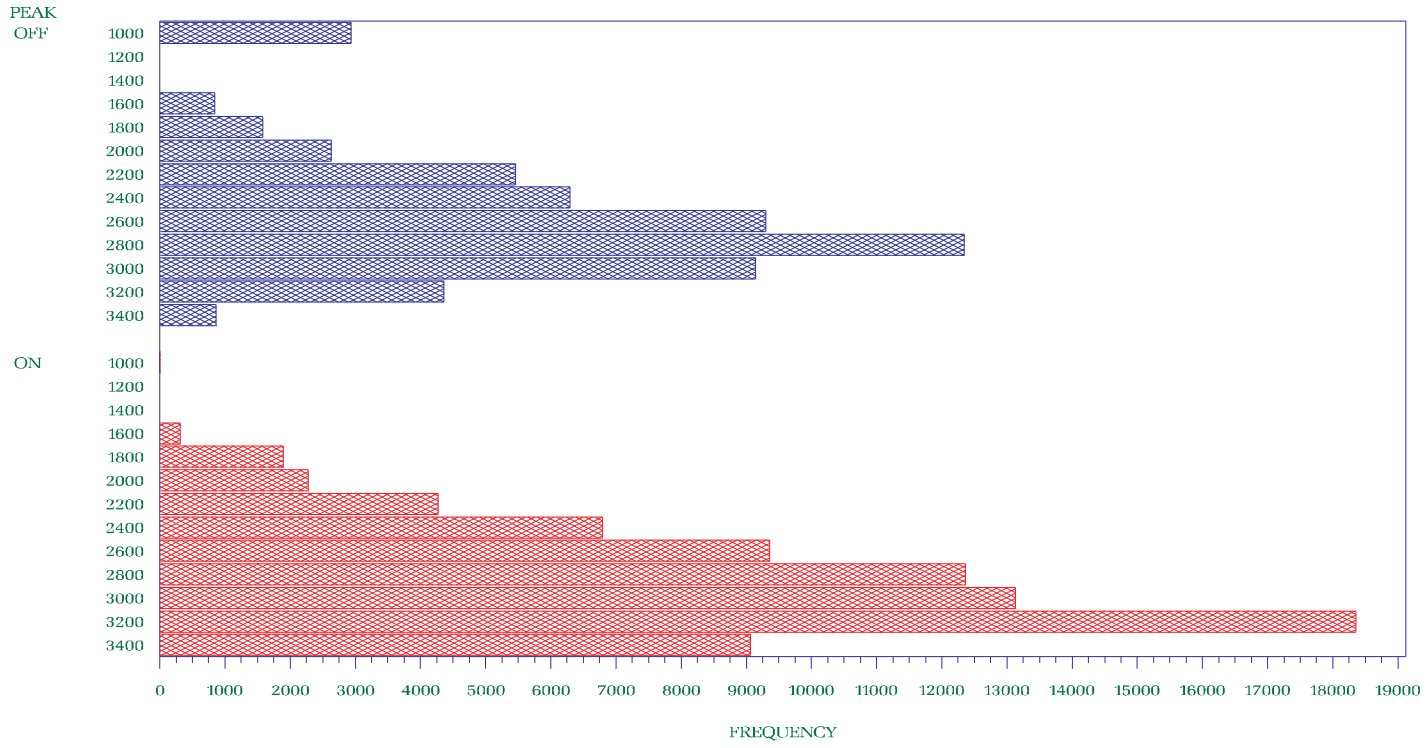
NY – NE Limit



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

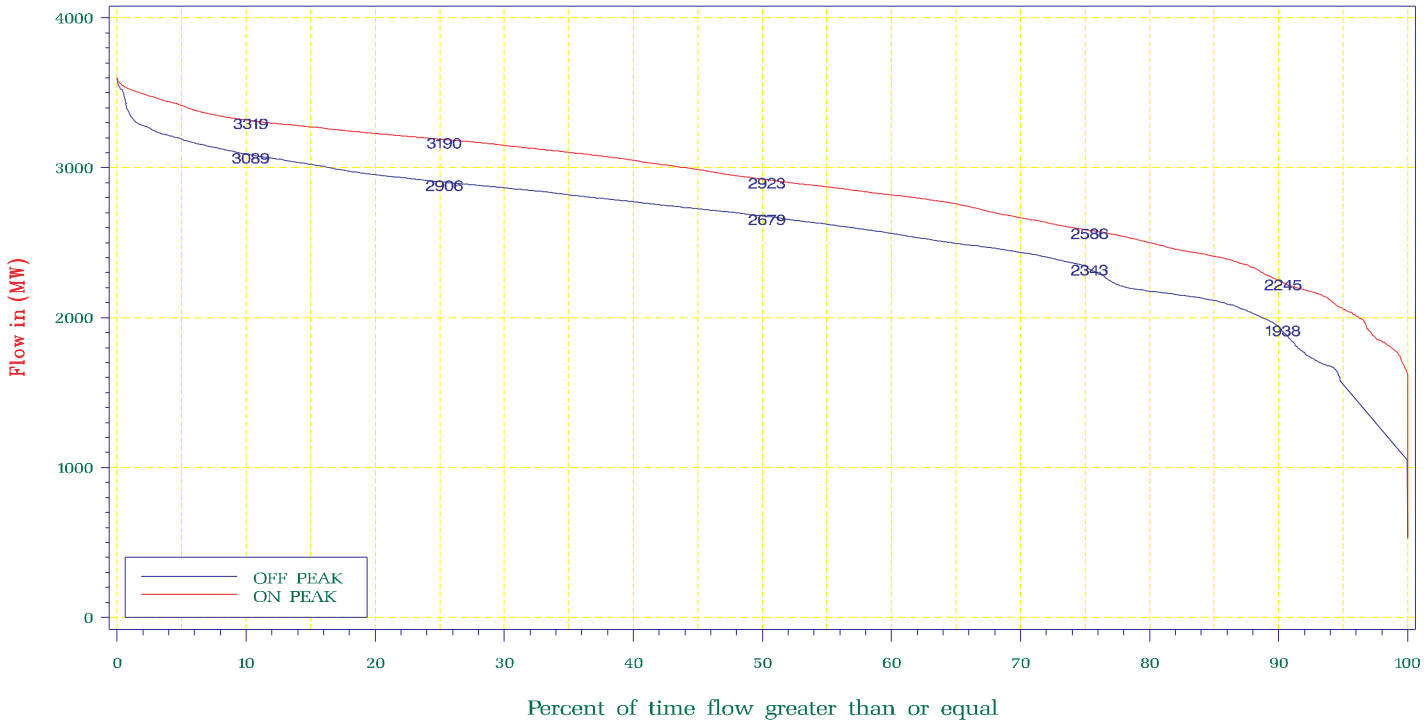
Central East Post – Contingency Voltage Collapse Limit
l/o New England Generation



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

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

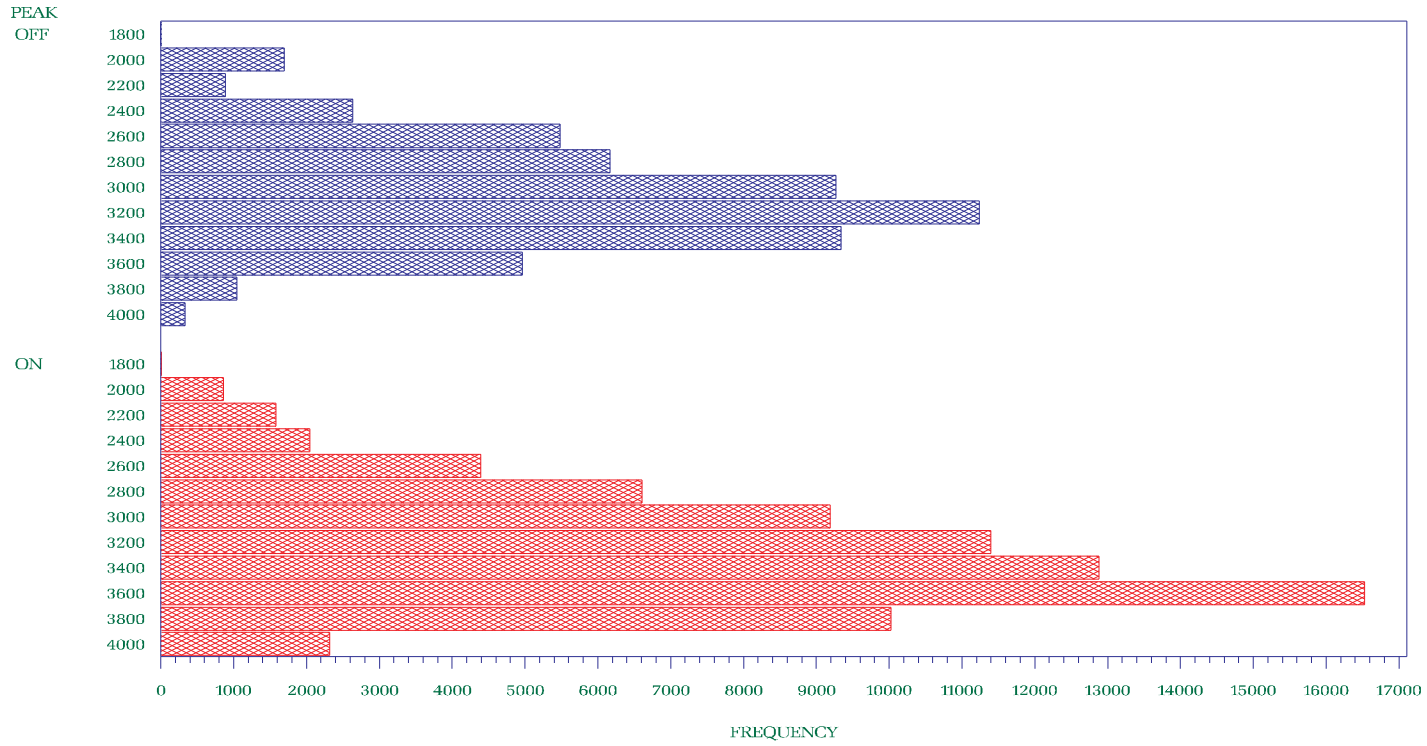


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

Central East Post – Contingency Voltage Collapse Limit

l/o Marcy South Tower

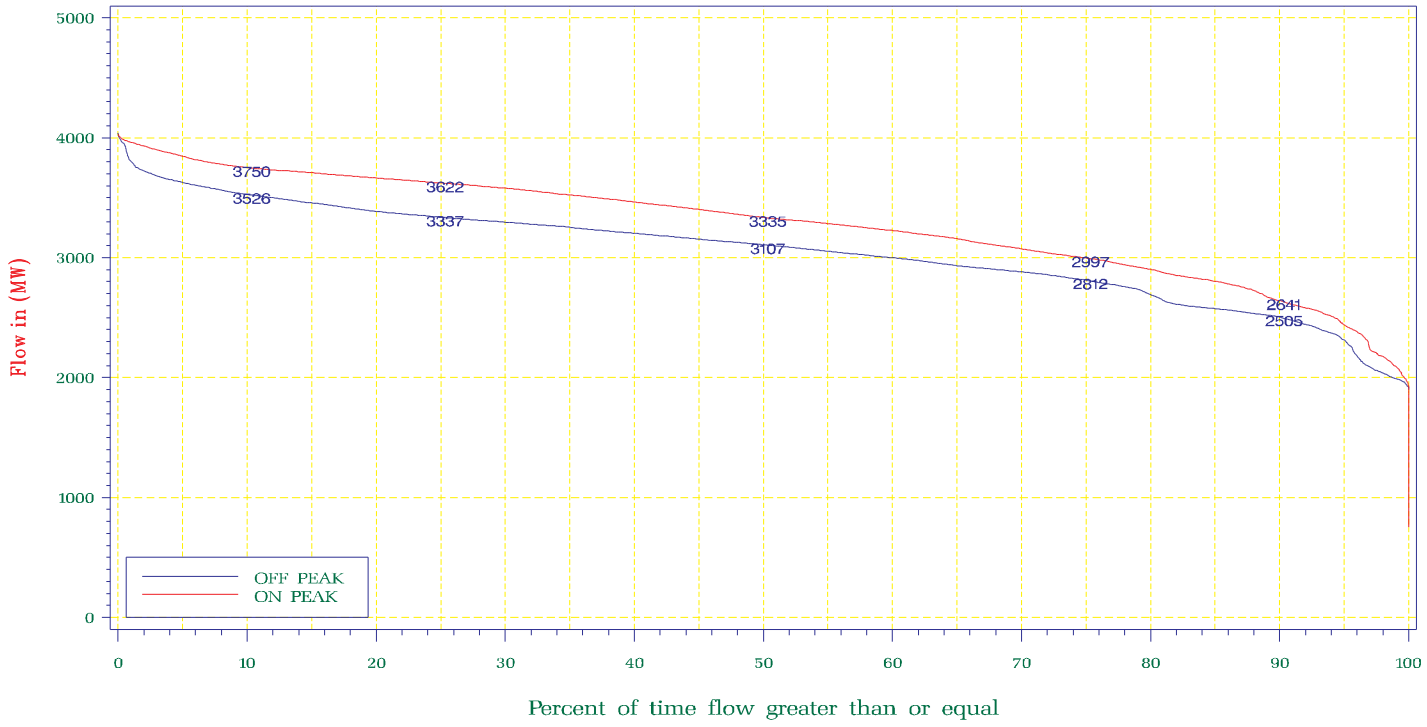


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

Central East Post – Contingency Voltage Collapse Limit

l/o Marcy South Tower

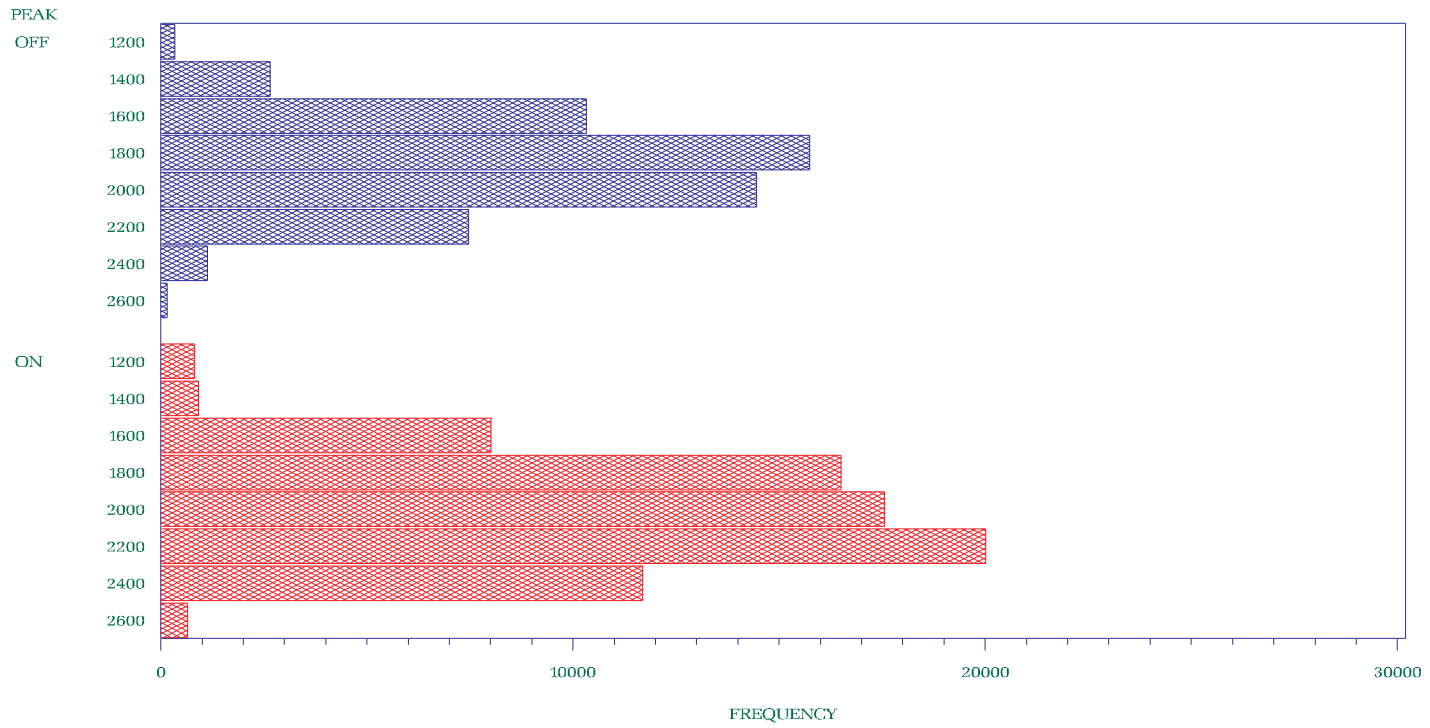


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Frequency Interface Flow For January – December 2002

Central East Post – Contingency Voltage Collapse Limit

l/o New Scotland 99 Bus

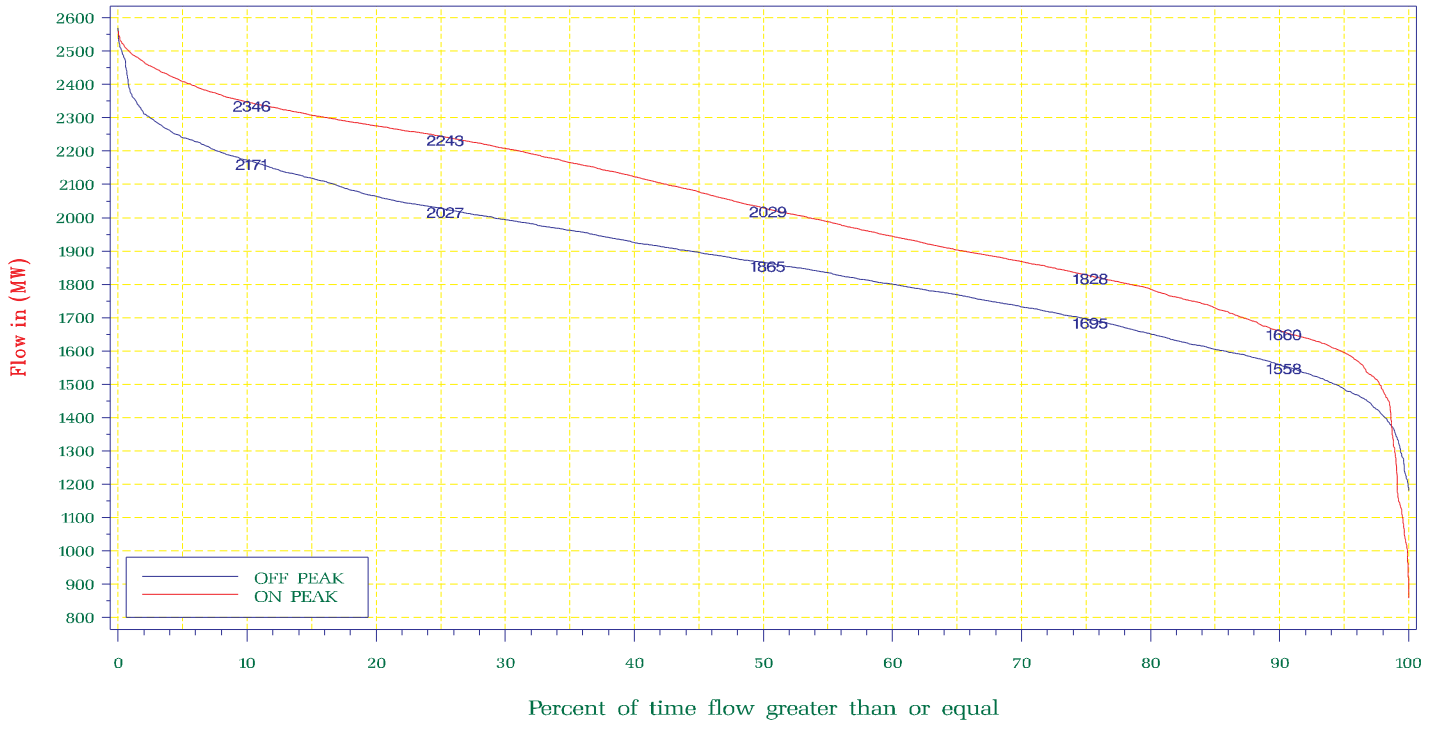


OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

NYISO Percent of time Interface Flow For January – December 2002

Central East Post – Contingency Voltage Collapse Limit

l/o New Scotland 99 Bus



OFFPEAK: Monday – Saturday : From 11:00pm – 07:00am and Sunday
ONPEAK : Monday – Saturday : From 07:00am – 11:00pm

This page is intentionally left blank.