

8/10/07 – Approved

Base Case Modeling Assumptions for 2008-09 NYCA IRM Requirement Study

Parameter	2007 Study Modeling Assumptions	Recommended 2008 Study Modeling Assumptions	Basis for Recommended 2008 Assumptions	Possible Impact on IRM
NYCA Load Model				
Peak Load	33,544 MW for NYCA, 11,775 MW for zone J, and 5478 MW for zone K	To be provided by NYISO on October 1 st .	Forecast based on examination of 2007 weather normalized peaks. Top three external Area peak days aligned with NYCA.	None
Load Shape Model	2002 Load Shape	2002 Load Shape	After evaluating 2006 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.	2007 Gold Book plus (list units that have come on line since GB).	None
New Units	Gold Book (table III) units plus: Prattsburgh Wind Park - 79.5 MW (10/06), Flat Rock Wind Power (phase 2) - 100 MW (12/06)	Gold Book (table III) units plus Prattsburgh Wind Park - 55 MW (11/07),	2007 Gold Book and those with Interconnection agreements signed by August 1 st .	None
Wind Resources	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 11 %.	Based on collected hourly wind data. Summer Peak Hour capacity factor based on June 1-Aug 31, hours (beginning) 2-5 PM.	Low (+)
Retirements	Huntley 65&66 (165 MW), Lovett 5 (176.2 MW) Lovett 3 (46.8 MW)	Lovett 3,4,5 (404.8 MW), Russell Station (236.4 MW) Huntley 65&66 (165 MW), and	2007 Gold Book plus units indicated by Aug. 1.	Low (+)

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Parameter	2007 Study Modeling Assumptions	Recommended 2008 Study Modeling Assumptions	Basis for Recommended 2008 Assumptions	Possible Impact on IRM
		Ogdensburg (76.7 MW).		
Forced & Partial Outage Rates	5-year (2001-05) GADS data. (Those units with less than five years data will use available representative data.)	5-year (2002-06) GADS data. (Those units with less than five years data will use available representative data.)	Most recent 5-year period.	Low (-)
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.	Review of 2005 and 2006 data.	None
Gas Turbines Ambient Derate	Derate expanded to include combustion turbine portion of combined cycle units.	Derate based on provided temperature correction curves.	Operational history indicates derates in line with manufacturer's curves.	Low (-)
Non-NYPA Hydro Capacity Modeling	45% derating.	45% derating.	No basis for change after review of most recent data.	None
Special Case Resources	1080 MW sold; modeled as 994 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)	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)	Those sold for the program, discounted to historic availability. (91% average) and distributed according to zonal performance. Numbers for 2008 are net of retirements of Holtsville and Wading River truck mounted diesel generating units.	Low (+) (performance)
EDRP Resources	507 MW registered; modeled as 228 MW in July and Aug and proportional as above. Limit to 5 calls per month.	430 MW registered; modeled as 193.5 MW in July and Aug and proportional as above. Limit to 5 calls per month.	Those registered for the program, discounted to historic availability. (45 % overall)	Low (-)
External Capacity	3085 MW total, 1000 from HQ, 730 from NE, 1300 from PJM, and 55 from Ontario. (see UDR	2,921 MW total, 1200 from HQ, 50 from NE, 1300 from PJM, 205 from Ontario, and 166 MW	Based on NYISO forecast.	None

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Parameter	2007 Study Modeling Assumptions	Recommended 2008 Study Modeling Assumptions	Basis for Recommended 2008 Assumptions	Possible Impact on IRM
	section under transmission)	from Cedars		
EOPs (other than SCR and EDRP)	See Attachment C.	See Attachment C.	Based on TO information, measured data, and NYISO forecasts	Low (-)
Transmission System Model				
Interface Limits	Based on 2006 Operating Study, 2006 Operations Engineering Voltage Studies, 2006 Comprehensive Planning Process, and additional analysis.	Based on 2007 Operating Study, 2007 Operations Engineering Voltage Studies, 2007 Comprehensive Planning Process, and additional analysis.	NYISO engineering studies and additional analysis and input from other external Control Areas.	Low (-)
New Transmission Capability	None Known	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.	Per TO information. Neptune, Motthaven, and Athens SRIS's.	Low (-) Neptune overriding factor
Transmission Cable Forced Outage Rate	All existing Cable EFORS updated on LI and NYC to reflect 5 year history.	All existing Cable EFORS updated on LI and NYC (based on 2002-2006 availability with adjustment to NUSCO cable due to reconductoring).	Based on TO analysis.	Low (-)
Unforced Capacity Deliverability Rights (UDR)	Dummy zone in NY attached to zone K and NE with 330 MW tie and 330 MW of NE units in dummy zone (for CSC).	LIPA has notified the NYISO that the amount of UDR's for the Neptune Cable and Cross Sound Cable are confidential data.	Per transmission owner notification.	Med (-)
Model Version	Version 2.83	Version 2.83	Per recommendation by ICS	None
Outside World	Updated models for PJM and NE	Updated models. There will be	The load and capacity data	Low (-)

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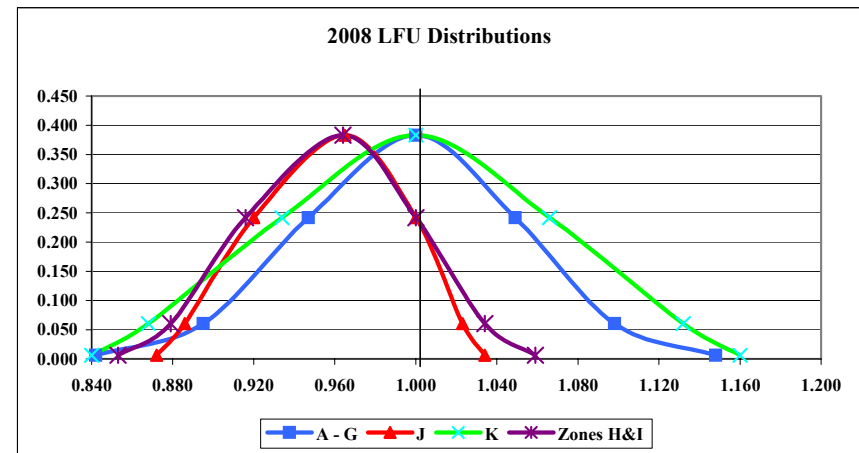
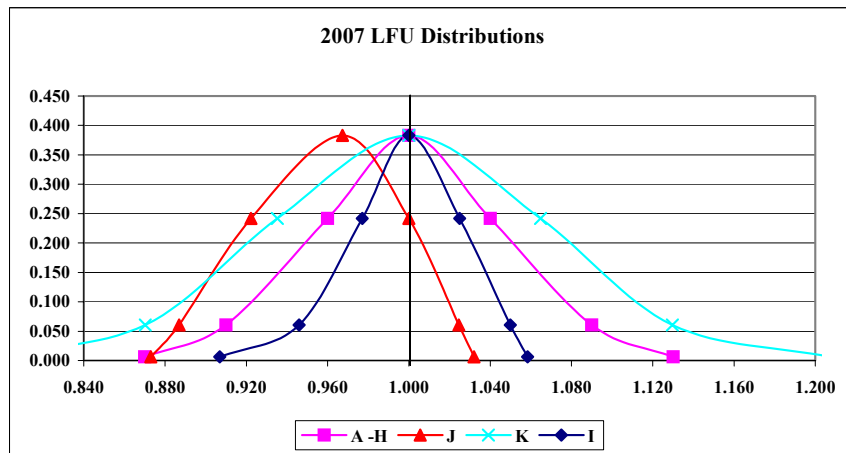
Parameter	2007 Study Modeling Assumptions	Recommended 2008 Study Modeling Assumptions	Basis for Recommended 2008 Assumptions	Possible Impact on IRM
Area Models	to include zonal representations.	expanded reported on the external control area reliability parameters such as LOLE and Installed Reserve Margin.	(including zonal information if available) is provided by the neighboring Areas. This data is then adjusted as described in Policy 5-1.	

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

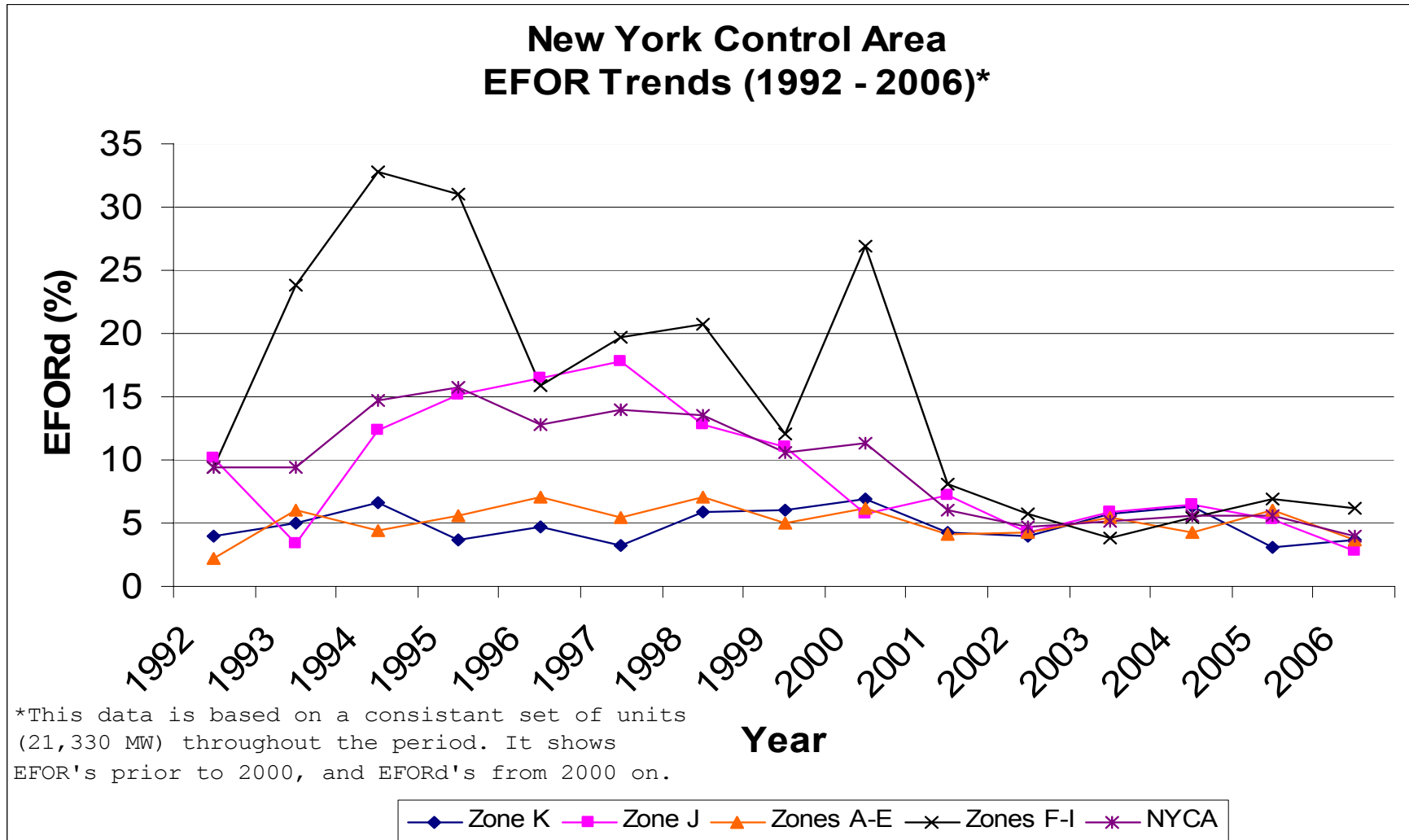
Attachment A NYCA Load Forecast Uncertainty 2007 and 2008 LFU Models

Multiplier	Zone I	Con Ed (J)	LIPA (K)	NYCA Net
0.0062	1.0584	1.0320	1.2075	1.1300
0.0606	1.0499	1.0245	1.1297	1.0900
0.2417	1.0250	1.0000	1.0648	1.0400
0.3830	1.0000	0.9673	1.0000	1.0000
0.2417	0.9770	0.9222	0.9352	0.9600
0.0606	0.9460	0.8869	0.8703	0.9100
0.0062	0.9070	0.8730	0.7925	0.8700

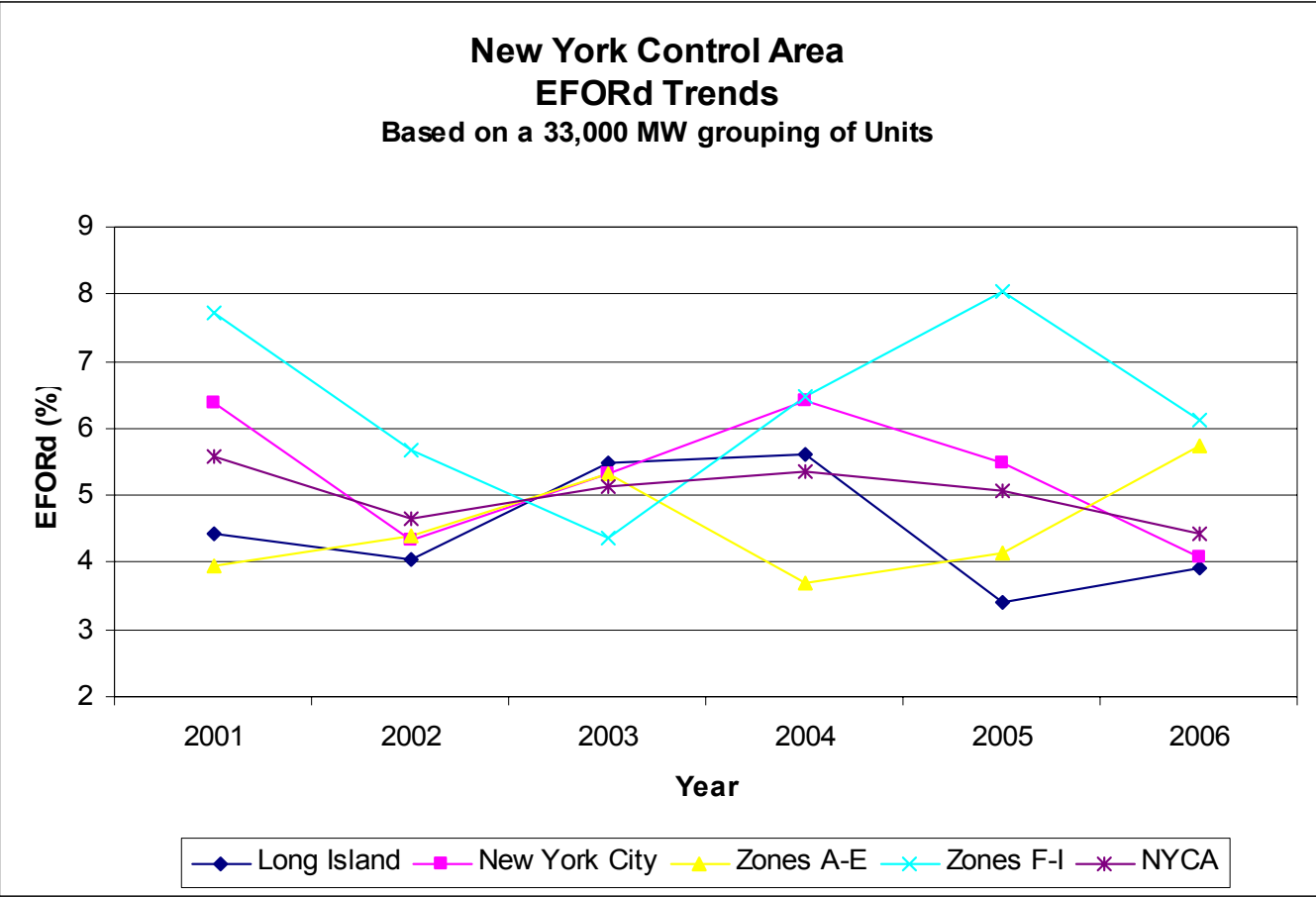
Multiplier	Zones H&I	Con Ed (J)	LIPA (K)	NYCA Net
0.0062	1.0590	1.0340	1.1600	1.1480
0.0606	1.0340	1.0230	1.1320	1.0980
0.2417	1.0000	1.0000	1.0660	1.0490
0.3830	0.9640	0.9650	1.0000	1.0000
0.2417	0.9160	0.9200	0.9340	0.9470
0.0606	0.8790	0.8860	0.8680	0.8950
0.0062	0.8530	0.8720	0.8400	0.8420



Attachment B



Attachment B1



Attachment C

Emergency Operating Procedures

Step	Procedure	Effect	2007 MW Value	2008 MW Value
1	Special Case Resources	Load relief	1,080 MW (representing the amount sold)	1,323 MW (representing the amount sold)
2	Emergency Demand Response Program	Load relief	228 MW	193.5 MW
3	5% manual voltage Reduction	Load relief	171 MW	151 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	465 MW	530 MW
6	Voluntary industrial curtailment*	Load relief	156 MW	134 MW
7	General public appeals	Load relief	108 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

* contains MP Non essential, TO interruptible, and Voluntary Industrial & Commercial

Attachment D 2008 IRM study Topology

New York Control Area
Transmission System Representation
For 2008 IRM Study
Summer Ratings

Figure A-10

Draft
8/06/07

