

Base Case Modeling Assumptions for 2009-2010 NYCA IRM Requirement Study

Parameter	2008 Study Modeling Assumptions	Recommended 2009 Study Modeling Assumptions	Basis for Recommended 2009 Assumptions	Possible Impact on IRM
NYCA Load Model				
Peak Load	33,730 MW for NYCA, 11,955 MW for zone J, and 5460 MW for zone K	To be provided by NYISO on October 1 st .	Forecast based on examination of 2008 weather normalized peaks. Top three external Area peak days aligned with NYCA.	None
Load Shape Model	2002 Load Shape	2002 Load Shape	After evaluating 2007 data, analysis indicates 2002 load shape is an appropriate representation for this analysis.	None
Load Uncertainty Model	Statewide and zonal model updated to reflect current data.	Statewide and zonal model updated to reflect current data.	Updated data from LIPA, Con Ed, and NYISO.(see attachment A)	Low (+)
Generating Unit Capacities	Updated DMNC test values.	Updated DMNC test values plus Noble Wind Units; Bliss 101 MW, Ellenburg 81 MW, and Clinton 100.5 MW. Also, 30 MW increase in rating of Gilboa Unit #1	2008 Gold Book plus (list units that have come on line since GB).	Low (+)
New Units	Gold Book (table III) units plus Prattsburgh Wind Park - 55 MW (11/07) and Gilboa unit 2 uprate of 30 MW (6/07).	Gold Book (table III) units plus those listed on attachment B.	2008 Gold Book and those non-renewable units with Interconnection agreements signed by August 1 st . Renewables based on RPS agreements and ICS input.	High (+)
Wind Resource Modeling	Derived from hourly wind data with average Summer Peak Hour capacity factor of 11.4%	Derived from hourly wind data with average Summer Peak Hour capacity factor of approximately	Based on collected hourly wind data. Summer Peak Hour capacity factor based on June 1-Aug 31,	Above

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		11 %.	hours (beginning) 2-5 PM.	
Retirements	Lovett 3,4,5 (404.8 MW), Russell Station (236.4 MW) Huntley 65&66 (165 MW), and Ogdensburg (76.7 MW).	None known for 2009 Capability Year.	2008 Gold Book plus units indicated by Aug. 1.	None
Forced & Partial Outage Rates	5-year (2002-06) GADS data. (Those units with less than five years data will use available representative data.)	5-year (2003-07) GADS data. (Those units with less than five years data will use available representative data.)	Most recent 5-year period. (see attachment C)	High(+)
Planned Outages	Based on schedules received by NYISO & adjusted for history.	Based on schedules received by NYISO & adjusted for history.	Updated schedules.	None
Summer Maintenance	Continue with approximately 150 MW after reviewing last year's data.	Continue with approximately 150 MW after reviewing last year's data.	No basis for change after review of most recent data.	None or Low (-)
Gas Turbines Ambient Derate	Derate based on provided temperature correction curves.	Derate based on provided temperature correction curves.	Operational history indicates derates in line with manufacturer's curves.	None
Environmental Impacts	Studied as sensitivities	Address the impact of RGGI that effect 2009 by accelerated retirements or deration of certain units.	State imposed limits on the emission of regional gases. NOx as sensitivity -see white paper	None
Non-NYPA Hydro Capacity Modeling	45% derating.	45% derating.	No basis for change after review of most recent data.	None
Special Case Resources	1323 MW sold; modeled as 1205 MW in July and August and proportional to monthly peak load in other months. Limit to 4 calls per month in July and August for DEC limited generation. (about 30 hour total)	xxxx MW sold; modeled as yyyy MW in the peak month and reported and modeled by month. Limit to 4 calls per month in July and August for DEC limited generation. (about 30 hour total)	Those sold for the program, discounted to historic availability. (91% average) and distributed according to zonal performance.	Low(+)

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EDRP Resources	430 MW registered; modeled as 193.5 MW in July and Aug and proportional as above. Limit to 5 calls per month.	xxx MW registered; modeled as yyy MW in July and Aug and proportional to monthly peak load in other months. Limit to 5 calls per month.	Those registered for the program, discounted to historic availability. 45 % overall)	Low(+)
External Capacity - Purchases	2,921 MW total, 1200 from HQ, 50 from NE, 1300 from PJM, 205 from Ontario, and 166 MW from Cedars	3,121 MW total, 1200 from HQ, 50 from NE, 1280 from PJM, 425 from Ontario (55 MW grandfathered, 350 MW HQ wheel and 20 MW MISO wheel) and 166 MW from Cedars.	Based on NYISO forecast. Sensitivity performed to remove contracts and see the effect on LCR-IRM curve. Results should not impinge on IRM	None
EOPs (other than SCR and EDRP)	See Attachment C.	See Attachment D. (attachment designation has changed)	Based on TO information, measured data, and NYISO forecasts	Med (+)
Transmission System Model				
Interface Limits	Based on 2007 Operating Study, 2007 Operations Engineering Voltage Studies, 2007 Comprehensive Planning Process, and additional analysis.	Based on 2008 Operating Study, 2008 Operations Engineering Voltage Studies, 2008 Comprehensive Planning Process, and additional analysis.	NYISO engineering studies and additional analysis and input from other external Control Areas. Cedars modeled as new Tie with contract. See attachment E.	None
New Transmission Capability	Introduction of Millwood Capacitor bank, Neptune including EGC to Newbridge to Ruland Road. Mott Haven substation. NUSCO 1385 cable reconductoring. Completion of Bethel to Norwalk 345Kv.	None Identified as new for this study.		None

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Transmission Cable Forced Outage Rate	All existing Cable EFORS updated on LI and NYC (based on 2002-2006 availability with adjustment to NUSCO cable due to reconductoring).	All existing Cable EFORS updated on LI and NYC to reflect 5 year history. Or 10 year history.	Based on TO analysis.	Low (-)
Unforced Capacity Deliverability Rights (UDR)	LIPA has notified the NYISO that the amount of UDR's for the Neptune Cable and Cross Sound Cable is confidential data.	LIPA has notified the NYISO that the amount of UDR's for the Neptune Cable and Cross Sound Cable is confidential data.	Per transmission owner notification.	None
Model Version	Version 2.83	Version 2.92	Per testing and recommendation by ICS	None
Outside World Area Models	Updated models for PJM and NE to include zonal representations.	Single Area representations for Ontario and Quebec. Three zones modeled for PJM. Five zones modeled for New England derived from 14 zones provided.	The load and capacity data (including zonal information if available) is provided by the neighboring Areas. This data is then adjusted as described in Policy 5.	Low (-)
Reserve Sharing between Areas	Canadian Provinces assist each other first; US Control Areas assist each other first.	All Balancing Authority areas share reserves non-discriminatorily.	NPCC CP-8 working group has identified this arrangement as more accurate.	Low (+)

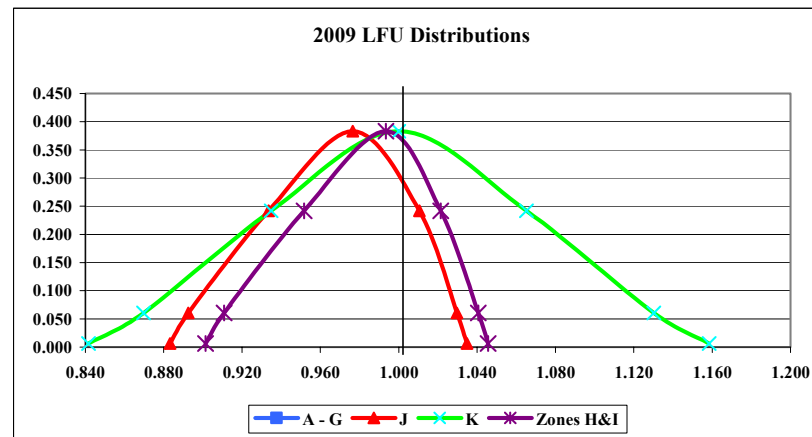
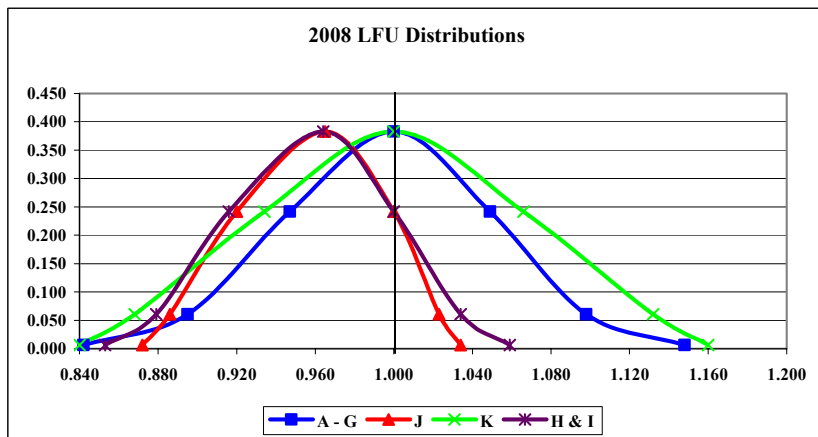
Range: Low < 0.5%, Medium 0.5% - 1%, High > 1%

Attachment A NYCA Load Forecast Uncertainty

2008 and 2009 LFU Models

2008 Load Forecast Uncertainty Models				
Multiplier	Zones H&I	Con Ed (J)	LIPA (K)	NYCA Net
0.0062	1.0590	1.0340	1.1600	1.1480
0.0606	1.0340	1.0230	1.1320	1.0980
0.2417	1.0000	1.0000	1.0660	1.0490
0.3830	0.9640	0.9650	1.0000	1.0000
0.2417	0.9160	0.9200	0.9340	0.9470
0.0606	0.8790	0.8860	0.8680	0.8950
0.0062	0.8530	0.8720	0.8400	0.8420

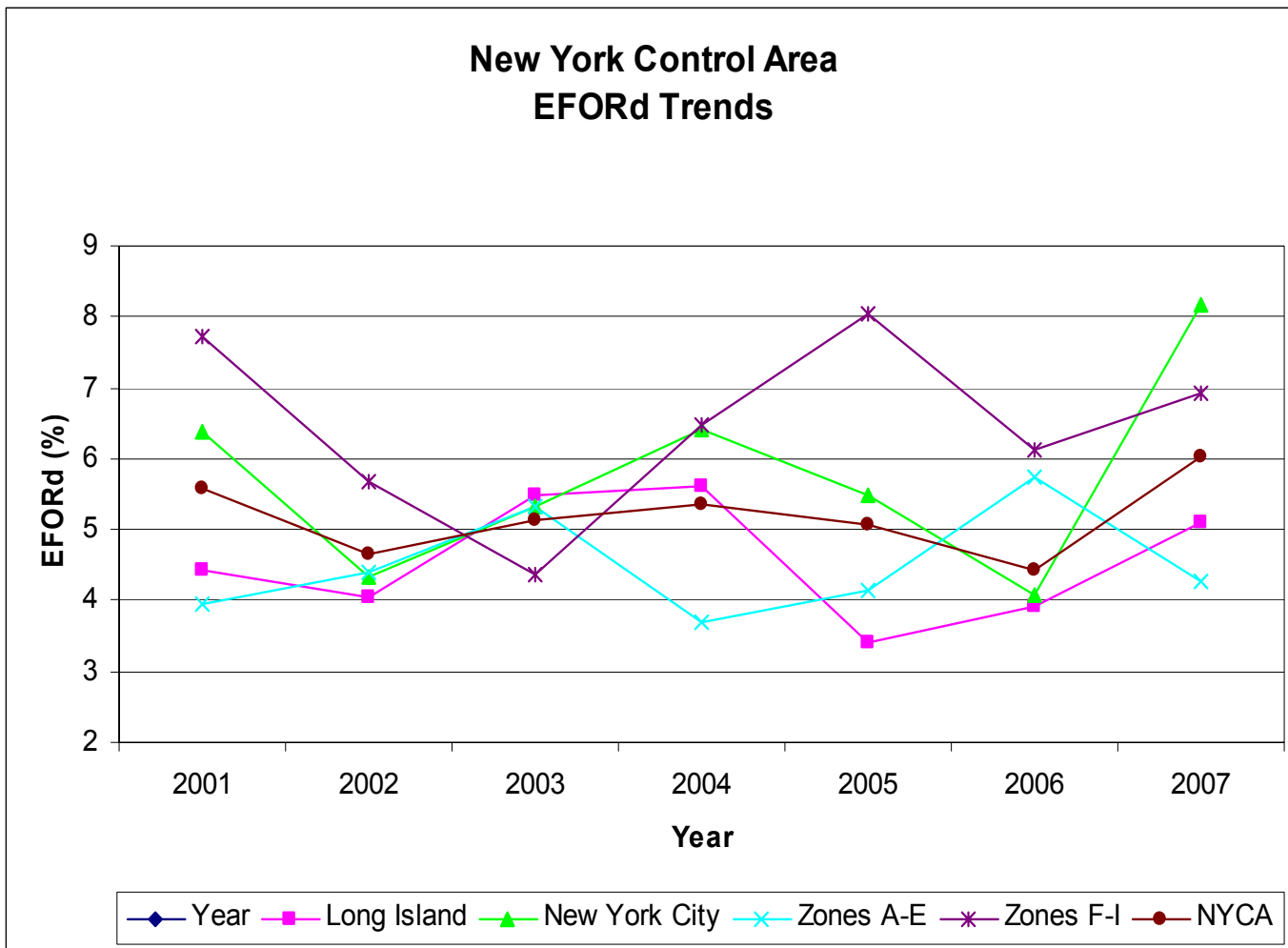
2009 Load Forecast Uncertainty Models				
Multiplier	Zones H&I	Con Ed (J)	LIPA (K)	NYCA Net
0.0062	1.0457	1.0348	1.1584	
0.0606	1.0406	1.0297	1.1303	
0.2417	1.0215	1.0106	1.0651	
0.3830	0.9935	0.9765	1.0000	
0.2417	0.9517	0.9336	0.9349	
0.0606	0.9108	0.8926	0.8697	
0.0062	0.9014	0.8833	0.8416	



Attachment B
List of proposed Units
To be in-service by Summer of 2009

Unit Name	Zone	MW
Caithness	K	310
Albany Landfill	F	2
Co-op city (River Bay)	J	20
Utilizing RPS method:		
UPC Canandaigua Cohocton Wind Farm	C	82.5
UPC Canandaigua Dutch Hill Wind Farm	D	42.5
Noble Altona Windpark	D	99.0
Noble Chateaugay Windpark	D	106.5
Windfarm Prattsburgh	C	55.5
Noble Ellenburg II	D	21
Tier 3 generic Unit	D	105.1

Attachment C



Attachment D

Emergency Operating Procedures

Step	Procedure	Effect	2008 MW Value	2009 MW Value
1	Special Case Resources	Load relief	1,323 MW (representing the amount sold)	1,xxx MW (representing the amount sold)
2	Emergency Demand Response Program	Load relief	193.5 MW	AA MW
3	5% manual voltage Reduction	Load relief	151 MW	80 MW*
4	Thirty-minute reserve to zero	Allow operating reserve to decrease to largest unit capacity (10-minute reserve)	600 MW	600 MW
5	5% remote voltage reduction	Load relief	530 MW	514 MW
6	Voluntary industrial curtailment	Load relief	134 MW	129 MW
7	General public appeals	Load relief	88 MW	88 MW
8	Emergency Purchases	Increase capacity	Varies	Varies
9	Ten-minute reserve to zero	Allow 10-minute reserve to decrease to zero	1200 MW	1200 MW
10	Customer disconnections	Load relief	As needed	As needed

*This is a preliminary value and appears to leave out zone J manual voltage reductions

Attachment E 2009 IRM study Topology

Figure A-10

