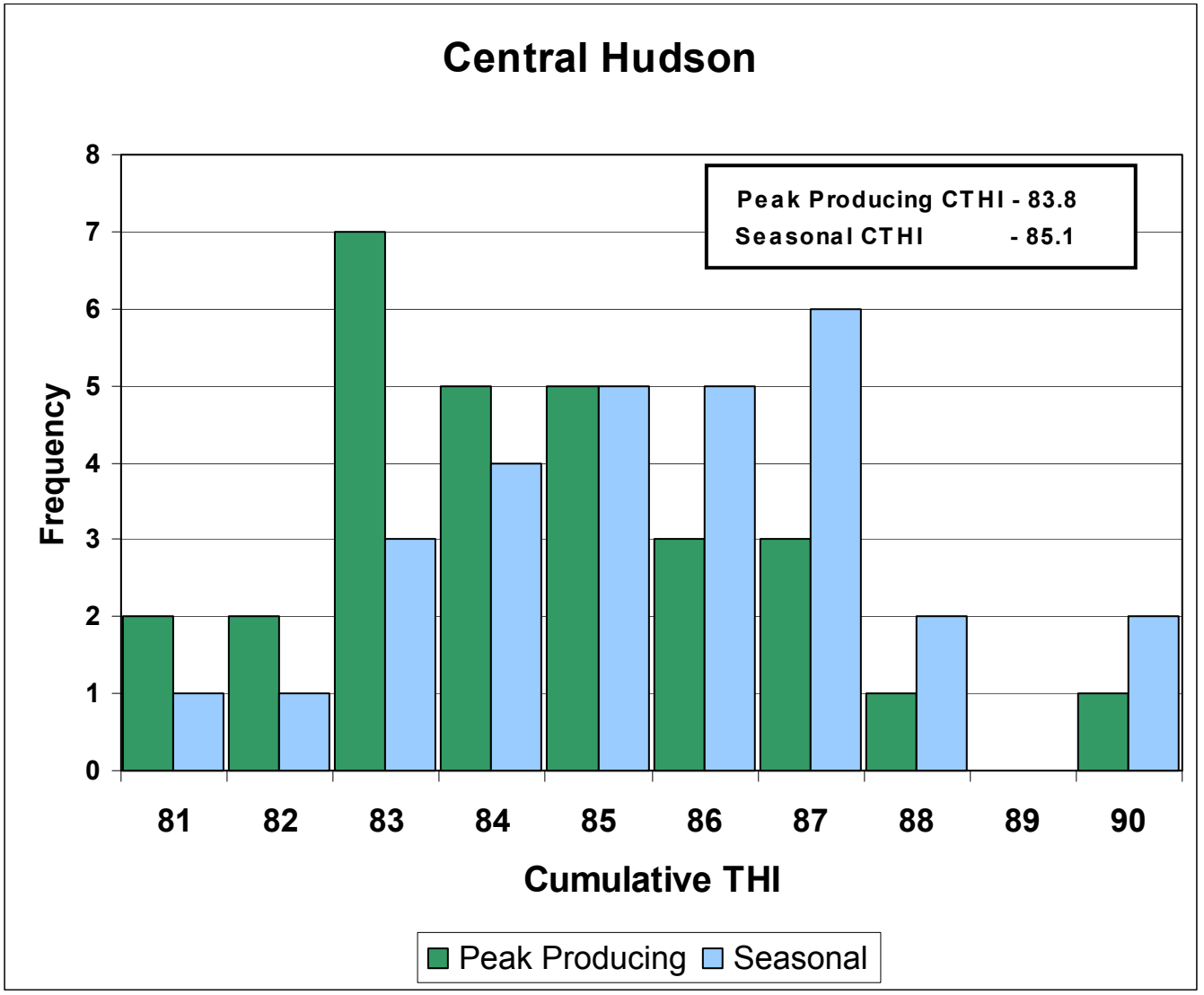
2003 Weather Adjustments to Coincident Loads

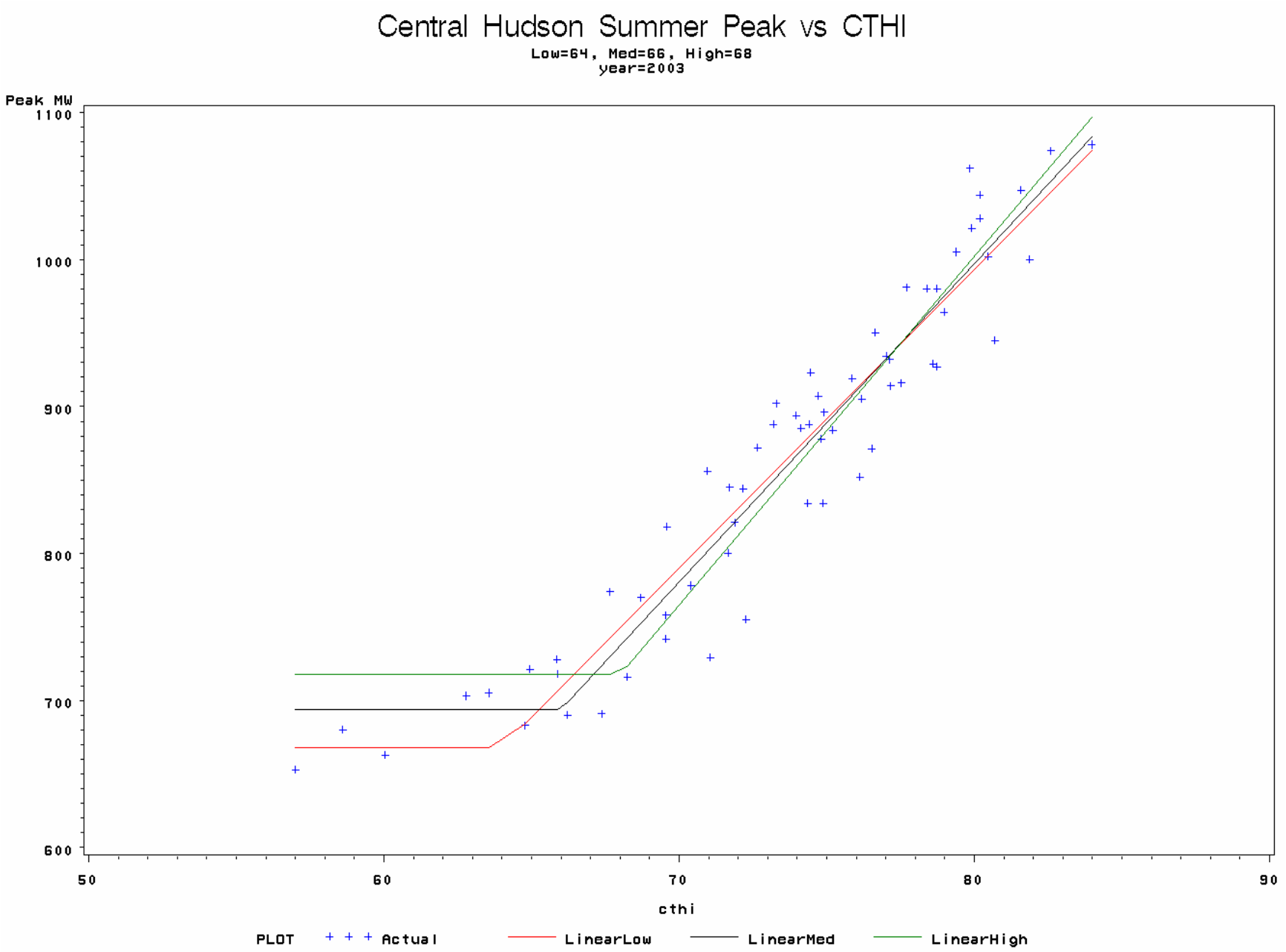
NYISO Load Forecasting Task Force

December 18, 2003

Overview of Results

- Results for Each Transmission Owner
  - Seasonal & Peak-Producing CTHI
  - Regression Model of T.O. 2003 Loads
  - NYISO Estimate of Adjustment
  - Comparison to T.O.'s Estimate
  - Discussion of Results
- Next Steps
  - Resolution of Differences
  - Regional Load Growth Factors for 2004


Central Hudson
Peak Producing CTHI - 83.8
Seasonal CTHI - 85.1
Frequency
0
1
2
3
4
5
6
7
8
81
82
83
84
85
86
87
88
89
90
Cumulative THI
Peak Producing
Seasonal


Central Hudson Summer Peak vs CTHI
Low=64, Med=66, High=68
year=2003
Peak MW
1100
1000
900
800
700
600
50
60
70
80
90
cthi
PLOT
Actual
LinearLow
LinearMed
LinearHigh

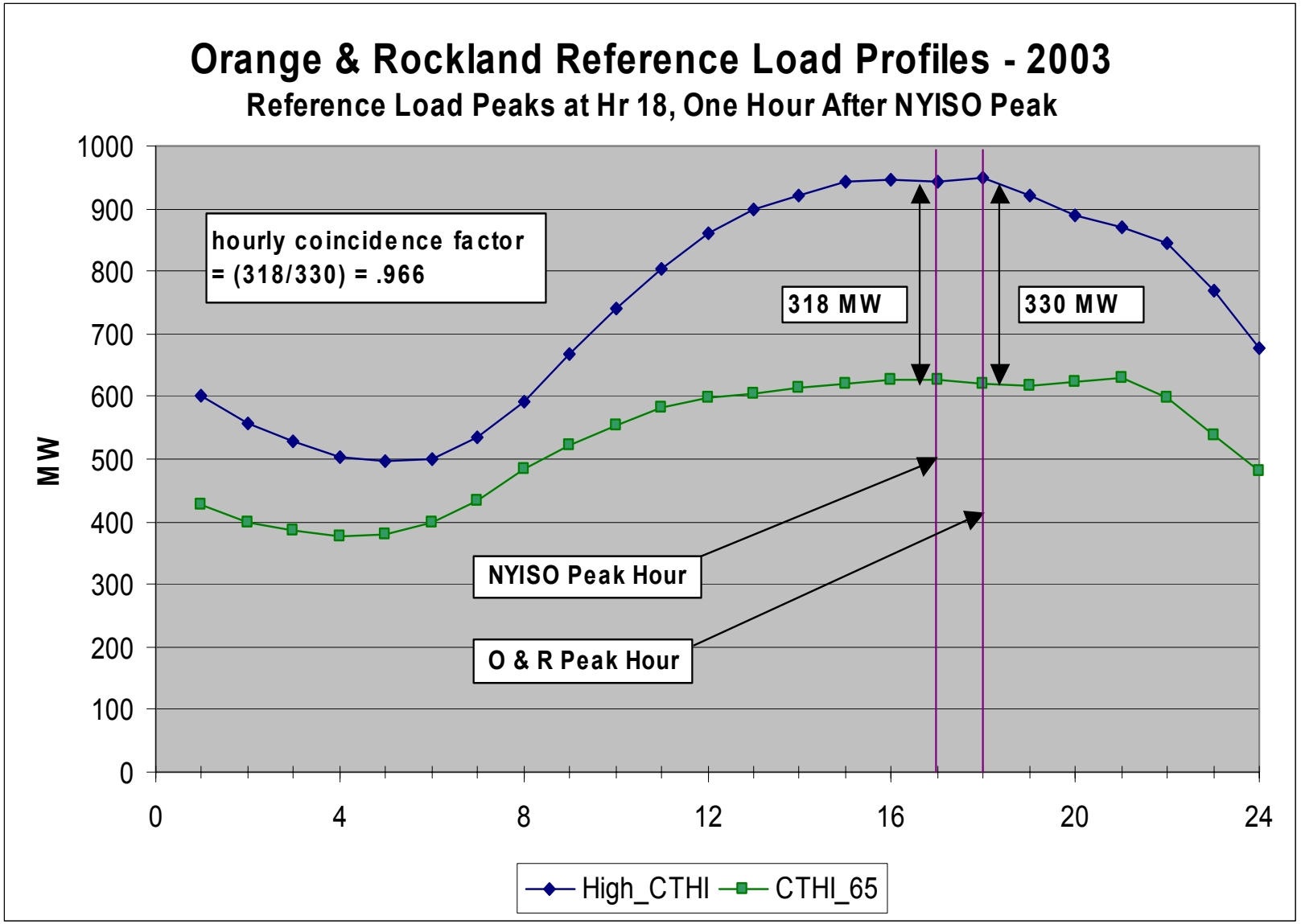
New York Independent System Operator

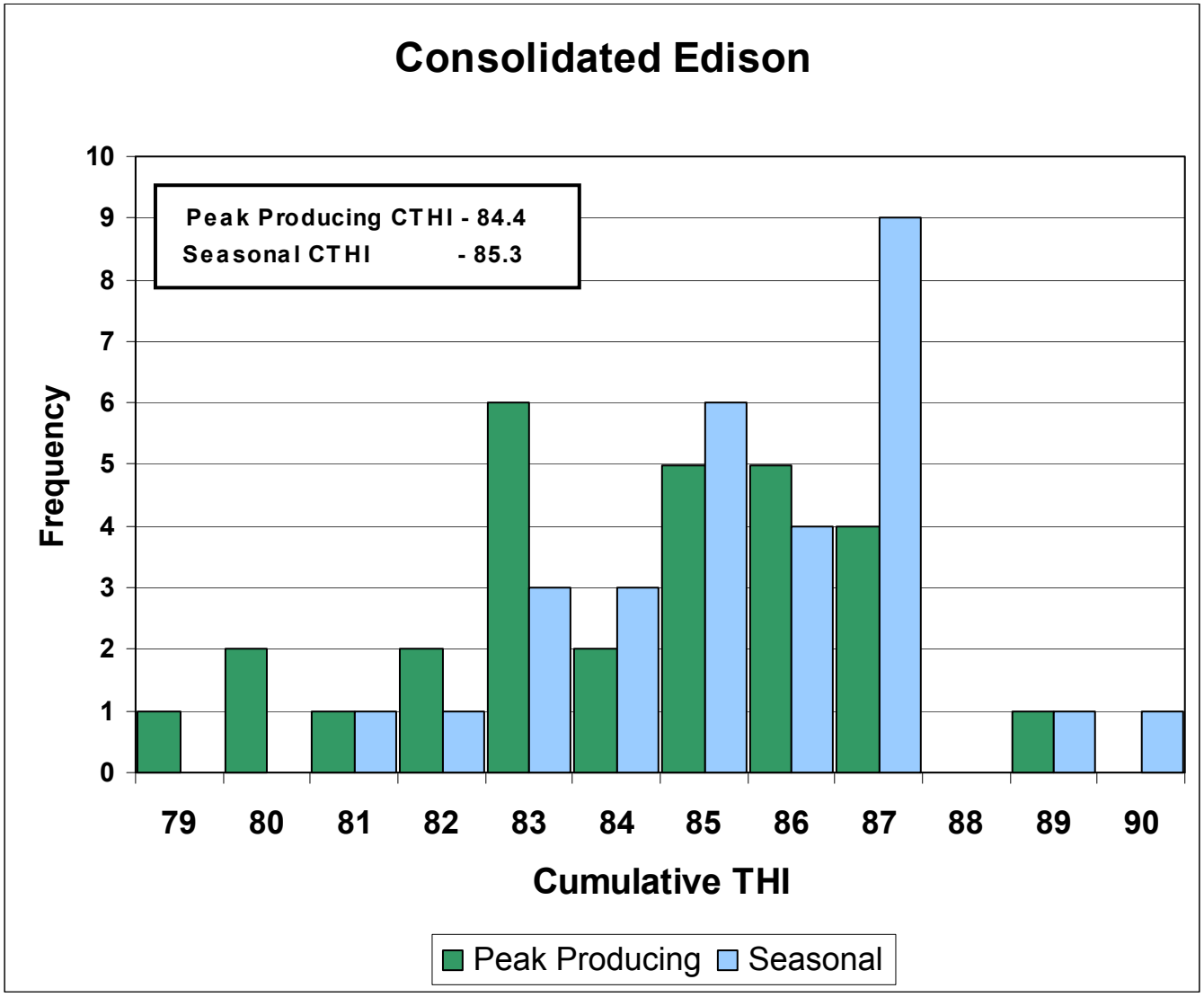
ICAP 2003 Weather Normalization

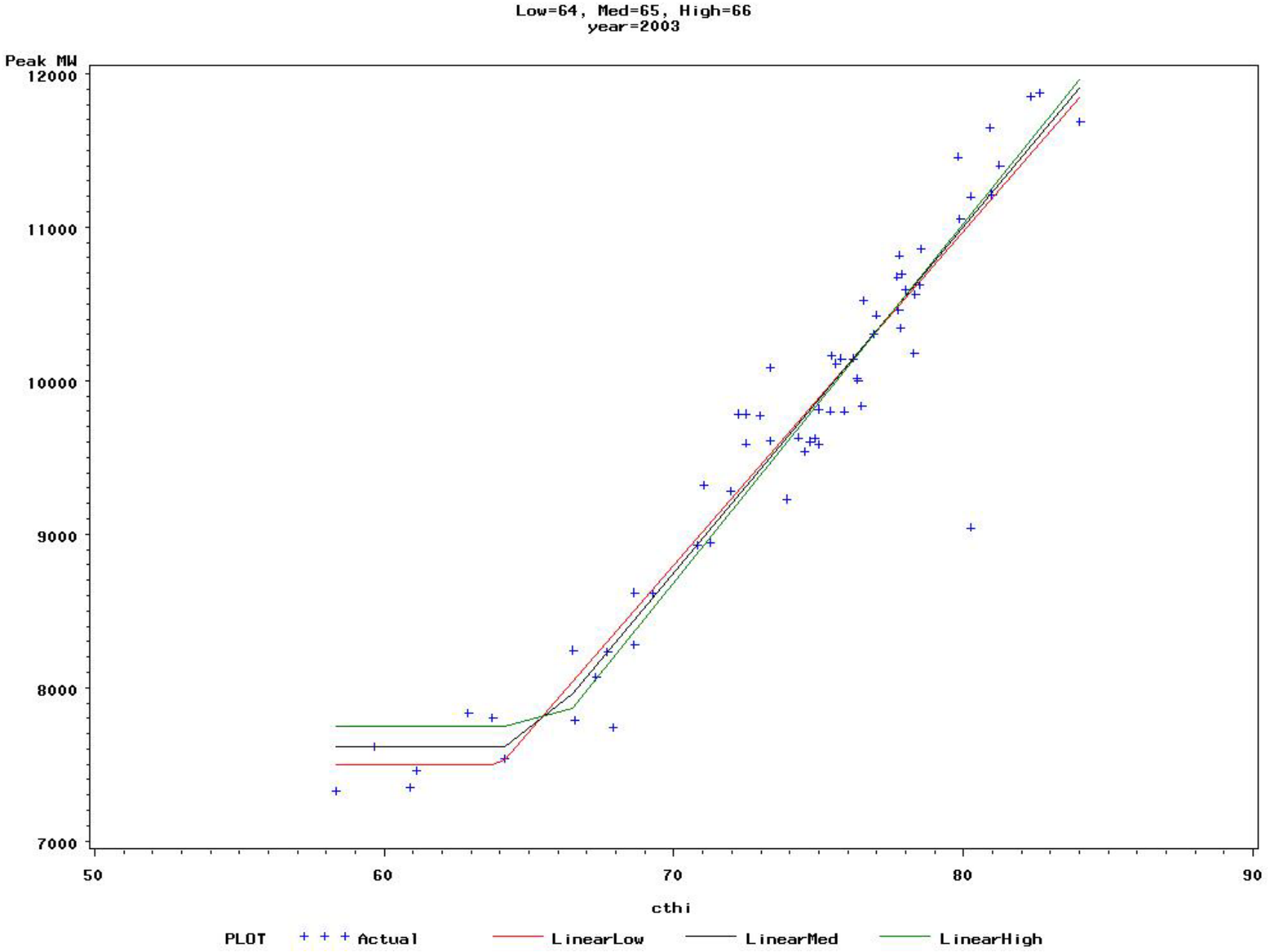
for Central Hudson

(1) Estimate of 2003 & 2004 Weather Normalized Coincident Peak Demand

Row	Description	Value	Units	Notes
(a)	Normal CTHI, 1-in-2 Design Value	83.8	F	
(b)	Actual CTHI	84.0	F	
(c)	Delta CTHI	-0.2	F	(a) - (b)
(d)	CTHI Coefficient	21.68	MW/F	from regression model
(e)	MW Adjustment, Peak Hour	-4	MW	(c) * (d)
(f)	Hourly Coincidence Factor	1.000		from reference load profiles
(g)	MW Adjustment, at Coincident Hour	-4	MW	(e) * (f)
(h)	Actual 2003 Coincident Load	1078	MW	
(i)	Normal 2003 Coincident Load	1074		(g) + (h)


Orange & Rockland Reference Load Profiles - 2003
Reference Load Peaks at Hr 18, One Hour After NYISO Peak
MW
1000
900
800
700
600
500
400
300
200
100
0
0
4
8
12
16
20
24
hourly coincidence factor
= (318/330) = .966
318 MW
330 MW
NYISO Peak Hour
O & R Peak Hour
High_CTHI
CTHI_65


Consolidated Edison
Peak Producing CTHI - 84.4
Seasonal CTHI - 85.3
Frequency
0
1
2
3
4
5
6
7
8
9
10
79
80
81
82
83
84
85
86
87
88
89
90
Cumulative THI
Peak Producing
Seasonal


Con Edison Summer Peak vs CTHI
Low=64, Med=65, High=66
year=2003
Peak MW
12000
11000
10000
9000
8000
7000
50
60
70
80
90
cthi
PLOT
Actual
LinearLow
LinearMed
LinearHigh

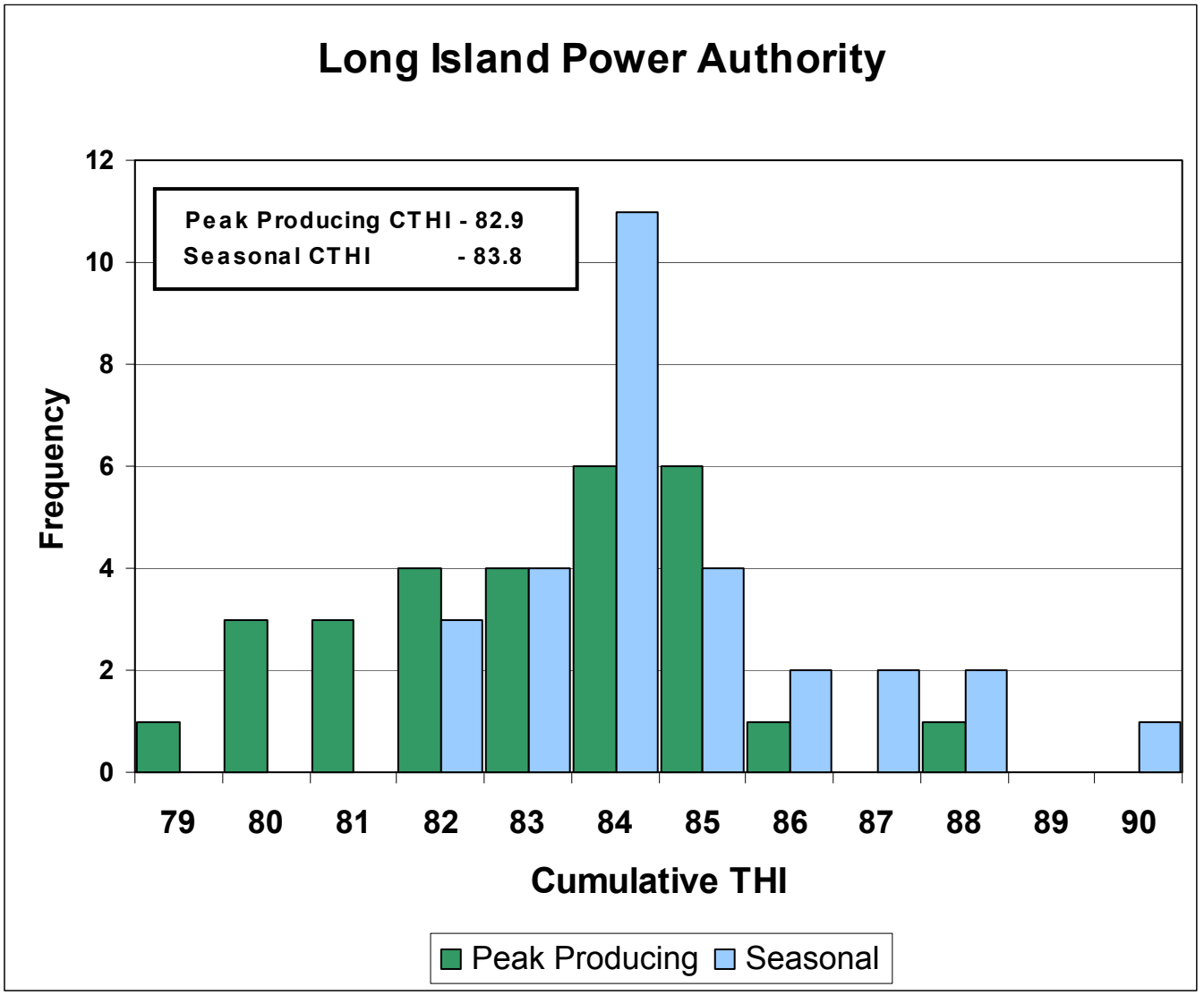
New York Independent System Operator

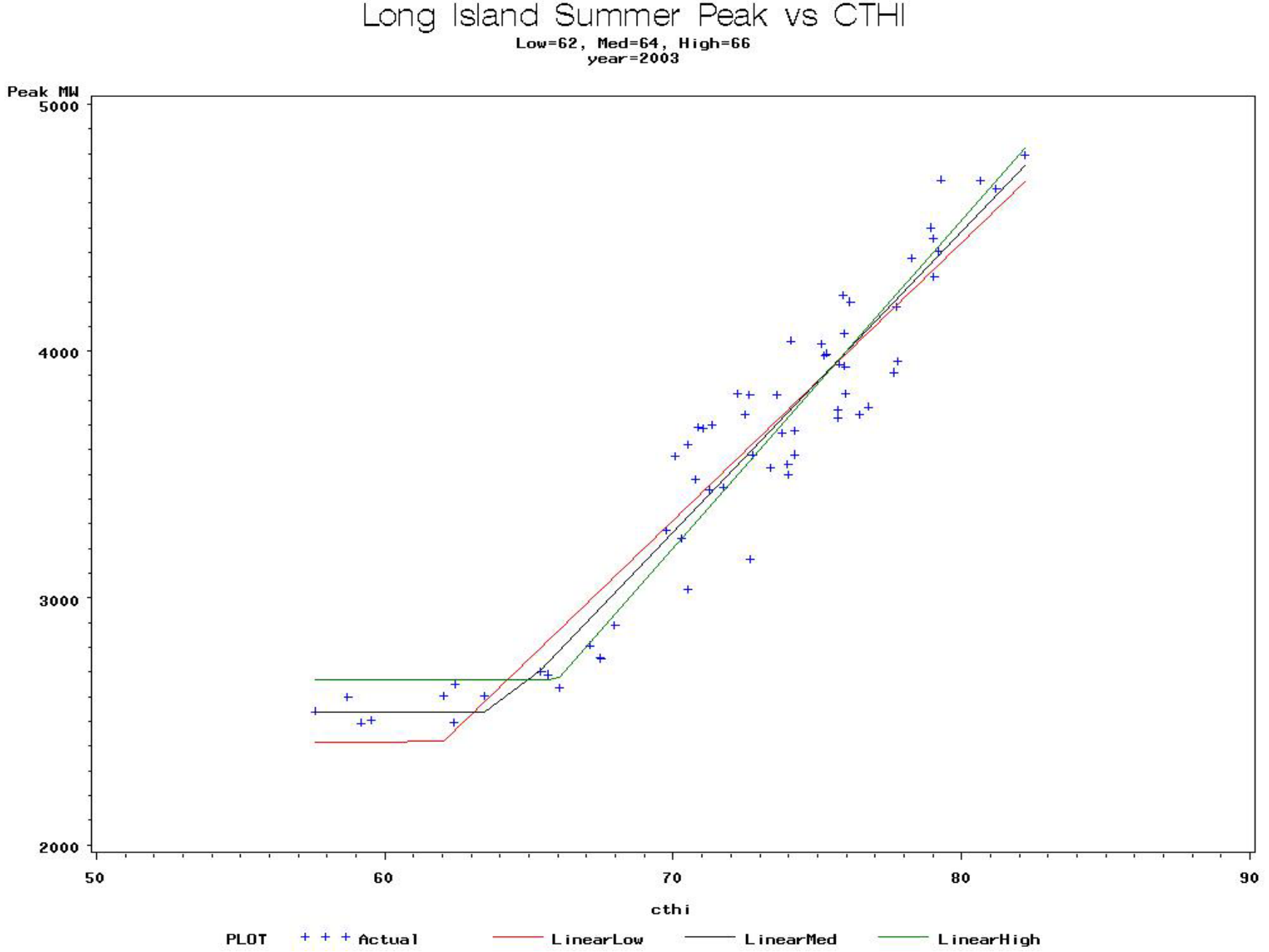
ICAP 2003 Weather Normalization

for Consolidated Edison

(1) Estimate of 2003 & 2004 Weather Normalized Coincident Peak Demand

Row	Description	Value	Units	Notes
(a)	Normal CTHI, 1-in-2 Design Value	84.4	F	
(b)	Actual CTHI	82.6	F	
(c)	Delta CTHI	1.8	F	(a) - (b)
(d)	CTHI Coefficient	225.5	MW/F	from regression model
(e)	MW Adjustment, Peak Hour	406	MW	(c) * (d)
(f)	Hourly Coincidence Factor	0.996		from reference load profiles
(g)	MW Adjustment, at Coincident Hour	404	MW	(e) * (f)
(h)	Actual 2003 Coincident Load	11852	MW	
(i)	Normal 2003 Coincident Load	12256		(g) + (h)


Long Island Power Authority
Peak Producing CTHI - 82.9
Seasonal CTHI - 83.8
Frequency
0
2
4
6
8
10
12
79
80
81
82
83
84
85
86
87
88
89
90
Cumulative THI
Peak Producing
Seasonal


Long Island Summer Peak vs CTHI
Low=62, Med=64, High=66
year=2003
Peak MW
5000
4000
3000
2000
50
60
70
80
90
cthi
PLOT
Actual
LinearLow
LinearMed
LinearHigh

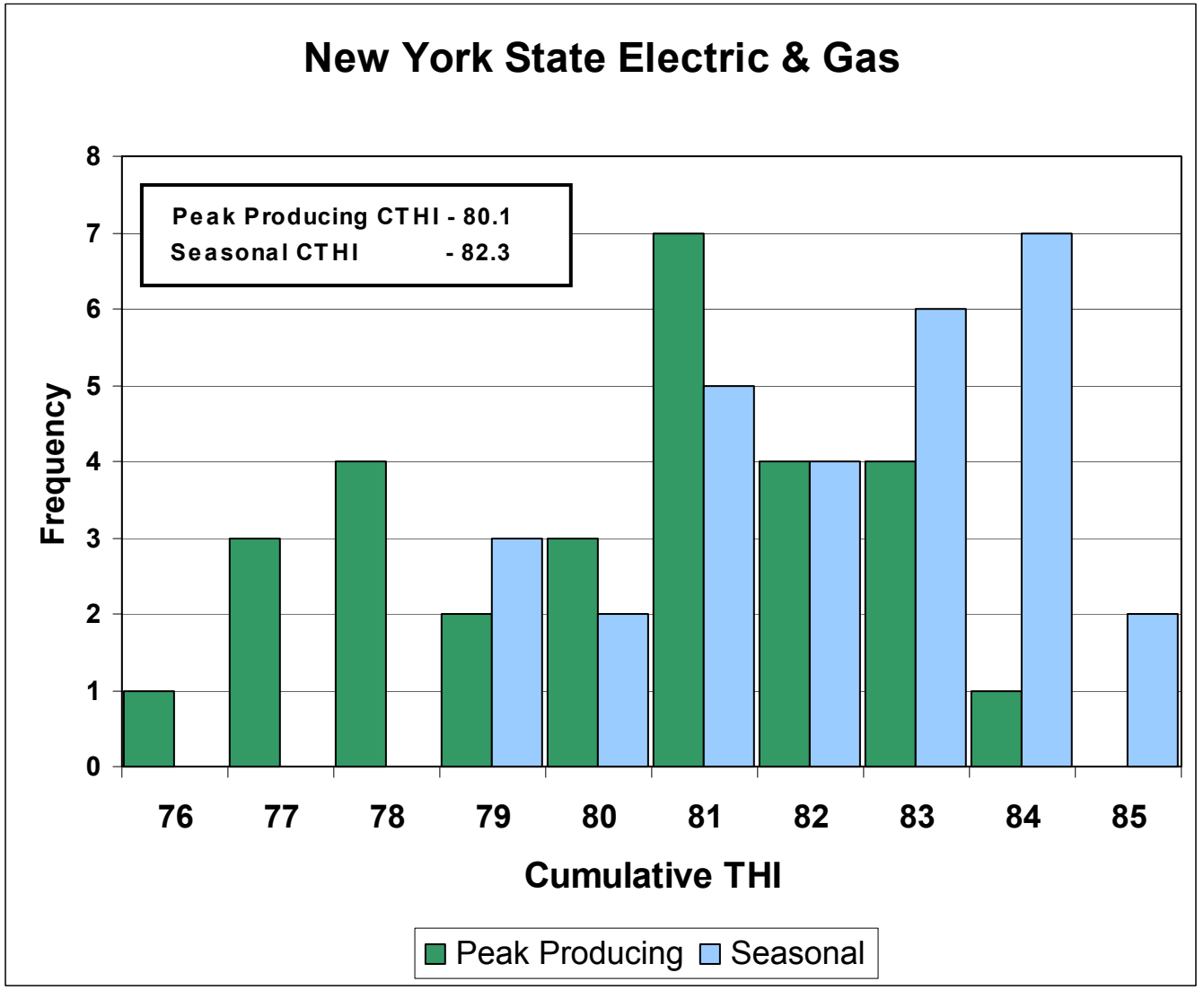
New York Independent System Operator

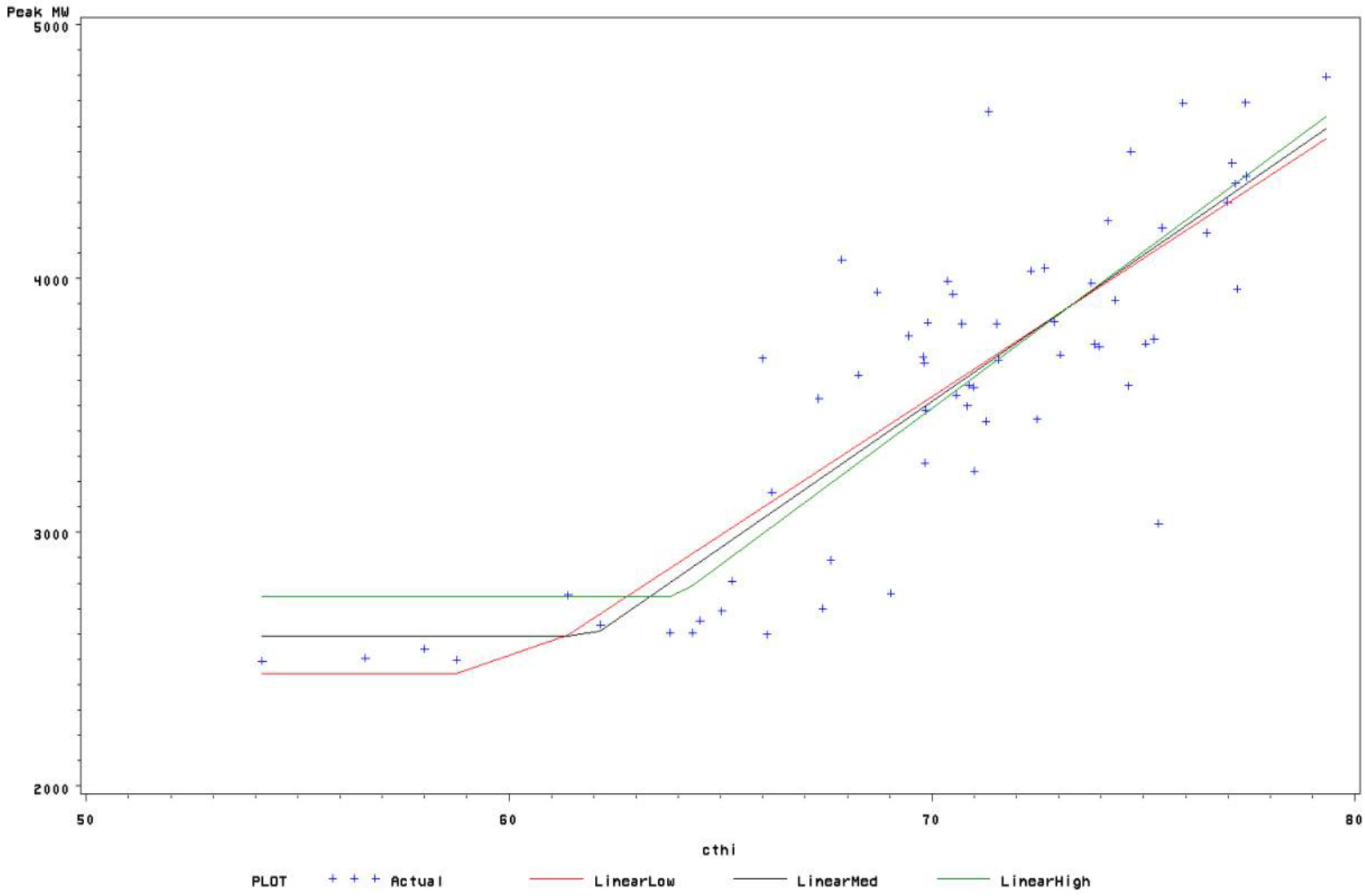
ICAP 2003 Weather Normalization

for Long Island Power Authority

(1) Estimate of 2003 & 2004 Weather Normalized Coincident Peak Demand

Row	Description	Value	Units	Notes
(a)	Normal CTHI, 1-in-2 Design Value	82.9	F	
(b)	Actual CTHI	82.2	F	
(c)	Delta CTHI	0.7	F	(a) - (b)
(d)	CTHI Coefficient	121.8	MW/F	from regression model
(e)	MW Adjustment, Peak Hour	85	MW	(c) * (d)
(f)	Hourly Coincidence Factor	1.000		from reference load profiles
(g)	MW Adjustment, at Coincident Hour	85	MW	(e) * (f)
(h)	Actual 2003 Coincident Load	4794	MW	
(i)	Normal 2003 Coincident Load	4879		(g) + (h)


New York State Electric & Gas
Peak Producing CTHI - 80.1
Seasonal CTHI - 82.3
Frequency
0
1
2
3
4
5
6
7
8
76
77
78
79
80
81
82
83
84
85
Cumulative THI
Peak Producing
Seasonal


NYSEG Summer Peak vs CTHI
Low=60, Med=62, High=64
year=2003
Peak MW
5000
4000
3000
2000
50
60
70
80
cthi
PLOT
Actual
LinearLow
LinearMed
LinearHigh

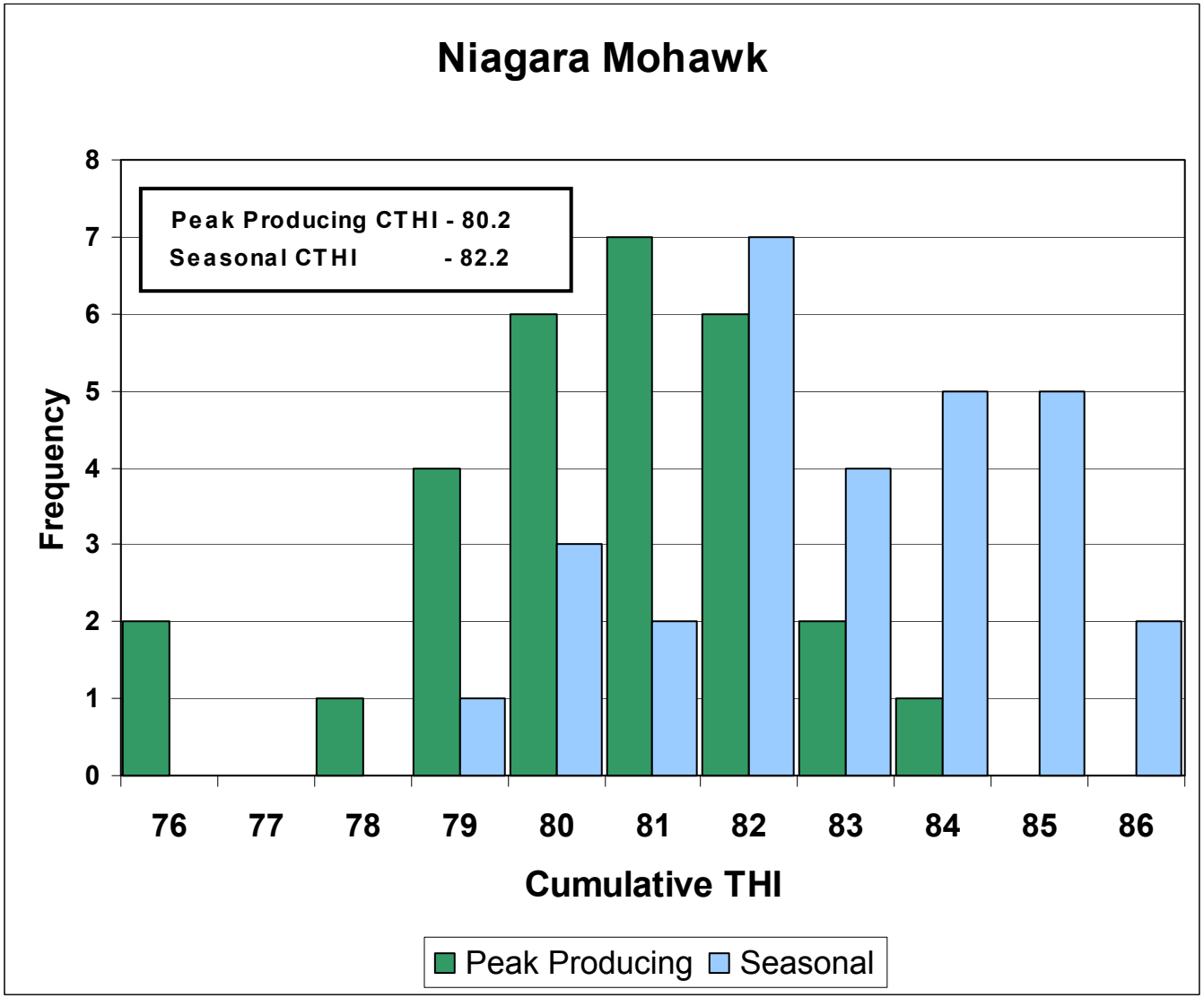
New York Independent System Operator

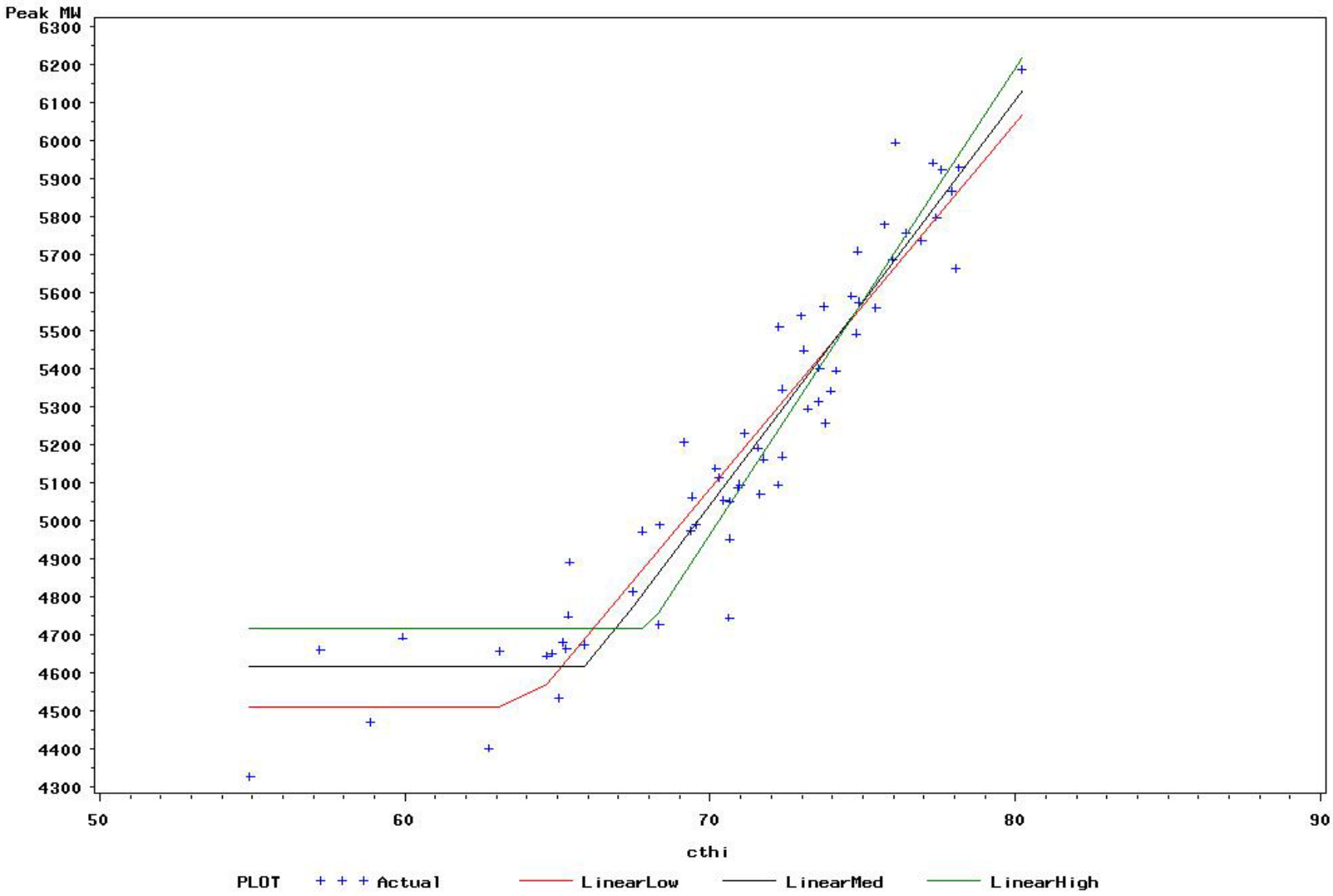
ICAP 2003 Weather Normalization

for New York State Electric and Gas

(1) Estimate of 2003 & 2004 Weather Normalized Coincident Peak Demand

Row	Description	Value	Units	Notes
(a)	Normal CTHI, 1-in-2 Design Value	80.1	F	
(b)	Actual CTHI	79.3	F	
(c)	Delta CTHI	0.8	F	(a) - (b)
(d)	CTHI Coefficient	115.4	MW/F	from regression model
(e)	MW Adjustment, Peak Hour	92	MW	(c) * (d)
(f)	Hourly Coincidence Factor	1.000		from reference load profiles
(g)	MW Adjustment, at Coincident Hour	92	MW	(e) * (f)
(h)	Actual 2003 Coincident Load	2501	MW	
(i)	Normal 2003 Coincident Load	2593		(g) + (h)


Niagara Mohawk
Peak Producing CTHI - 80.2
Seasonal CTHI - 82.2
Frequency
0
1
2
3
4
5
6
7
8
76
77
78
79
80
81
82
83
84
85
86
Cumulative THI
Peak Producing
Seasonal


Niagara Mohawk Summer Peak vs CTHI
Low=64, Med=66, High=68
year=2003
Peak MW
6300
6200
6100
6000
5900
5800
5700
5600
5500
5400
5300
5200
5100
5000
4900
4800
4700
4600
4500
4400
4300
50
60
70
80
90
cthi
PLOT + + + Actual
LinearLow
LinearMed
LinearHigh

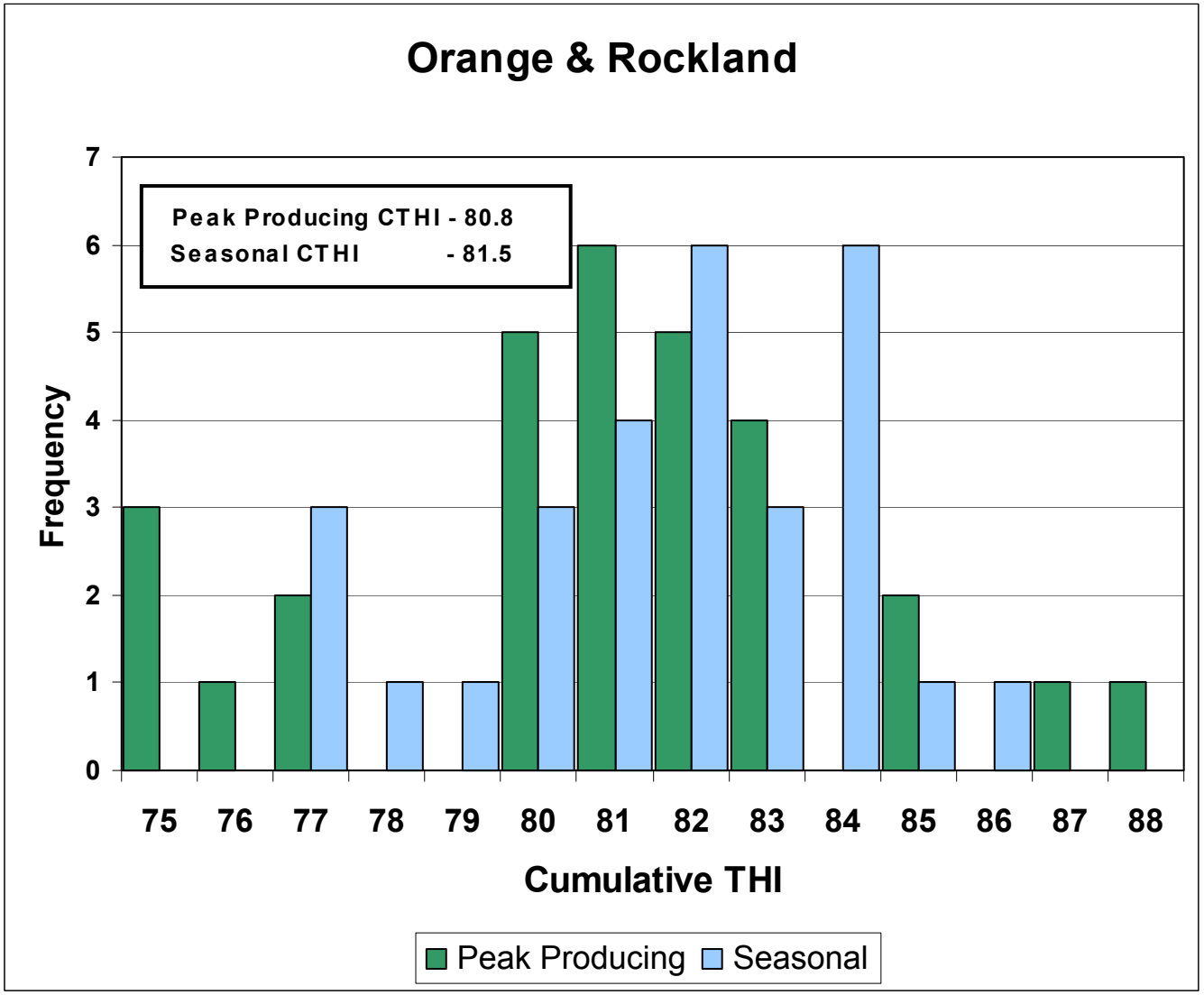
New York Independent System Operator

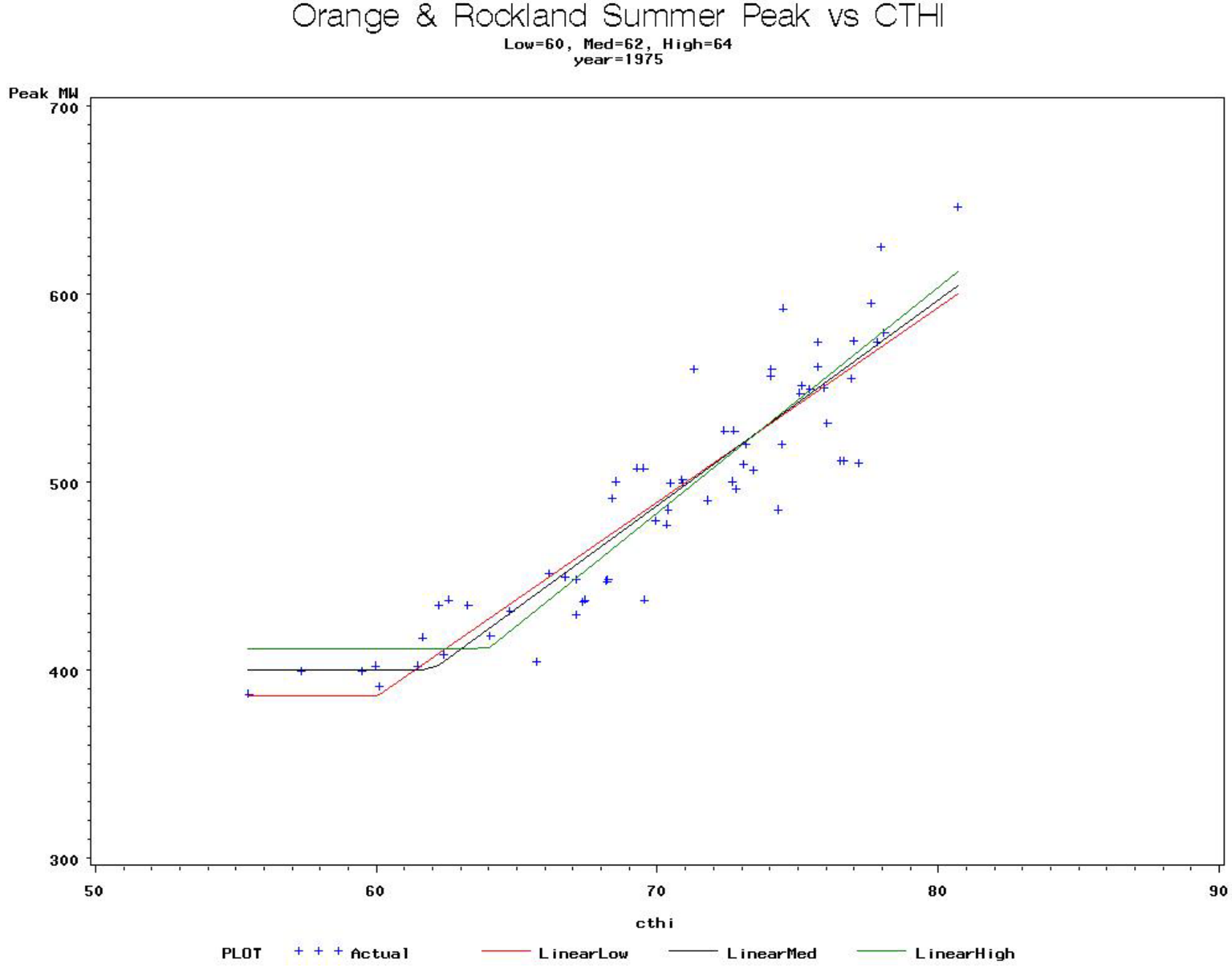
ICAP 2003 Weather Normalization

for Niagara Mohawk

(1) Estimate of 2003 & 2004 Weather Normalized Coincident Peak Demand

Row	Description	Value	Units	Notes
(a)	Normal CTHI, 1-in-2 Design Value	80.2	F	
(b)	Actual CTHI	80.2	F	
(c)	Delta CTHI	0	F	(a) - (b)
(d)	CTHI Coefficient	106.5	MW/F	from regression model
(e)	MW Adjustment, Peak Hour	0	MW	(c) * (d)
(f)	Hourly Coincidence Factor	1.000		from reference load profiles
(g)	MW Adjustment, at Coincident Hour	0	MW	(e) * (f)
(h)	Actual 2003 Coincident Load	6127	MW	
(i)	Normal 2003 Coincident Load	6127		(g) + (h)


Orange & Rockland
Peak Producing CTHI - 80.8
Seasonal CTHI - 81.5
Frequency
0
1
2
3
4
5
6
7
75
76
77
78
79
80
81
82
83
84
85
86
87
88
Cumulative THI
Peak Producing
Seasonal


Orange & Rockland Summer Peak vs CTHI
Low=60, Med=62, High=64
year=1975
Peak MW
700
600
500
400
300
50
60
70
80
90
cthi
PLOT
Actual
LinearLow
LinearMed
LinearHigh

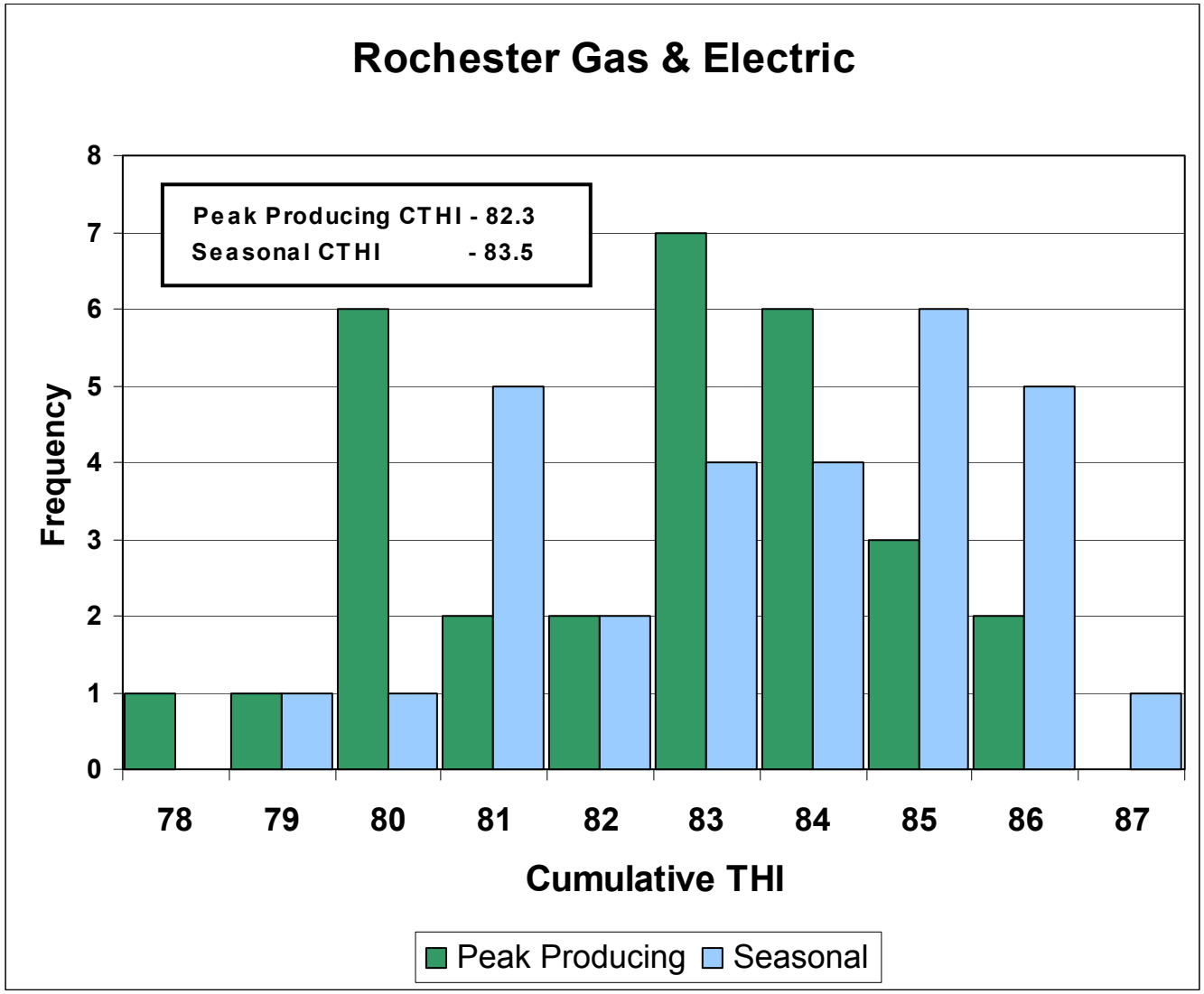
New York Independent System Operator

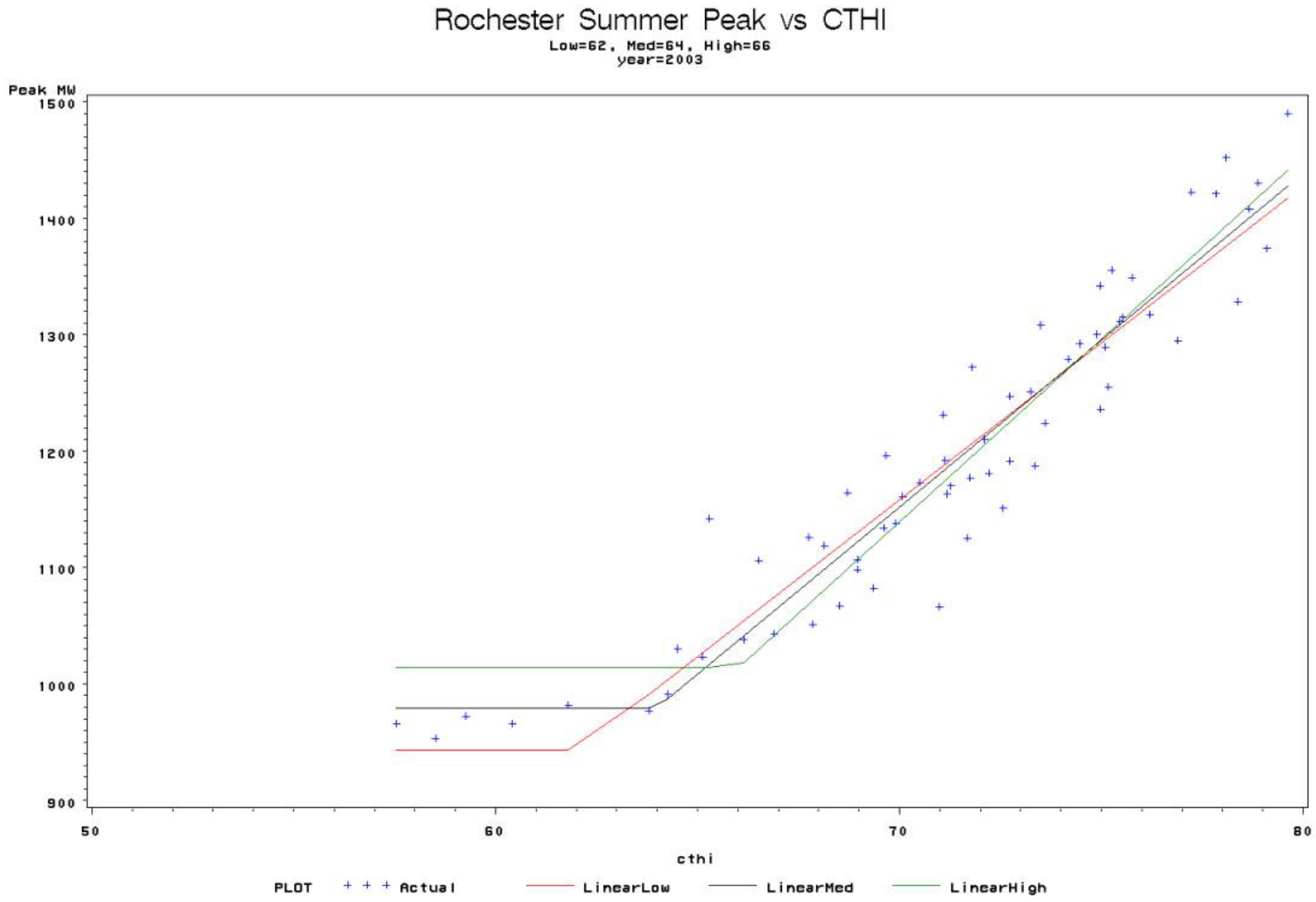
ICAP 2003 Weather Normalization

for Orange & Rockland

(1) Estimate of 2003 & 2004 Weather Normalized Coincident Peak Demand

Row	Description	Value	Units	Notes
(a)	Normal CTHI, 1-in-2 Design Value	80.8	F	
(b)	Actual CTHI	79.9	F	
(c)	Delta CTHI	0.9	F	(a) - (b)
(d)	CTHI Coefficient	23.4	MW/F	from regression model
(e)	MW Adjustment, Peak Hour	21	MW	(c) * (d)
(f)	Hourly Coincidence Factor	0.966		from reference load profiles
(g)	MW Adjustment, at Coincident Hour	20	MW	(e) * (f)
(h)	Actual 2003 Coincident Load	995	MW	
(i)	Normal 2003 Coincident Load	1015		(g) + (h)


Rochester Gas & Electric
Peak Producing CTHI - 82.3
Seasonal CTHI - 83.5
Frequency
0
1
2
3
4
5
6
7
8
78
79
80
81
82
83
84
85
86
87
Cumulative THI
Peak Producing
Seasonal


Rochester Summer Peak vs CTHI
Low=62, Med=64, High=66
year=2003
Peak MW
1500
1400
1300
1200
1100
1000
900
50
60
70
80
cthi
PLOT
Actual
LinearLow
LinearMed
LinearHigh

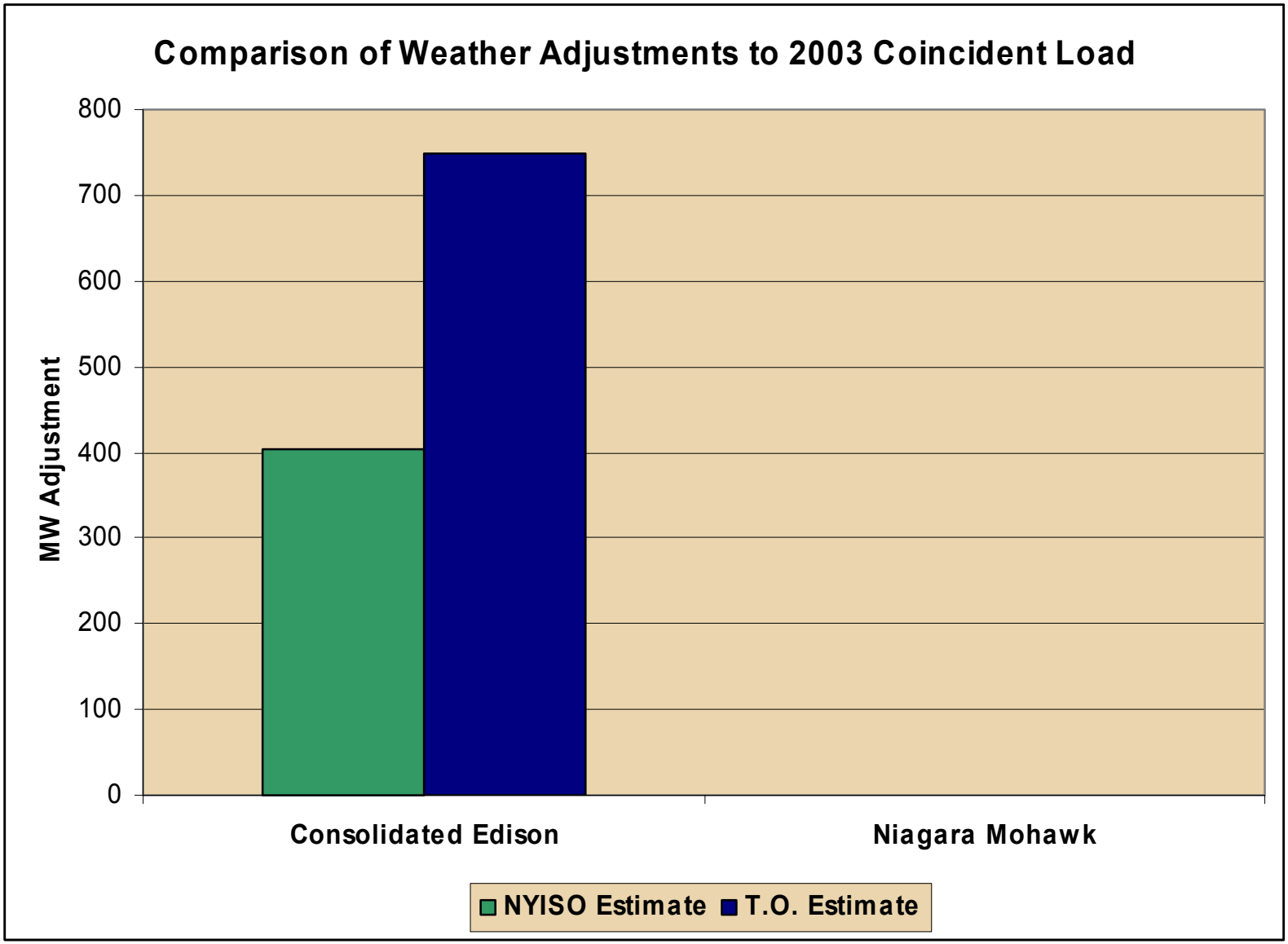
New York Independent System Operator

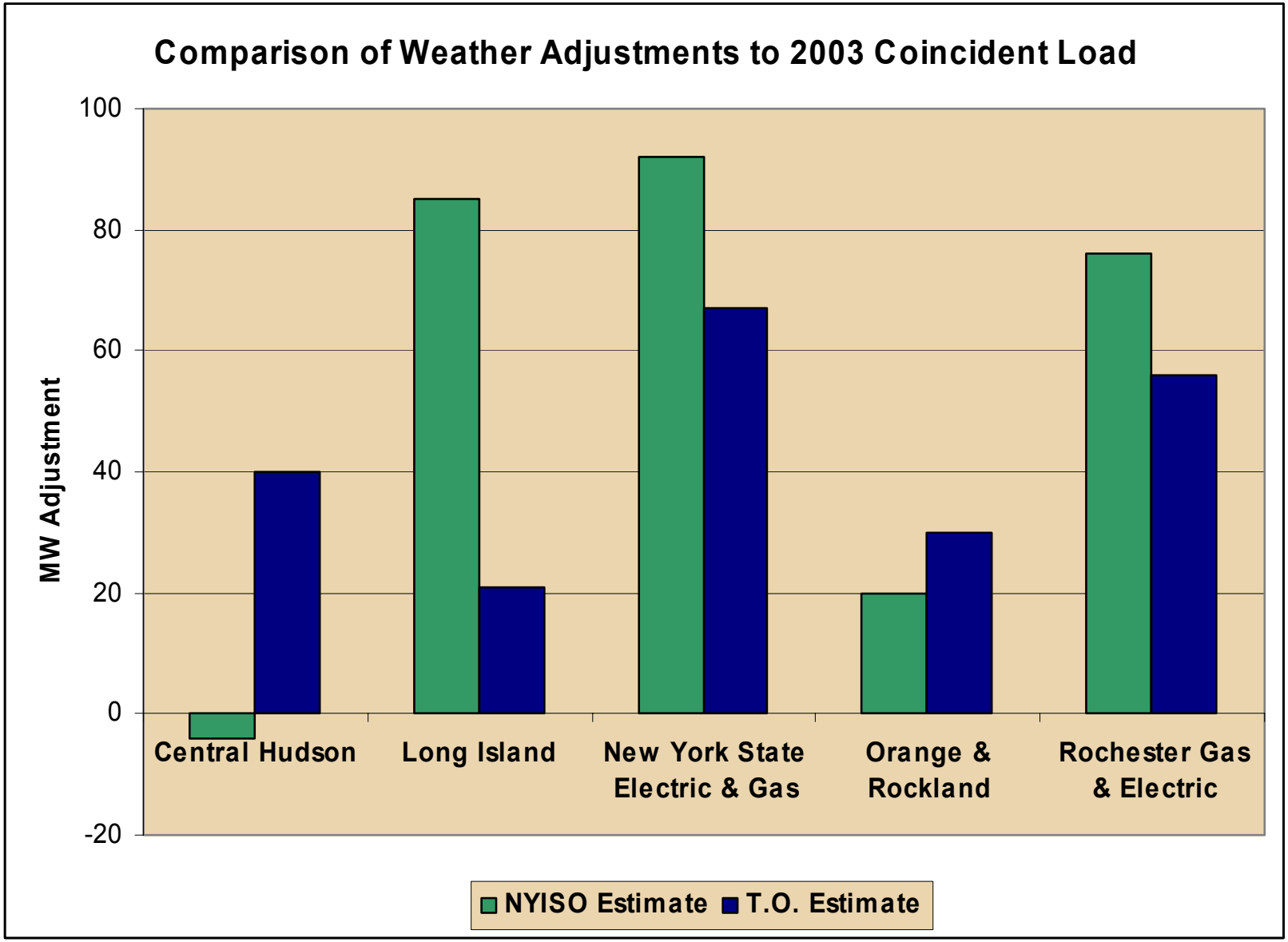
ICAP 2003 Weather Normalization

for Rochester Gas & Electric

(1) Estimate of 2003 & 2004 Weather Normalized Coincident Peak Demand

Row	Description	Value	Units	Notes
(a)	Normal CTHI, 1-in-2 Design Value	82.2	F	
(b)	Actual CTHI	79.6	F	
(c)	Delta CTHI	2.6	F	(a) - (b)
(d)	CTHI Coefficient	28.7	MW/F	from regression model
(e)	MW Adjustment, Peak Hour	75	MW	(c) * (d)
(f)	Hourly Coincidence Factor	1.013		from reference load profiles
(g)	MW Adjustment, at Coincident Hour	76	MW	(e) * (f)
(h)	Actual 2003 Coincident Load	1485	MW	
(i)	Normal 2003 Coincident Load	1561		(g) + (h)


Comparison of Weather Adjustments to 2003 Coincident Load
MW Adjustment
800
700
600
500
400
300
200
100
0
Consolidated Edison
Niagara Mohawk
NYISO Estimate
T.O. Estimate


Comparison of Weather Adjustments to 2003 Coincident Load
MW Adjustment
100
80
60
40
20
0
-20
Central Hudson
Long Island
New York State Electric & Gas
Orange & Rockland
Rochester Gas & Electric
NYISO Estimate
T.O. Estimate