

ICAP Load Forecast Process

Regional Load Growth Factors Acceptance Criteria

1. RLGFs should be within 5 year range of AAPL growth
2. Same relationship to economic growth in forecast as in history
3. ISO projections of TD RLGf

TD RLFG forecast should be consistent with 2 of three

May need to combine 1. and 2. under certain circumstances

Central Hudson

	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	2004	Correlation of W/N Peak and:
Employment	186.58	194.31	198.66	203.92	206.06	209.02	210.76	Employment 0.7789
Output	10.74	11.21	11.47	11.62	12.21	12.61	13.04	Output 0.9057
Households	179.39	182.68	185.75	187.32	189.11	190.51	191.86	Households 0.7880
Population	497.35	502.74	507.46	511.73	516.77	520.58	523.6	Population 0.8532
Income	12602	12901	13593	14060	14163	14417	14816	Income 0.7567

Growth

Employment	1.0414	1.0224	1.0265	1.0105	1.0144	1.0083
Output	1.0438	1.0232	1.0131	1.0508	1.0328	1.0341
Households	1.0183	1.0168	1.0085	1.0096	1.0074	1.0071
Population	1.0108	1.0094	1.0084	1.0098	1.0074	1.0058
Income	1.0237	1.0536	1.0344	1.0073	1.0179	1.0277

W/N Peaks	952	970	968	985	1020	1118
W/N Peak Growth	1.019	0.998	1.018	1.036	1.096	
	1.01891		1.01756	1.03553		

Peak Growth divided by:

Employment Growth	0.978	0.976	0.991	1.025	1.081
Output Growth	0.976	0.975	1.004	0.985	1.061
Households Growth	1.001	0.981	1.009	1.026	1.088
Population Growth	1.008	0.989	1.009	1.025	1.088
Income Growth	0.995	0.947	0.984	1.028	1.077

Composite indicator

	1.0320	1.0183	1.0156	1.0247	1.0186	1.0167
Peak Growth/CI	0.9873	0.9800	1.0019	1.0106	1.0761	

Peak Growth Rate Range	1.0038		1.0186	1.0275
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Consolidated Edison

	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	Correlation of W/N Peak and:	
Employment	3928.77	4031.22	4143.77	4115.29	3997.1	3952.59	3984.43	Employment	-0.0245
Output	437.5	459.62	505.04	513.39	514.91	525.23	541.77	Output	0.9096
Households	3282.81	3322.9	3365.8	3383.47	3392.05	3399.09	3410.28	Households	0.9322
Population	8782.28	8876.62	8951.11	8997.68	9024.33	9044.35	9062.46	Population	0.9515
Income	299118	309500	329432	332995	326997	325229	333650	Income	0.7436

	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>
Growth							
Employment		1.0261	1.0279	0.9931	0.9713	0.9889	1.0081
Output		1.0506	1.0988	1.0165	1.0030	1.0200	1.0315
Households		1.0122	1.0129	1.0052	1.0025	1.0021	1.0033
Population		1.0107	1.0084	1.0052	1.0030	1.0022	1.0020
Income		1.0347	1.0644	1.0108	0.9820	0.9946	1.0259

W/N Peaks	11450	11650	11825	12225	12400	12600		
W/N Peak Growth		1.0175	1.0150	1.0338	1.0143	1.0161		
		1.0175	1.0150			1.0161	1.0150	1.0175

Peak Growth divided by:

Employment Growth	0.9916	0.9875	1.0410	1.0443	1.0276
Output Growth	0.9685	0.9237	1.0170	1.0113	0.9962
Households Growth	1.0052	1.0021	1.0284	1.0117	1.0140
Population Growth	1.0067	1.0066	1.0285	1.0113	1.0139
Income Growth	0.9833	0.9536	1.0228	1.0329	1.0217

Composite indicator

	1.0315	1.0560	1.0108	0.9970	1.0063	1.0191
Peak Growth/CI	0.9864	0.9612	1.0228	1.0174	1.0098	

Peak Growth Rate Range	1.0053		1.0368	1.0291		1.0053	1.0368
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LIPA

	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	Correlation of W/N Peak and:
Employment	1147.74	1189.66	1217.38	1218.8	1211.67	1214.67	1227.03	Employment 0.7916
Output	80.98	84.44	88.36	87.4	90.54	92.15	94.52	Output 0.9545
Households	896.99	909.47	919.96	927.08	933.51	937.93	942.74	Households 0.9751
Population	2716.61	2740.19	2763.77	2785.33	2805.38	2818.43	2826.35	Population 0.9840
Income	98052	100011	105335	105561	104652	105249	107809	Income 0.8625

Growth							
Employment		1.0365	1.0233	1.0012	0.9941	1.0025	1.0102
Output		1.0427	1.0464	0.9891	1.0359	1.0178	1.0257
Households		1.0139	1.0115	1.0077	1.0069	1.0047	1.0051
Population		1.0087	1.0086	1.0078	1.0072	1.0047	1.0028
Income		1.0200	1.0532	1.0021	0.9914	1.0057	1.0243

W/N Peaks	4279	4348	4527	4622	4669	4835	
W/N Peak Growth		1.0161	1.0412	1.0210	1.0102	1.0355	
		1.0161		1.0210		1.0355	1.0161 1.0355

Peak Growth divided by:

Employment Growth	0.9803	1.0175	1.0198	1.0162	1.0329
Output Growth	0.9745	0.9950	1.0322	0.9752	1.0174
Households Growth	1.0022	1.0293	1.0132	1.0033	1.0306
Population Growth	1.0074	1.0323	1.0131	1.0030	1.0307
Income Growth	0.9962	0.9886	1.0188	1.0190	1.0296

Composite indicator

	1.0238	1.0352	0.9997	1.0121	1.0094	1.0172
Peak Growth/CI	0.9925	1.0057	1.0213	0.9981	1.0258	

Peak Growth Rate Range	1.0231	1.0389	1.0154			1.0154 1.0389
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Niagara Mohawk

	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	Correlation of W/N Peak and:	
Employment	1626.83	1666.67	1688.44	1684.79	1674.48	1674.13	1686.48	Employment	0.2492
Output	93.19	94.09	96.13	93.88	96.15	97.59	99.97	Output	-0.1897
Households	1372.14	1379.95	1385.11	1384.78	1386.49	1388.11	1390.95	Households	0.2364
Population	3528.25	3521.08	3518.36	3517.49	3522.71	3526.49	3525.92	Population	-0.3330
Income	84525	85917	88477	89061	89029	89555	91569	Income	0.4379

Growth

Employment	1.0245	1.0131	0.9978	0.9939	0.9998	1.0074
Output	1.0097	1.0217	0.9766	1.0242	1.0150	1.0244
Households	1.0057	1.0037	0.9998	1.0012	1.0012	1.0020
Population	0.9980	0.9992	0.9998	1.0015	1.0011	0.9998
Income	1.0165	1.0298	1.0066	0.9996	1.0059	1.0225

W/N Peaks	6152	5996	6098	6448	6231	6127
W/N Peak Growth	0.9746	1.0170	1.0574	0.9663	0.9833	
	0.9746	1.0170			0.9833	

0.9746 1.0170

Peak Growth divided by:

Employment Growth	0.9513	1.0039	1.0597	0.9723	0.9835
Output Growth	0.9653	0.9954	1.0827	0.9435	0.9688
Households Growth	0.9691	1.0132	1.0576	0.9652	0.9822
Population Growth	0.9766	1.0178	1.0577	0.9649	0.9823
Income Growth	0.9588	0.9876	1.0505	0.9667	0.9775

Composite indicator

	1.0159	1.0186	1.0025	0.9985	1.0030	1.0132
Peak Growth/CI	0.9594	0.9984	1.0548	0.9678	0.9803	

Peak Growth Rate Range

1.0116 **0.9806** **0.9932**

0.9806 1.0116

NYSEG

	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	Correlation of W/N Peak and:	
Employment	465.89	479.04	490.72	510.25	515.83	518.3	525.28	Employment	0.9377
Output	22.66	23	23.69	24.36	25.54	26.62	27.66	Output	0.9471
Households	427.26	431.53	435.57	436.98	438.36	438.68	439.28	Households	0.8715
Population	1135.71	1137.15	1139.12	1142.82	1146.79	1147.66	1148.34	Population	0.9363
Income	26167.6	26815.9	28197.7	28746.7	29193.1	29663.3	30449.7	Income	0.9398

Growth							
Employment		1.0282	1.0244	1.0398	1.0109	1.0048	1.0135
Output		1.0150	1.0300	1.0283	1.0484	1.0423	1.0391
Households		1.0100	1.0094	1.0032	1.0032	1.0007	1.0014
Population		1.0013	1.0017	1.0032	1.0035	1.0008	1.0006
Income		1.0248	1.0515	1.0195	1.0155	1.0161	1.0265

W/N Peaks	2515	2516	2528	2547	2543	2563
W/N Peak Growth		1.0004	1.0048	1.0075	0.9984	1.0079
		1.0004	1.0048	1.0075		

1.0004 1.0075

Peak Growth divided by:

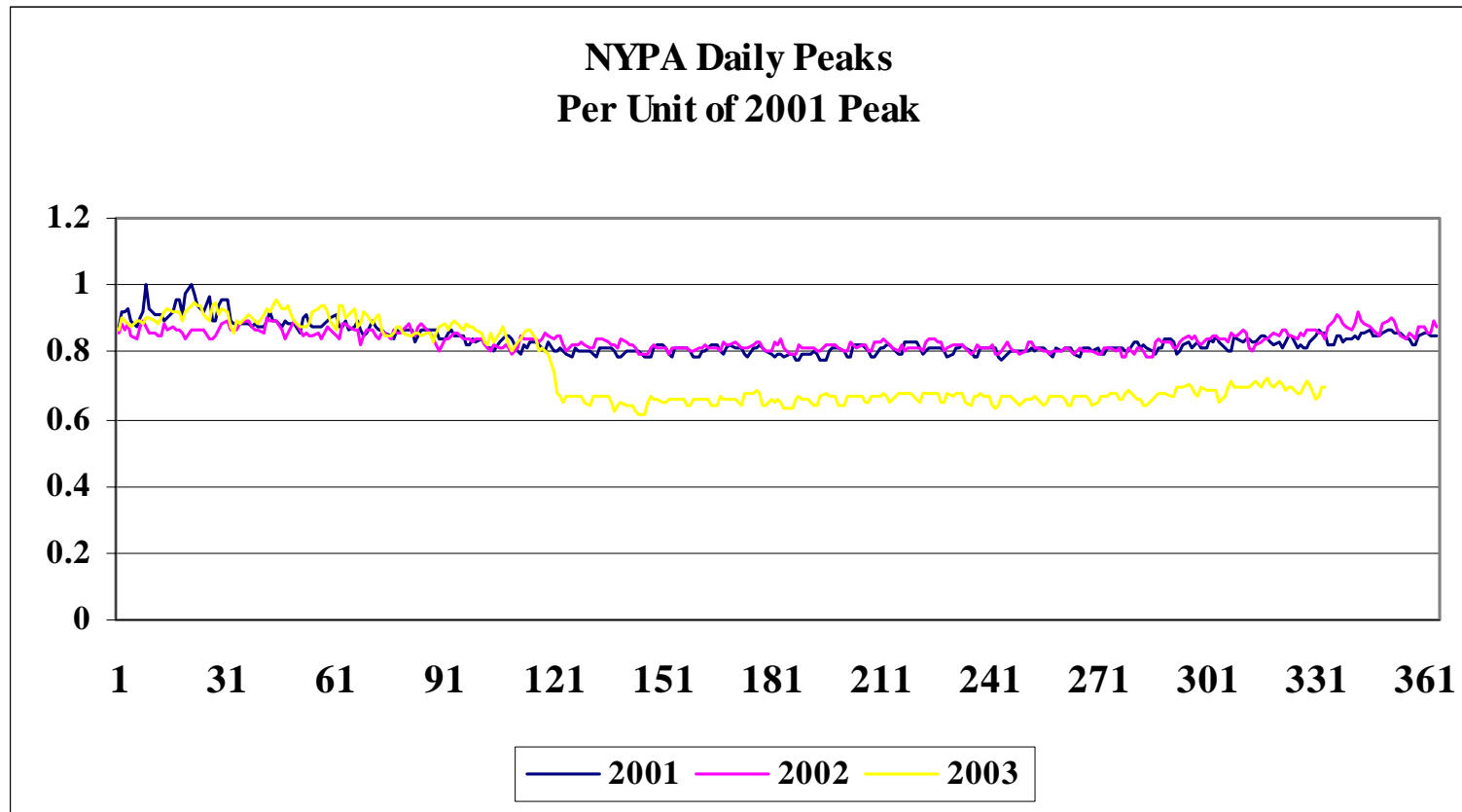
Employment Growth	0.9729	0.9809	0.9690	0.9876	1.0031
Output Growth	0.9856	0.9755	0.9798	0.9523	0.9670
Households Growth	0.9905	0.9955	1.0043	0.9953	1.0071
Population Growth	0.9991	1.0030	1.0043	0.9950	1.0071
Income Growth	0.9762	0.9555	0.9883	0.9832	0.9919

Composite indicator

	1.0226	1.0353	1.0292	1.0250	1.0211	1.0264
Peak Growth/CI	0.9782	0.9705	0.9790	0.9740	0.9870	

Peak Growth Rate Range	1.0041	1.0048	0.9997		0.9997	1.0048
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NYPA



O & R

	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	Correlation of W/N Peak and:	
Employment	99.62	104.54	106.12	105.77	105.67	105.53	106.52	Employment	0.6856
Output	6.99	7.16	7.18	7.07	7.25	7.42	7.6	Output	0.8251
Households	89.92	91.49	92.98	93.66	94.31	94.52	94.89	Households	0.9552
Population	282.47	285.55	287.75	289.79	291.87	292.49	293.15	Population	0.9830
Income	9600	9879	10260	10091	10265	10306	10566	Income	0.8697
Growth									
Employment		1.0494	1.0151	0.9967	0.9991	0.9987	1.0094		
Output		1.0243	1.0028	0.9847	1.0255	1.0234	1.0243		
Households		1.0175	1.0163	1.0073	1.0069	1.0022	1.0039		
Population		1.0109	1.0077	1.0071	1.0072	1.0021	1.0023		
Income		1.0290	1.0385	0.9836	1.0172	1.0040	1.0252		
W/N Peaks	1250	1280	1325	1355	1410	1435			
W/N Peak Growth		1.0240	1.0352	1.0226	1.0406	1.0177			
		1.0240	1.0352	1.0226				1.0226	1.0352
Peak Growth divided by:									
Employment Growth		0.9758	1.0197	1.0260	1.0416	1.0191			
Output Growth		0.9997	1.0323	1.0386	1.0148	0.9944			
Households Growth		1.0064	1.0186	1.0152	1.0334	1.0155			
Population Growth		1.0130	1.0272	1.0154	1.0332	1.0156			
Income Growth		0.9951	0.9967	1.0397	1.0230	1.0136			
<u>Composite indicator</u>									
Peak Growth/CI		1.0209	1.0162	0.9925	1.0161	1.0093	1.0165		
		1.0030	1.0186	1.0303	1.0241	1.0083			
Peak Growth Rate Range			1.0354		1.0410	1.0250		1.0250	1.0410

RG & E

	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	Correlation of W/N Peak and:	
Employment	539.51	548.12	553.23	549.78	534.07	525.18	527.26	Employment	-0.5915
Output	33.15	33.2	33.84	32.99	33.71	34.01	34.72	Output	0.4327
Households	414.75	417.78	420.32	420.76	421.87	423.35	425.62	Households	0.8445
Population	1096.2	1096.73	1098.87	1100	1103.17	1106.94	1110.31	Population	0.8846
Income	28755	28975	29528	29983	29451	29465	30091	Income	0.6661

Growth							
Employment		1.0160	1.0093	0.9938	0.9714	0.9834	1.0040
Output		1.0015	1.0193	0.9749	1.0218	1.0089	1.0209
Households		1.0073	1.0061	1.0010	1.0026	1.0035	1.0054
Population		1.0005	1.0020	1.0010	1.0029	1.0034	1.0030
Income		1.0077	1.0191	1.0154	0.9823	1.0005	1.0212

W/N Peaks	1403	1392	1430	1512	1556	1541
W/N Peak Growth		0.9926	1.0270	1.0575	1.0291	0.9904
		0.9926	1.0270		1.0291	

0.9926 1.0291

Peak Growth divided by:

Employment Growth	0.9770	1.0175	1.0641	1.0594	1.0071
Output Growth	0.9911	1.0076	1.0847	1.0071	0.9816
Households Growth	0.9854	1.0208	1.0564	1.0264	0.9869
Population Growth	0.9921	1.0250	1.0564	1.0261	0.9870
Income Growth	0.9850	1.0078	1.0414	1.0477	0.9899

Composite indicator

Peak Growth/CI	1.0031	1.0115	1.0002	1.0001	1.0036	1.0130
	0.9895	1.0153	1.0573	1.0290	0.9868	

Peak Growth Rate Range	1.0024	1.0286		1.0424		1.0024	1.0424
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ICAP Load Forecast Process 2004 Criteria Summary

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Criteria 1: ¹⁾	Recent Historical Load Growth			Adjusted Range	
	<u>Minimum</u>	<u>Maximum</u>	<u>Range</u>	<u>Min</u>	<u>Max</u>
Central Hudson	1.0176	1.0355	1.80%		
Consolidated Edison	1.0150	1.0175	0.24%	1.0112	1.0212
LIPA	1.0161	1.0355	1.93%		
NYSEG	1.0004	1.0075	0.71%	0.9990	1.0090
Niagara Mohawk	0.9746	1.0170	4.24%		
NYPA	0.9189	1.0652	14.62%		
O&R	1.0226	1.0352	1.25%		
RG&E	0.9926	1.0291	3.65%		

Criteria 2: ¹⁾	Relationship to Economic Indicators			Adjusted Range	
	<u>Minimum</u>	<u>Maximum</u>	<u>Range</u>	<u>Min</u>	<u>Max</u>
Central Hudson	1.0038	1.0275	2.37%		
Consolidated Edison	1.0053	1.0291	2.38%		
LIPA	1.0154	1.0389	2.36%		
NYSEG	0.9997	1.0048	0.50%	0.9973	1.0073
Niagara Mohawk	0.9806	1.0116	3.10%		
NYPA					
O&R	1.0250	1.0410	1.61%		
RG&E	1.0024	1.0424	4.00%		

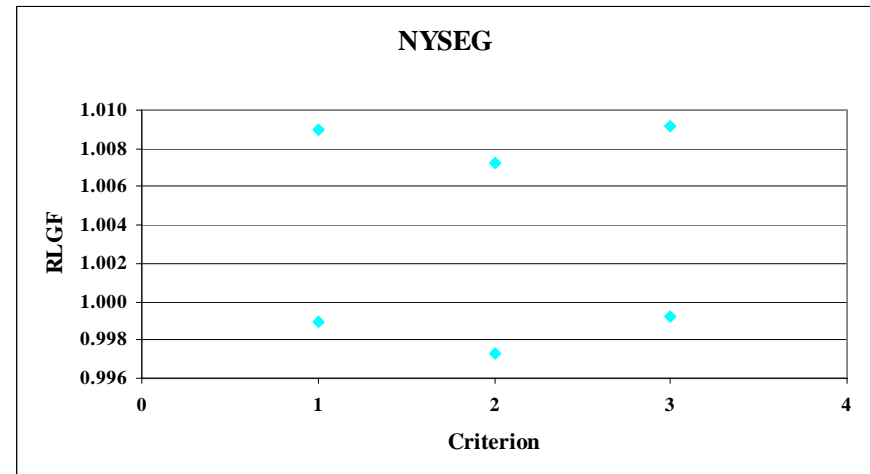
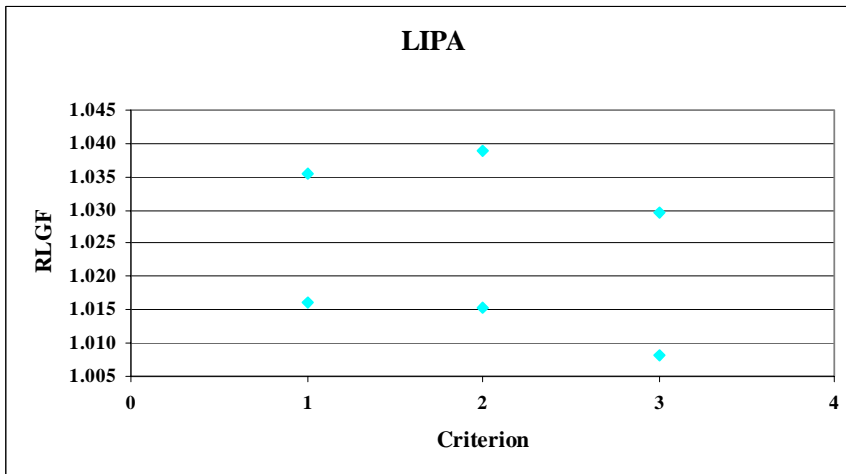
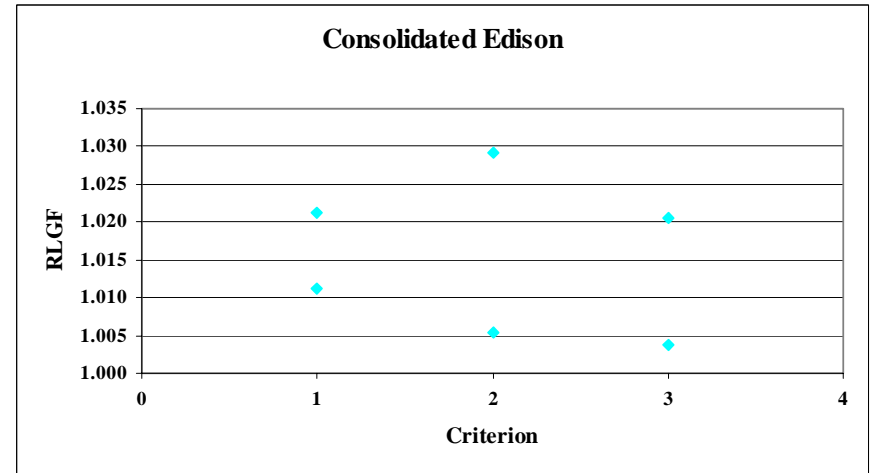
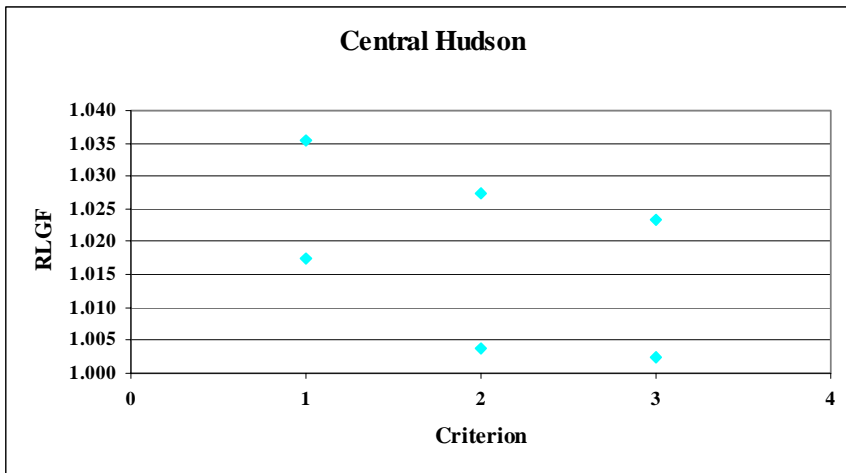
Criteria 3: Projections Performed by the NYISO				
	<u>Predicted</u>	<u>Minimum</u>	<u>Maximum</u>	<u>Range</u>
Central Hudson	1.0129	1.0025	1.0233	2.082%
Consolidated Edison	1.0121	1.0036	1.0206	1.692%
LIPA	1.0189	1.0082	1.0296	2.145%
NYSEG	1.0042	0.9992	1.0092	1.000%
Niagara Mohawk	0.9940	0.9757	1.0123	3.670%
NYPA				0.000%
O&R	1.0207	1.0136	1.0278	1.429%
RG&E	1.0129	0.9938	1.0320	3.825%

Criteria 4: Combined 1 & 2	
	<u>Minimum</u> <u>Maximum</u>
Central Hudson	
Consolidated Edison	
LIPA	
NYSEG	
Niagara Mohawk	
NYPA	
O&R	
RG&E	

1) Where the original range is < 1%, an adjustment has been made. A point 0.5% below the midpoint of the original range is used as the new Minimum, and one 0.5% above the midpoint is used as the maximum. This adjustment ameliorates situations where a forecasted RLG is highly unlikely to satisfy an evaluation criterion because the acceptance range is too narrow.

2) If criteria 1 and 2 do not overlap or only minimally overlap so that a submitted RLG cannot satisfy both, a combined criterion will be formed by averaging the minimums and maximums.

ICAP Load Forecast Process 2004 Criteria Summary



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