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Base Case Modeling Assumptions for 2007-08 NYCA IRM Requirement Study vs 2006 RNA

Parameter	2006 Study Modeling Assumptions	Recommended 2007 Study Modeling Assumptions	Basis for Recommended 2007 Assumptions	Possible Impact on IRM	2006 RNA Assumptions
NYCA Load Model					
Peak Load	32,400 MW	33544 MW for NYCA, 11,775 MW for zone J, and 5478 MW for zone K	NYISO forecast based on TO forecasts with NYISO estimate for National Grid and Con Ed zonal allocation (zones H, I, J). Top three external Area peak days aligned with NYCA.	Low (+)	2006 Gold Book Forecast
Load Shape Model	2002 Load Shape	2002 Load Shape	After evaluating 2005 data, analysis indicates 2002 load shape remains an appropriate representation for this analysis.	None	Same
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 (+)	Same
NYCA Capacity Model					
Generating Unit Capacities	2005 Gold Book	Updated DMNC test values.	2006 Gold Book plus SCS Astoria Energy unit (in service)	Low(-)	Same, Constant over ten year period
New Units	See 2006-07 IRM Study Report Page	Gold Book (table III) units plus: Prattsburgh Wind Park - 79.5 MW (10/06), Flat Rock	2006 Gold Book and those with Interconnection agreements signed by August 1st.(note the Neptune line	Low(+)	As per table of Future Projects

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		Wind Power (phase 2) - 100 MW (12/06)	will be introduced as a sensitivity since COD does not meet May 1 deadline)		
Wind Resources	Derived from hourly wind data with summer peak hours capacity factor of 10.9%	Derived from hourly wind data with average Summer Peak Hour capacity factor of 11.4%	Based on collected hourly wind data. Summer Peak Hour capacity factor based on June 1-Aug 31, hours (beginning) 2-5 PM.	Low (+)	See Future projects list
Retirements	Huntley 63&64- (60.6 MW)	Huntley 65&66 (165 MW), Lovett 5 (176.2 MW) Lovett 6 (46.8 MW)	2006 Gold Book	Low(-)	Add Lovett 3 and Russell
Forced & Partial Outage Rates DMNC Derating	5-year (2000-04) GADS data. (Those units with less than five years data will use available representative data.) DMNC derating = 125 MW.	5-year (2001-05) GADS data. (Those units with less than five years data will use available representative data.) DMNC derate -0 and will now be captured under the GT derate below	Most recent 5-year period.	Low(-)	Same, constant over 10 year period
Planned Outages	Based on schedules received by NYISO as of Sept. 2004 & adjusted for history.	Based on schedules received by NYISO & adjusted for history.	Updated schedules.	None	Same, constant over ten year period
Summer Maintenance	Approximately 150 MW based on	Continue with approximately 150	Review of 2004 and 2005 data.	None	Same, constant over ten year period

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Parameter	2006 Study Modeling Assumptions	Recommended 2007 Study Modeling Assumptions	Basis for Recommended 2007 Assumptions	Possible Impact on IRM	2006 RNA Assumptions
	historical data.	MW after reviewing last year's data.			
Gas Turbines Ambient Derate	Using Model developed by GE to adjust individual units based loads above DMNC test temp.	Derate expanded to include combustion turbine portion of combined cycle units.	Output of CT portion reduced at higher temperatures.	Low(+)	Same, constant over ten year period
Non-NYPA Hydro Capacity Modeling	45% derating.	45% derating.	No basis for change after review of most recent data.	None	Same, constant over ten year period
Special Case Resources	1016 MW sold; modeled as 935 MW in July and August and proportional to monthly peak load in other months.	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)	Those sold for the program, discounted to historic availability. (92% overall)	Low(+)	Same, constant over ten year period
EDRP Resources	599 MW registered; modeled as 269 MW in July and Aug and proportional as above. NYISO proposal to limit to 5 calls per month.	507 MW registered; modeled as 228 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 (+)	Same, constant over ten year period

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Parameter	2006 Study Modeling Assumptions	Recommended 2007 Study Modeling Assumptions	Basis for Recommended 2007 Assumptions	Possible Impact on IRM	2006 RNA Assumptions
External Capacity (FIRM)	2755 MW total, 1000 from HQ, 400 from NE, 1300 from PJM, and 55 from Ontario.	3085 MW total, 1000 from HQ, 730 from NE, 1300 from PJM, and 55 from Ontario. (see UDR section under transmission)	Amount from each Area forecast per contractual activity and actual history.	Low(+)	Same, constant over ten year period Reflected in duration of interface capabilities.
EOPs (other than SCR and EDRP)	As indicated in attachment C.	See Attachment C.	Based on TO information and measured data.	Low (-)	Same, constant over ten year period
Transmission System Model					
Interface Limits	Based on 2005 Operating Study.	See Attachment D. Gold Book facilities less (M-29) Sprainbook-Sherman Creek. Target date for model completion: 8/18	Based on 2006 Operating Study, 2006 Operations Engineering Voltage Studies, 2006 Comprehensive Planning Process, and additional analysis.		See Limit Comparison Table
Transmission Cable Forced Outage Rate	All existing Cable EFORs updated on LI and NYC	All existing Cable EFORs updated on LI and NYC.	Based on TO analysis.	Low(-)	Same, constant over ten year period
Unforced Capacity Deliverability Rights (UDR)	Modeled dummy zone in NY attached to zone K and NE with 330 MW tie and 330 MW of NE units in dummy zone.	Added curtailable contract from dummy zone to zone K.	Per recommendation from LIPA and verification from GE.	Low (-)	Same, constant over ten year period Neptune DC from PJM to LI modeled As per sensitivity.

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Model Version	Version 2.69	Version 2.83	Per recommendation by ICS	Low(-)	Same, constant over ten year period
Outside World Area Models	Updated models for PJM and NE to include zonal representations.	Updated models for PJM (classic footprint) and NE.	Updated per information supplied by external Control Areas.	Low(-)	Same, constant over ten year period

Attachment A

2006 and 2007 LFU Models

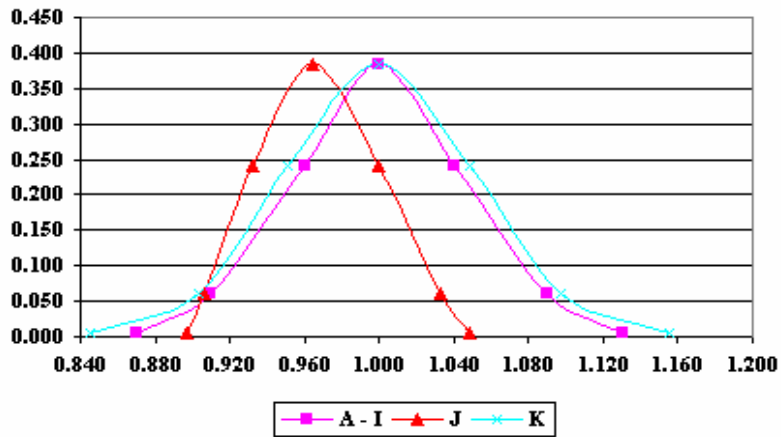
2006 Load Forecast Uncertainty Models

Multiplier	Con Ed (J)	LIPA (K)	NYCA Net
0.0062	1.0481	1.1552	1.1300
0.0606	1.0325	1.0970	1.0900
0.2417	1.0000	1.0485	1.0400
0.3830	0.9642	1.0000	1.0000
0.2417	0.9319	0.9515	0.9600
0.0606	0.9066	0.9030	0.9100
0.0062	0.8972	0.8448	0.8700

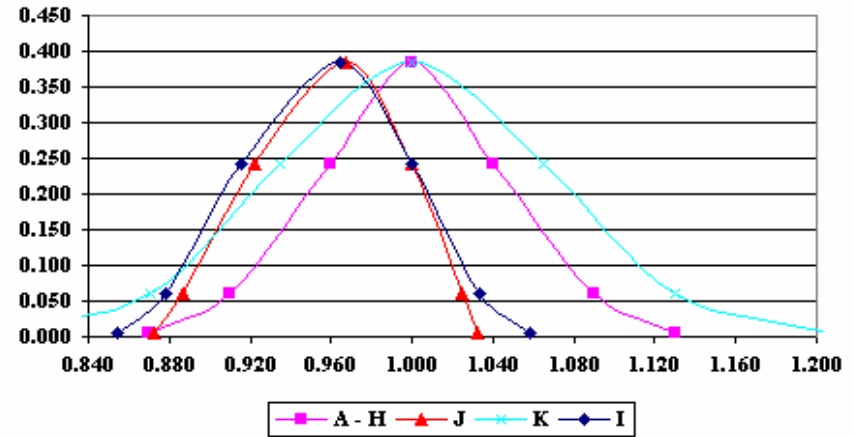
2007 Load Forecast Uncertainty Models

Multiplier	Zone I	Con Ed (J)	LIPA (K)	NYCA Net
0.0062	1.0580	1.0320	1.2075	1.1300
0.0606	1.0335	1.0245	1.1297	1.0900
0.2417	1.0000	1.0000	1.0648	1.0400
0.3830	0.9645	0.9673	1.0000	1.0000
0.2417	0.9156	0.9222	0.9352	0.9600
0.0606	0.8782	0.8869	0.8703	0.9100
0.0062	0.8539	0.8730	0.7925	0.8700

2006 LFU Distributions

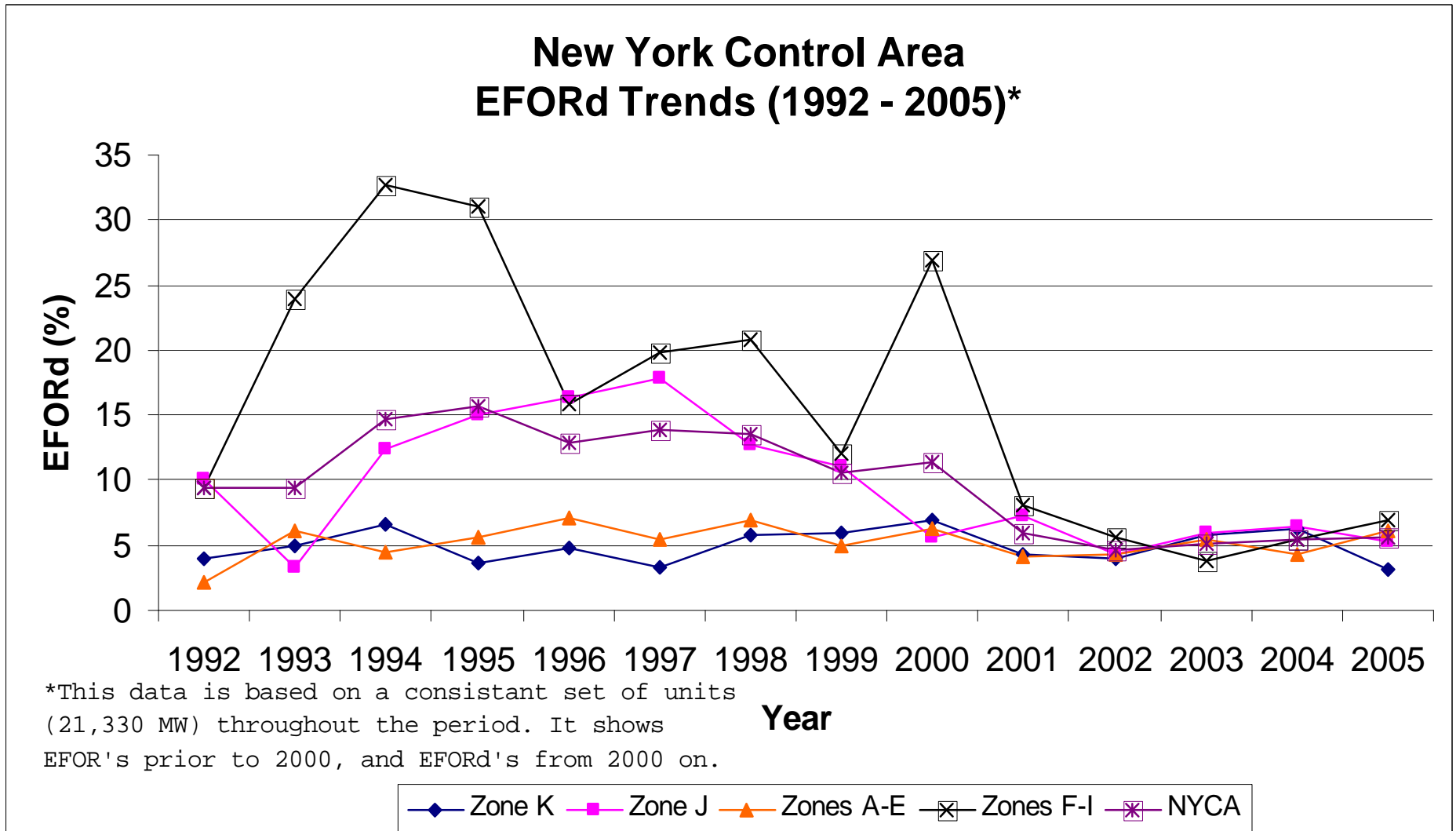


2007 LFU Distributions

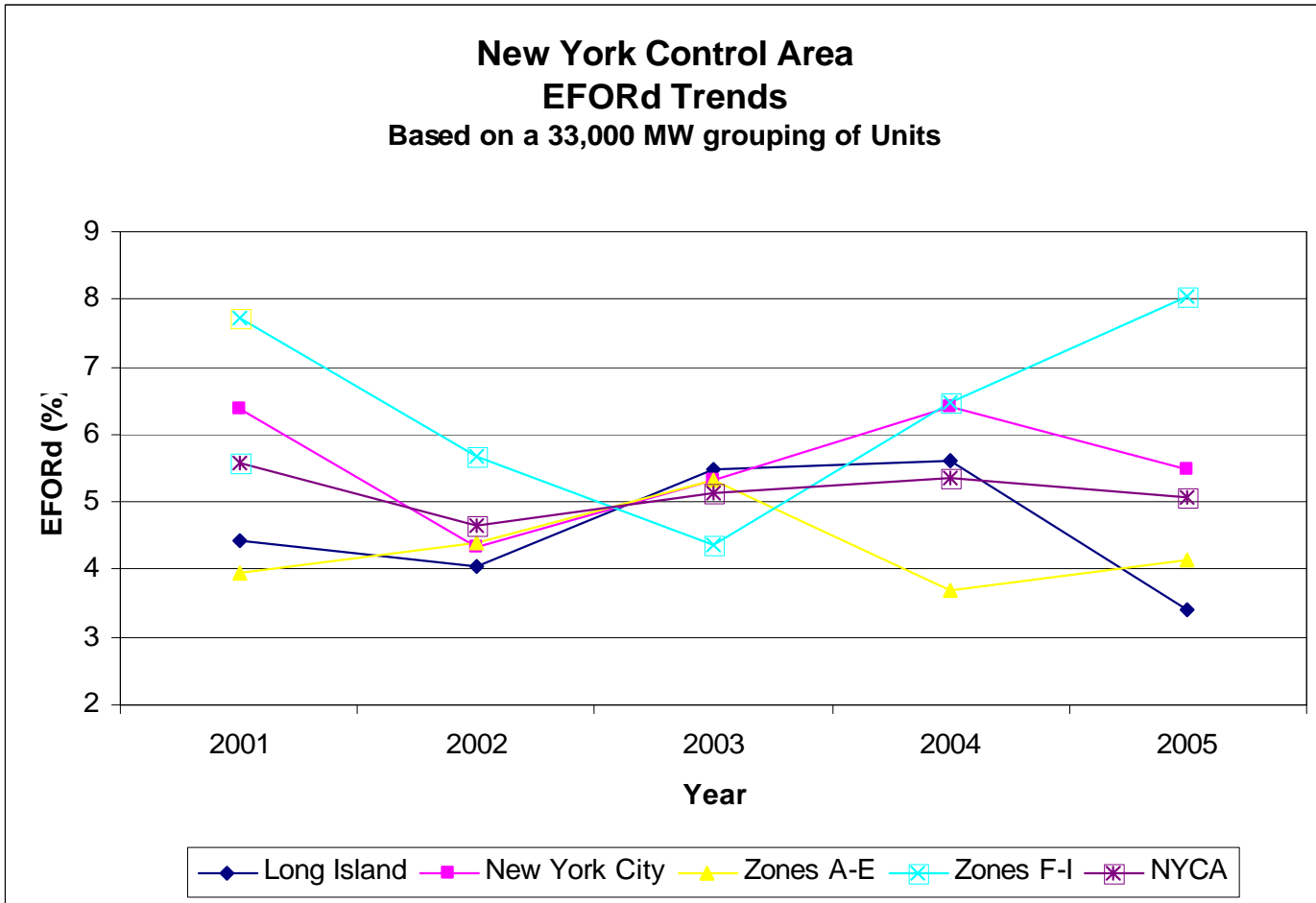


New LICA model
 New Con Ed model for J
 Use new Con Ed model for I
 A - H same as 2006

Attachment B



Attachment B1



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Attachment C

Emergency Operating Procedures

Step	Procedure	Effect	2006 MW Value	2007 MW Value
1	Special Case Resources	Load relief	1,016 MW (representing the amount sold)	1,080 MW (representing the amount sold)
2	Emergency Demand Response Program	Load relief	210 MW	228 MW
3	5% manual voltage Reduction	Load relief	172 MW	171 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	461 MW	465 MW
6	Curtail Company use	Load relief	11 MW	
7	Voluntary industrial curtailment	Load relief	128 MW	156 MW*
8	General public appeals	Load relief	13 MW	108 MW
9	Emergency Purchases	Increase capacity	Varies	Varies
10	Ten-minute reserve to zero	Allow 10-minute reserve to decrease to zero	1200 MW	1200 MW
11	Customer disconnections	Load relief	As needed	As needed

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

