

DRAFT 23
For Discussion Purposes Only
Base Case Modeling Assumptions for
2010 RNA Requirement Study

Parameter	Recommended 2010 Study Modeling Assumptions	Basis for Recommended 2010 Assumptions	Same as 2010-2011 IRM¹?	Potential Impact on Results
Peak Load	2010 Gold Book with energy efficiency adjustment included for both the MARS and power flow base cases will be considered. No SCRs or EDRPs are included in the power flow base cases.	Forecast based on examination of 2009 weather normalized peaks. Top three peak days of external system aligned with NYCA for MARS analysis. (Scenario will use a higher load)	No, Update per 2010 Gold Book.	
Load Shape Model	2002 Load Shape, constant over ten year period.	After evaluating 2008 actual load data, analysis indicates 2002 load shape is an appropriate representation for this analysis.	Yes	
Load Uncertainty Model	Statewide and zonal model updated to reflect current data as developed for the recently completed 2010-2011 IRM and held constant over 10 year period.	Method used and accepted by NYISO and ICS based on collected data and input from LIPA and Con Ed (<i>see Attachments A and A-1</i>) for the recently completed 2010-2011 IRM.	Yes	

¹ 2010-2011 IRM Assumption Matrix approved by NYSRC Executive Committee 8/14/09 is used as the starting point for 2010 RNA

Parameter	Recommended 2010 Study Modeling Assumptions	Basis for Recommended 2010 Assumptions	Same as 2010-2011 IRM¹?	Potential Impact on Results
Existing Generating Unit Capacities	Updated DMNC test values held constant over ten year period.	2010 Gold Book values.	No, Update per 2010 Gold Book	
Proposed New Units	Projects listed in attachments B and B1.	Units in-service since the 2009 Gold Book and those that pass the RNA Base Case Screening process.	No, Update per 2010 Gold Book and RNA Screening	
Wind Resource Modeling	Derived from hourly wind data with average Summer Peak Hour availability 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.	Yes	
Solar Resource Modeling	Hourly solar readings converted to MW output with average Summer Peak Hour availability factor of approximately 65%. (30 MW)	Based on collected hourly solar data from LIPA. Summer Peak Hour capacity factor based on June 1-Aug 31, hours (beginning) 2-5 PM.	Yes	
Retirements	Poletti 1 retirement (891 MW 2/10), Greenidge Unit 3 (52 MW 12/09), and Westover Unit 7 (40.2 MW 12/09). Other units as confirmed by March 1, 2010.	2010 Gold Book plus units indicated by PSC notification.		
Forced & Partial Outage Rates	5-year (2005-09) GADS data. (Those units with less than five years data could use available representative data.) . Held constant over 10 year period.	Most recent 5-year period as determined for 2010-2011 IRM. <i>(see Attachments C and C-1).</i>	No, Update with most recent data	
Planned Outages	Based on schedules received by NYISO & adjusted for history per the recently	Updated schedules included for 2010-2011 IRM Study.	Yes	

Parameter	Recommended 2010 Study Modeling Assumptions	Basis for Recommended 2010 Assumptions	Same as 2010-2011 IRM¹?	Potential Impact on Results
	completed 2010-2011 IRM.			
Summer Maintenance	Continue with approximately 150 MW after reviewing last year’s data per the recently completed 2010-2011 IRM and hold constant over 10 year period.	No basis for change after review of most recent data.	Yes	
Combustion Turbines Ambient Derate	Derate based on provided temperature correction curves per the recently completed 2010-2011 IRM and hold constant over 10 year period.	Operational history indicates derates in line with manufacturer’s curves.	Yes	
Environmental Impacts	Study as scenarios.		N/A	
Non-NYPA Hydro Capacity Modeling	45% derating across 10 year period.	Review of historic data.	Yes	
Special Case Resources	2575 MW (July 10) based on 3 year historical growth rate. Monthly variation based on historical experience. Limit to 4 calls per month in July and August for DEC limited generation. (about 30 hour total). See SCR determinations <i>in Attachment F</i> per the recently completed 2010-2011 IRM. Held constant over 10 year period.	Those sold for the program, discounted to historic availability and distributed according to zonal performance. Methodology for determination of derates has changed to account for more accurate peak hour performance. <i>See SCR determinations in Attachment F and F-1.</i>	Yes	
EDRP Resources	Forecast as per the 2010 Gold Book and ESPWG discussion and held constant over 10 year period. 329 MW registered; modeled as 148 MW in July and Aug and proportional to	Those registered for the program, discounted to historic availability. (45% overall) July & August values	Yes	

Parameter	Recommended 2010 Study Modeling Assumptions	Basis for Recommended 2010 Assumptions	Same as 2010-2011 IRM ¹ ?	Potential Impact on Results
	monthly peak load in other months per the recently completed 2010-2011 IRM. Limit to 5 calls per month.	calculated from 2009 July and August registrations.		
External Capacity - Purchases	Firm, grandfathered and External CRIS Rights are modeled as contracts. External ties are set to individual capability limits respecting simultaneous impact capability.	Per 2010 Gold Book	No, Modeled as actual contracts.	
Capacity - Sales	Sales will be modeled as Equivalent Contracts ² . Hold constant over 10 year period.	Per 2010 Gold Book.	No, Update per 2010 Gold Book	
Capacity -Wheel-throughs	None modeled Transactions currently committed to Forward Capacity Markets that will flow through NY will be modeled. May consider modeling as a sensitivity.		No, Committed transactions will be modeled. Yes	
EOPs (other than SCR and EDRP)	700 MW of non-SCR/EDRP MWs per the recently completed 2010-2011 IRM. <i>See Attachment D.</i> Hold constant over 10 year period.	Based on TO information, measured data, and NYISO forecasts.	Yes	
Interface Limits	Based on 2009 Operating Study, 2009 Operations Engineering Voltage Studies, 2009 Comprehensive Planning Process, and additional analysis. Transfer limit analysis done in RNA for critical interfaces. External system limits	NYISO engineering studies and additional analysis and input from other external Control Areas. <i>See Attachments E and E-1</i>	No, Update per RNA's Transmission Security Assessment	

² Equivalent contracts are modeled to remove capacity from the zone where the contracts originate and derate the interface tie where the capacity exits New York.

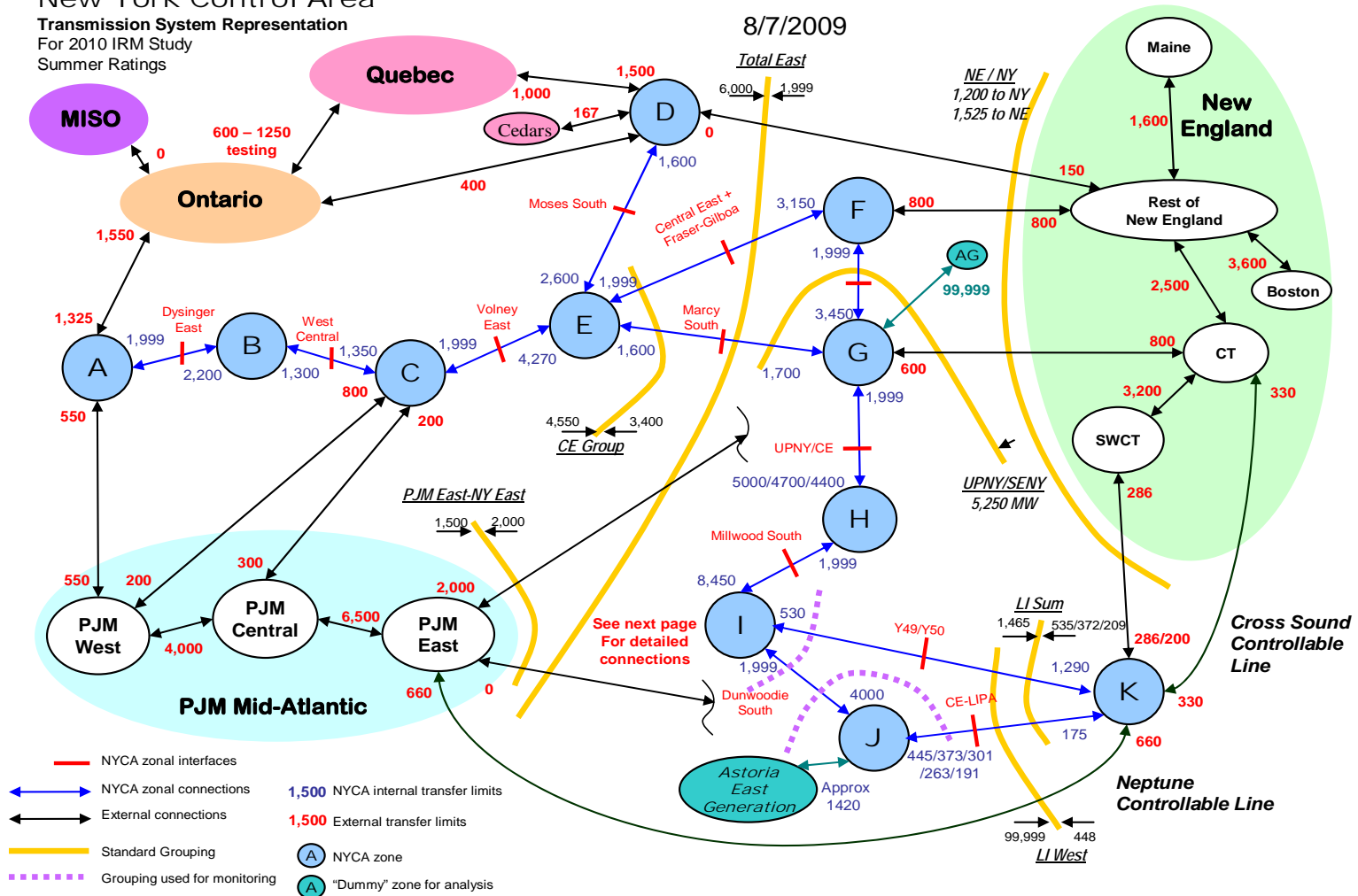
Parameter	Recommended 2010 Study Modeling Assumptions	Basis for Recommended 2010 Assumptions	Same as 2010-2011 IRM ¹ ?	Potential Impact on Results
	from input from neighboring systems.			
New Transmission Capability	Linden VFT - 300 MW 2010 Gold Book Firm schedule. Non Firm plans included if needed for base case solution, as per procedure manual.	Based on NYISO analysis.	No, Update per 2010 Gold Book and per procedures manual.	
Topology	Potential changes to topology to be developed in the transmission system analysis and modeling assumptions finalization. Modifications to include the addition of Phase 2 HVDC and Highgate and the outage of BP-76 until 12/31/2012.		No, Updated per transmission adequacy analysis.	
Transmission Cable Forced Outage Rate	All existing Cable EFORs updated on LI and NYC to reflect 5 year history per the recently completed 2010-2011 IRM. Hold constant over 10 year period.	Based on TO analysis.	Yes	
Unforced Capacity Deliverability Rights (UDR)	UDRs have been issued for the Cross Sound Cable, Neptune cable, and Linden VFT Project. Hold constant over 10 year period.	Contracted amounts of capacity are confidential and are included as capacity internal to NYCA.	Yes	
Model Version	Version 2.98	Per testing and recommendation by ICS.	Yes	
Outside World Area Models	Single Area representations for Ontario and Quebec, three zones <u>multiple zones</u> modeled for PJM <u>and New England</u> , five zones modeled for New England <u>based on CP-8 provided topology.</u> derived from 14 zones provided per the 2010-	Based on best available data.	No, External tie ratings are restored.	

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	<p>2011 IRM model.</p> <p>Utilize publically available load and capacity data for the External Areas to modify and populate a ten year MARS database at the external areas current reserve margin requirements. Same for First Five Year period with external tie ratings restored. For second five year period, updated for major addition impacts, and other information from our neighbors modified to a constant reserve margin.</p>			
Reserve Sharing between Areas	All Control Areas have indicated that they will share reserves equally among all. Loop Flow switch(s) are in the “No” position to not allow a Control Area to send capacity through one system and back into itself in order to avoid the congestion that could be relieved by transmission projects.	NPCC CP-8 working group has identified this arrangement as more representative. GE has performed analysis on loop flow switch issue. NYISO has issued white paper on this topic.	Yes	

To be updated as part of RNA Study.

New York Control Area
Transmission System Representation
For 2010 IRM Study
Summer Ratings

Attachment E
8/7/2009



To be updated as part of RNA Study.

Attachment E-1

2009 PJM-NYCA MARS Model - 8/7/2009

