RNA Assumption Matrix patterned off of the base assumptions used for the IRM and LCR studies as of 10/11/2013

1. MARS Base Case Model Assumptions

1.1 Load Parameters

Parameter	2014 IRM Model Assumptions Recommended	Basis for IRM Recommendation	2014 RNA Model Change
Peak Load	October 1 , 2013 forecast NYCA: 33,655 MW NYC: 11,740 MW Long Island 5,461 MW	Forecast based on examination of 2013 weather normalized peaks. Top three external Area peak days aligned with NYCA	Update For 2014 Gold Book loads
Load Shape	Multiple Load Shapes Model using years **2002, 2006, and 2007**	See white paper	Same
Load Forecast Uncertainty	Zonal model updated to reflect current data	Based on collected data and input from LIPA, Con Ed, and NYISO. (See attachment A)	Same

1.2 Capacity Parameters - Generation

Parameter	2014 IRM Model Assumptions Recommended	Basis for IRM Recommendation	2014 RNA Model Change
Existing Generating Unit Capacities	2013 Gold Book values. Use min (DMNC vs. CRIS) capacity value	2013 Gold Book publication	Same
Proposed New Non-Wind Units	76.9 MW of capacity was repowered or returned to service (see Attachment B)	Units built since the 2013 Gold Book and those non-renewable units with Interconnection Agreements signed by August 1.	2014 Gold Book Section IV*
Retirements	164 MW retirements reported See Attachment B3	Policy 5 guidelines on retirement disposition in IRM studies	2014 Gold Book Section IV*
Forced and Partial Outage Rates	Five-year (2008-2012) GADS data for each unit represented. Those units with less than five years – use representative data. See attachments C and C1	T. Rates representing the Equivalent Forced Outage Rates (EFORd) during demand periods over the most recent five-year period (2008-2012)	Update for most recent five year period
Planned Outages	Based on schedules received by the NYISO and adjusted for history	Updated schedules *Currently, data from last year is being used*	Same
Summer Maintenance	Nominal 50 MWs – divided equally between upstate and downstate	Review of most recent data	Same

1.2 Capacity Parameters – Generation (continued)

Parameter	2014 IRM Model Assumptions Recommended	Basis for IRM Recommendation	2014 RNA Model Change
Combustion Turbine Derates	Derate based on temperature correction curves provided	Operational history indicates the derates are in-line with manufacturer's curves	Same
Proposed New Wind Units	No new wind See Attachment B1	Renewable units based on RPS agreements, interconnection Queue and ICS input	2014 Gold Book IV*
Wind Resources	Wind Capacity – 1366.6 MWs	Number decrease due to a (2013 IRM) forecast not participating in NY Capacity market (Marble River Wind).	2014 Gold Book Section III and IV
Wind Shape	Actual hourly plant output of the 2012 calendar year. Summer Peak Hour availability of 17%	Testing results and White Paper	Same
Solar Resources	Solar Capacity of 31.5 MW plus 12.5 MW of new units. See Attachment B-2	Based on collected hourly solar data Summer Peak Hour capacity factor based on June 1 – Aug 31, hours HB14 – HB18	2014 Gold Book, embedded in Load Forecast
Non-NYPA Hydro Resources	Derate by 45%	Review of unit production and hydrological conditions including recognized forecasts (i.e. NOAA)	Same

1.3 Capacity Parameters – Import and Exports

Parameter	2014 IRM Model Assumptions Recommended	Basis for IRM Recommendation	2014 RNA Model Change
Capacity Purchases	Grandfathered amounts: PJM – 1080 MW HQ – 1090 MW All contracts model as equivalent contracts	Grandfathered Rights, ETCNL, and other FERC identified rights	Modeled as in 2012 RNA
Capacity Sales	Long Term firm sales (279 MW)	These are long term federally monitored contracts	Modeled fully
New UDRs	No new UDRs		Same

1.4 Topology Parameters

Parameter	2014 IRM Model Assumptions Recommended	Basis for IRM Recommendation	2014 RNA Model Change
Interface Limits	All changes reviewed and commented on by TPAS See Attachment E	Based on 2013 Operating Study, 2013 Operations Engineering Voltage Studies, 2013 Comprehensive Planning Process, and additional analysis including interregional planning initiatives	updated analysis extended for ten years
New Transmission	None Identified	Based on TO provided models and NYISO review	2014 Gold Book Section VII
Cable Forced Outage Rates	All existing Cable EFORs updated for NYC and LI to reflect most recent five-year history	Based on TO analysis	Same transition rate as provided by TO and held constant over ten years

1.5 Emergency Operating Procedure Parameters

Parameter	2014 Model Assumptions Recommended	Basis for IRM Recommendation	2014 RNA Model Change
Special Case Resources	July 2014 – 1195 MW based on registrations and modeled as 758 MW of effective capacity. Monthly variation based on historical experience (no Limit on number of calls)	Those sold for the program discounted to historic availability. Summer values calculated from July 2013 registrations (see attachment F).	Updated as available
EDRP Resources	July 2013 – 93.9 MW registered model as 12.8 MW in July and proportional to monthly peak load in other months. Limit to five calls per month	Those sold for the program discounted to historic availability. Summer values calculated from July 2013 registrations and forecast growth.	Updated as available
Other EOPs	721 MW of non-SCR/non-EDRP resources See Attachment D	Based on TO information, measured data, and NYISO forecasts	Updated as available

1.6 External Control Areas Parameters

Parameter	2014 Model Assumptions Recommended	Basis for IRM Recommendation	2014 RNA Model Change
PJM	Load and Capacity data provided by PJM/NPCC CP-8 Data may be adjusted per NYSRC Policy 5 See Attachment E	Initial review performed by the NPCC CP-8 WG prior to Policy 5 changes.	LOLE adjusted to between 0.1 and 0.15 For every year of ten year period
ISONE	Load and Capacity data provided by ISONE/NPCC CP-8 Data may be adjusted per NYSRC Policy 5 See Attachment E	Initial review performed by the NPCC CP-8 WG prior to Policy 5 changes.	LOLE adjusted to between 0.1 and 0.15 For every year of ten year period
HQ	Load and Capacity data provided by HQ/NPCC CP-8 Data may be adjusted per NYSRC Policy 5 See Attachment E	Initial review performed by the NPCC CP-8 WG prior to Policy 5 changes.	LOLE adjusted to between 0.1 and 0.15 For every year of ten year period
IESO	Load and Capacity data provided by IESO/NPCC CP-8 data may be adjusted per NYSRC Policy 5 See Attachment E	Initial review performed by the NPCC CP-8 WG prior to Policy 5 changes.	LOLE adjusted to between 0.1 and 0.15 For every year of ten year period
Reserve Sharing	All NPCC Control Areas and PJM interconnection indicate that they will share reserves equally among all members	Per NPCC CP-8 WG	Same

1.7 Miscellaneous Parameters

Parameter	2014 Model Assumptions Recommended	Basis for IRM Recommendation	2014 RNA Model Change
MARS Model Version	Version 3.16.5	Per benchmark testing and ICS recommendation	Updated to most recent available
Environmental Initiatives	No estimated impacts based on review of existing rules and retirement trends	An analysis of generator plans to comply with new regulations in 2014	Same

* Detailed back-up information will be presented in 2014 RNA Report in the same manner as presented in the 2012 RNA Report

**Treatment of Retired/Mothballed/Protectively Laid up units for purposes of RNA modeling: Any generating units that, pursuant to the PSC Orders in Case 05-E-0889, have provided a notice of Retirement, Mothball, protective layup, etc., by the study lock-down date, will be assumed to not be available for the period of the RNA study beginning once the applicable PSC notice period runs.

Note: If a Reliability Need is identified, a noticed generating unit can be offered as a market-based or alternate regulated solution, or as a TO GAP solution, in the CRP process, and its prospective return to service would be subject to tracking by NYISO Planning.

2. TRANSMISSION SECURITY / FAULT CURRENT**

Parameter	Modeling Assumptions	Source
Peak Load	NYCA baseline coincident summer peak forecast	2014 Goldbook
Load model	ConEd: voltage varying Rest of NYCA: constant power	2014 FERC 715 filing
System representation	Per updates received through Databank process (Subject to RNA base case inclusion rules)	NYISO RAD Manual, 2014 FERC 715 filing
Inter-area interchange schedules	Consistent with ERAG MMWG interchange schedule	2014 FERC 715 filing, MMWG
Inter-area controllable tie schedules	Consistent with applicable tariffs and known firm contracts or rights	2014 FERC 715 filing
In-city series reactors	Consistent with ConEdison operating protocol (All series reactors in-service for summer)	2014 FERC 715 filing, ConEd protocol
SVCs, FACTS	Set at zero pre-contingency; allowed to adjust post-contingency	NYISO T&D Manual
Transformer & PAR taps	Taps allowed to adjust pre-contingency; fixed post-contingency	2014 FERC 715 filing
Switched shunts	Allowed to adjust pre-contingency; fixed post-contingency	2014 FERC 715 filing
Fault current analysis settings	Per Fault Current Assessment Guideline	NYISO Fault Current Assessment Guideline
Model Version	Powerflow: PSS/E v32.1.1, PSS/MUST v11.1, TARA v735 Dynamics: PSS/E v30.3.3 Short Circuit: ASPEN v11.8	

****Treatment of Retired/Mothballed/Protectively Laid up units for purpose of RNA modeling:** Any generating units that, pursuant to the PSC Orders in Case 05-E-0889, have provided a notice of Retirement, Mothball, protective layup, etc., by the study lock-down date, will be assumed to not be available for the period of the RNA study beginning once the applicable PSC notice period runs. Note: If a Reliability Need is identified, a noticed generating unit can be offered as a market-based or alternate regulated solution, or as a TO GAP solution, in the CRP process, and its prospective return to service would be subject to tracking by NYISO Planning.