NYISO'S Comprehensive Reliability Planning Process

2008 RNA
Results and Review of Inputs

NYISO Management Committee

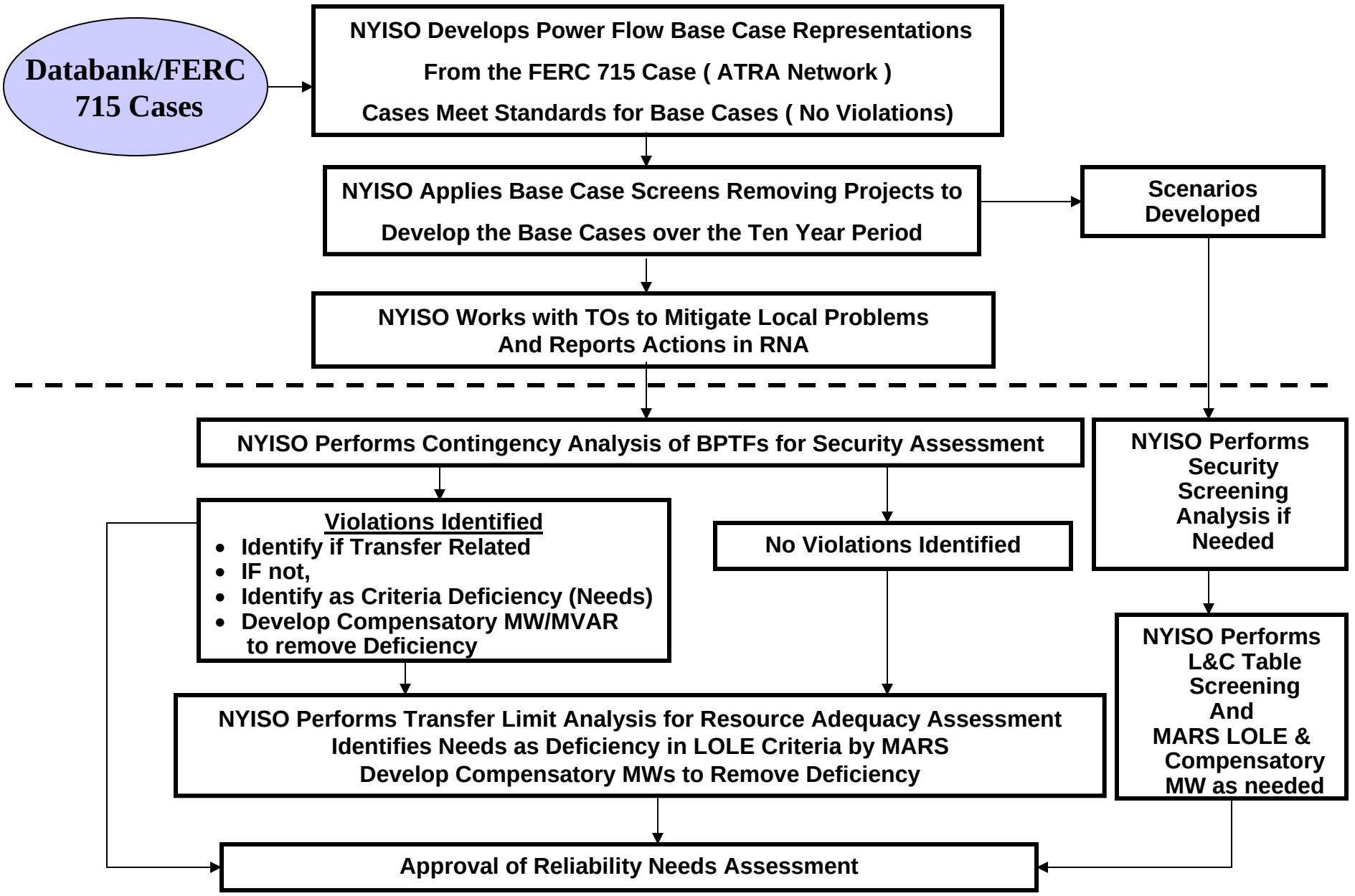
Agenda Item 4

November 14, 2007

Presentation Topics

- Process Overview
- Review of Input Assumptions
- Summary of Results
- Scenarios
- Recommendation

NYISO Reliability Planning Process



Review of Input Assumptions

- 2007 Load and Capacity Report
- Lovett 5, Russell 1-4, and Poletti Retired by 1/31/2010
- Gilboa Uprate, Prattsburgh Wind and Caithness Installed
- Updated External Representations
- Resource Adequacy Analysis Database Starts from the Latest IRM Database
- Neptune modeled as Emergency Assistance in the Study case, and Firm Capacity in Zone K in a Sensitivity case
- Besicorp 635 MW Net Generation Analyzed as Scenario

RNA 2008 Load & Resource Table

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Peak Load										
NYCA	33,871	34,300	34,734	35,141	35,566	35,962	36,366	36,749	37,141	37,631
Zone J	11,975	12,150	12,325	12,480	12,645	12,780	12,915	13,030	13,140	13,360
Zone K	5,485	5,541	5,607	5,664	5,730	5,791	5,855	5,919	6,002	6,076
Resources										
NYCA										
"- Capacity"	38,917	39,257	38,396	38,396	38,396	38,284	38,284	38,284	38,284	38,284
"- SCR"	1323	1323	1323	1323	1323	1323	1323	1323	1323	1323
Total	40,240	40,580	39,719	39,719	39,719	39,607	39,607	39,607	39,607	39,607
Zone J										
"- Capacity"	10,019	10,019	9,128	9,128	9,128	9,015	9,015	9,015	9,015	9,015
"- SCR"	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7	468.7
Total	10,487	10,487	9,596	9,596	9,596	9,484	9,484	9,484	9,484	9,484
Zone K										
"- Capacity"	5,612	5,922	5,922	5,922	5,922	5,922	5,922	5,922	5,922	5,922
"- SCR"	159.5	159.5	159.5	159.5	159.5	159.5	159.5	159.5	159.5	159.5
Total	5,772	6,082	6,082	6,082	6,082	6,082	6,082	6,082	6,082	6,082
NYCA Resource Margin % (1)	118.8%	118.3%	114.4%	113.0%	111.7%	110.1%	108.9%	107.8%	106.6%	105.3%
Zons J Res./Load/ Ratio	87.6%	86.3%	77.9%	76.9%	75.9%	74.2%	73.4%	72.8%	72.2%	71.0%
Zons K Res./Load Ratio	105.2%	109.8%	108.5%	107.4%	106.1%	105.0%	103.9%	102.7%	101.3%	100.1%

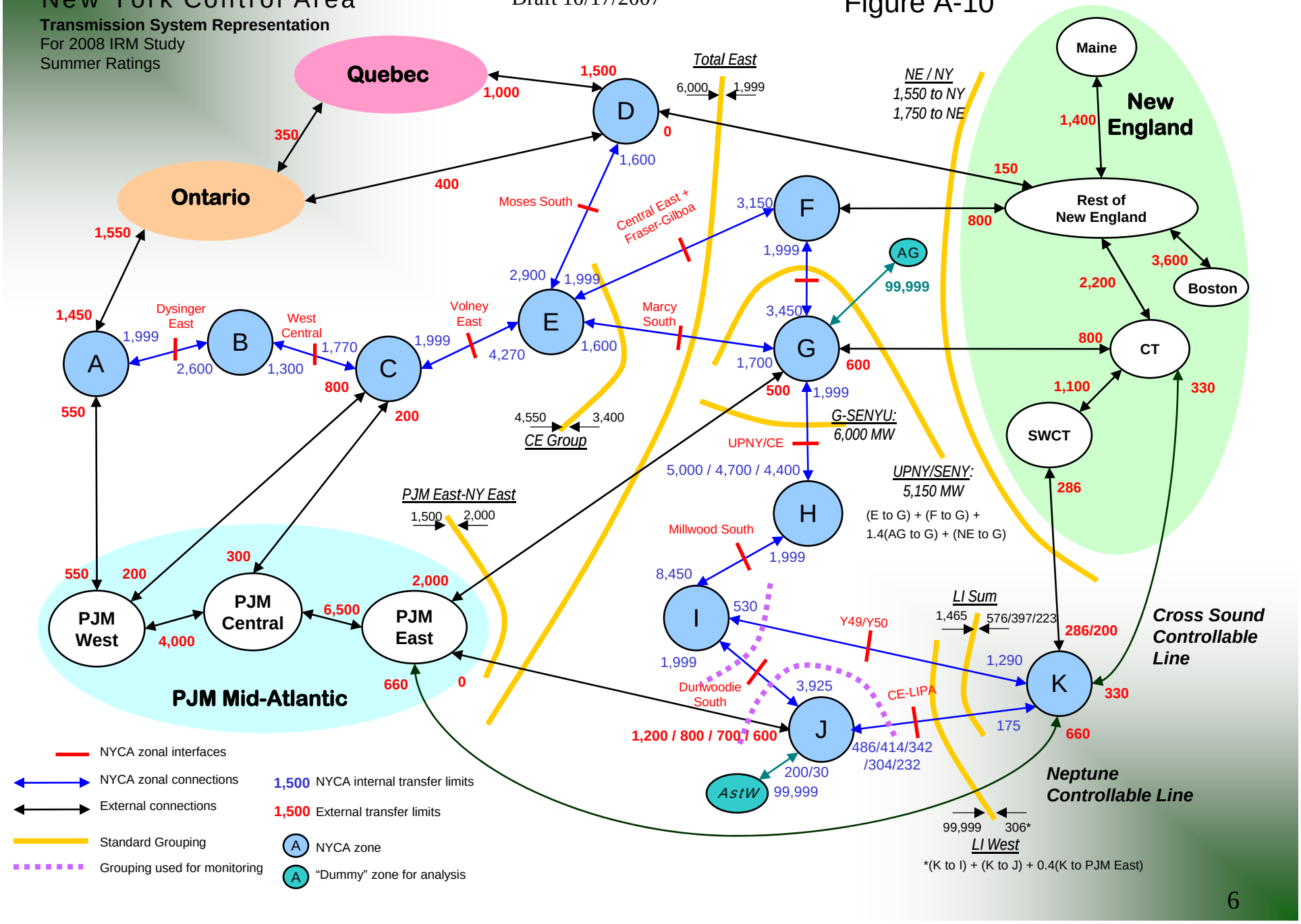
Note: LIPA Edge program of about 40MW not accounted in Zone K; impact to LOLE is not observable

New York Control Area

Transmission System Representation
For 2008 IRM Study
Summer Ratings

Draft 10/17/2007

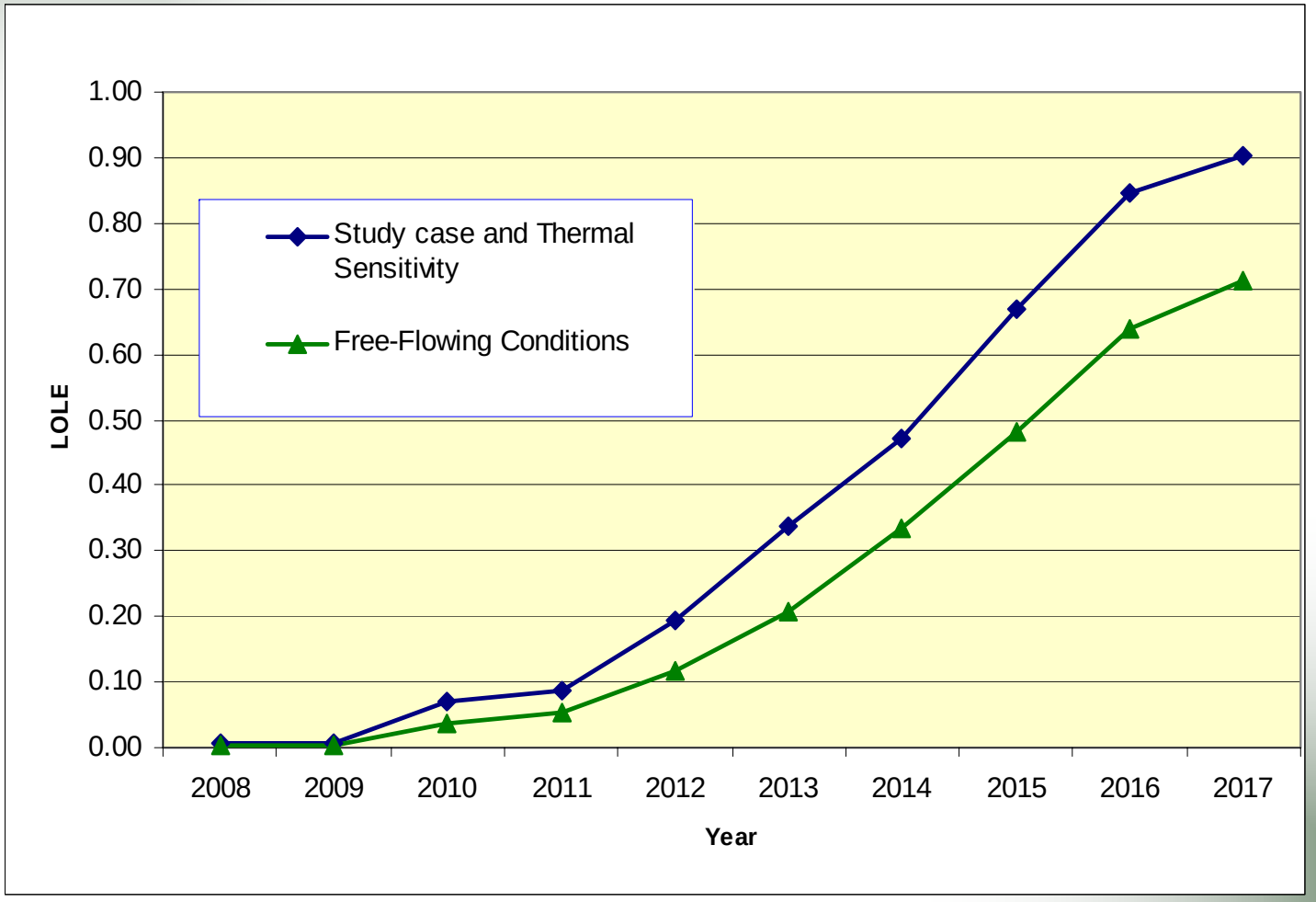
Figure A-10



Summary of Study Case Results

- Initial year of need is 2012 for 500 MW in J or 250 MW each in F, G (or H and I), and J
  - *Same For Study, Thermal, and Free Flow (within lumpiness)*
  - *Initial year of need changes to 2013 if Neptune has Firm Capacity Contract in PJM*
  - *Transmission upgrades have brought transfer limits closer to thermal limits for key interfaces*
- Approximately 2750 MW of compensatory MW will be needed by 2017
  - *Load growth is nearly 1000MW above 2007 RNA (comparing 2017 with 2016)*

Summary of the LOLE Results for the RNA Study Case, Thermal and "Free Flowing" Sensitivities



	Year of Need	LOLE 2012	LOLE 2017
Study Case	2012	0.19	0.90
Neptune Sensitivity	2013	0.09	0.72
Scenarios			
1. High Economic Growth	2010	0.73	2.21
2.1. NOx ("HEDD") Initiative	2009	0.33	2.86
2.2. CO2 RGGI (52 million tons Allowances required in 2010 for LOLE ≤ 0.1 day/year)			
3. The 15x15 Conservation	*None*	0.01	0.03
4. Besicorp 635 MW Net Generation	2012	0.16	0.79
5. In-City 500 MW Generation	2013	0.10	0.62
6. External Capacity	2012	0.13	0.75

Scenario: HEDD in 2009

- Reliability criteria are violated in 2009, if 50.8ton/day reduction is required
- Additional options will need to be developed in order to simultaneously achieve the necessary NOx reductions while satisfying reliability criteria
  - *Emission control retrofits where feasible*
  - *Flexible source averaging plans*
  - *Timely permitting and construction of new low emitting generation*
  - *Focused and measurable energy efficiency and demand response programs*

Table 4.12: HEDD Scenario LOLE Results

Area/Year	2009	2010	2011	2012	2013	2014	2015	2016	2017
AREA-A									
AREA-B	0.06	0.10	0.13	0.21	0.27	0.40	0.60	0.80	0.96
AREA-C									
AREA-D					0.00	0.00	0.00	0.00	0.00
AREA-E	0.02	0.06	0.06	0.12	0.16	0.26	0.41	0.54	0.64
AREA-F				0.00	0.00	0.00	0.00	0.00	0.00
AREA-G	0.03	0.11	0.11	0.20	0.28	0.38	0.53	0.66	0.62
AREA-H									
AREA-I	0.27	0.74	0.63	1.05	1.39	1.75	2.15	2.50	2.60
AREA-J	0.29	0.79	0.66	1.08	1.42	1.77	2.22	2.62	2.75
AREA-K	0.11	0.14	0.13	0.28	0.39	0.53	0.70	0.93	1.00
NYCA	0.33	0.83	0.71	1.15	1.52	1.90	2.34	2.75	2.86

Scenarios: CO2 or "RGGI" Case

- NYS cap: 64 million tons of CO2
- Year 2010 was analyzed
  - *Poletti retired*
  - *1250 MW of additional carbon intensive units restricted*
- Analysis was performed to determine the minimum number of allowances needed to meet reliability criteria.
  - *Result: 52 million tons.*
  - *Risk to reliability if allowances are restricted below this level*
  - *RPS could reduce this amount by 3.1 million tons in 2013*

Recommendation

- Draft RNA Report was reviewed at four joint ESPWG/TPAS meetings and stakeholder comments have been incorporated
- Board member comments have also been reflected
- IMA comments have been posted
- OC concurred with the findings of the 2008 RNA Report at the November 6, 2007 Meeting
- Recommendation (See Motion):
  - *Recommend concurrence by the MC*
  - *Recommend approval by the NYISO Board*