



DRAFT
For Discussion Purposes Only

New York Independent System
Operator
Electric System Planning Process
Draft RNA

Appendices

Prepared by the
NYISO Planning Staff

October 4, 2005

APPENDICES

1	FAULT DUTY RESULTS	2
2	DRAFT PRELIMINARY VOLTAGE TABLES FOR YEAR 2006	3
3	DRAFT PRELIMINARY VOLTAGE TABLES FOR YEAR 2010	5
4	RESOURCE ADEQUACY ASSESSMENT MODEL	7
5	DISCUSSION OF RNA PRESENTATION	7

1 Fault Duty Results

See Attached Excel File, CRP SC Comp-2 Page.xls

2 Draft Preliminary Voltage Tables For Year 2006

Sum06	SENY	UPNYCONED	DS	Facility	Contingency
Shift Ontario/Oswego -> NYC & LI					
Scenario 1 - Ramapo @ 240 MW					
	4632	3929	3838	Sprainbrook	Pre-fault
XL	4651	3981	3886		TWR 34/42
NL/EL	4805	4099	4003	Dunwoodie	L/O Rav#3
Scenario 2 - Ramapo @ 1000 MW					
XL	4931	4139	4052		TWR 34/42
	4963 ^e	4140 ^e	4050 ^e	Sprainbrook	Pre-fault
NL/EL	5124	4296	4203	Dunwoodie	L/O Rav#3
Scenario 3 - Ramapo @ 1000 MW, Lovett off					
XL	4524	3520	3444		TWR 67/68
NL	4841 ^e	3781 ^e	3701 ^e	Ramapo 345	TWR 67/68
	5009	3941	3857	Dunwoodie	Pre-fault
EL	5131	4060	3973	Sprainbrook	L/O Rav#3
Scenario 4 - Ramapo @ 1000 MW, Lovett off, O&R mitigation added					
	4994	3928	3842	Sprainbrook	Pre-fault
XL	5159	4133	4042		TWR 67/68
NL/EL	5265	4185	4091	Dunwoodie	L/O Rav#3
Scenario 5 - Ramapo @ 1000 MW, Lovett off, approx 600 MVAR reactive compensation in SENY					
XL	5481	4446	4351		TWR 67/68
NL	5757	4669	4569	Pleasant Valley	TWR 34/42
EL	5761	4672	4572	Dunwoodie	L/O Rav#3
Scenario 6 - Ramapo @ 1000 MW, Bowline #2 off					
XL	4988	3740	3660		TWR 34/42
	5121	3823	3737	Sprainbrook	Pre-fault
NL/EL	5171	3870	3784	Sprainbrook	L/O Rav#3
Scenario 7 - Ramapo @ 1000 MW, Indian Point #2 off					
XL	4776	4257	3261		TWR 67/68
	4856	4280	3237	Sprainbrook	Pre-fault
NL/EL	5032	4487	3439	Sprainbrook	L/O Rav#3
Shift Zone G -> NYC, Y49/Y50 @ 1240 MW					
Scenario 1 - UPNY-SENY @ 4800 MW, PV-Long Mtn. @ 100 MW					
		4356	4259	Sprainbrook	Pre-fault
XL		4829*	4723*		TWR 34/42
NL/EL		4902	4797	Sprainbrook	L/O Rav#3
Scenario 2 - UPNY-SENY @ 5300 MW, PV-Long Mtn. @ 70 MW					
		4258	4161	Sprainbrook	Pre-fault
NL/EL		4603	4500	Dunwoodie	L/O Rav#3
XL		4684	4580		TWR 34/42
Scenario 3 - UPNY-SENY @ 5300 MW, PV-Long Mtn. @ 300 MW, Gilboa #2 & #4 on					
		4269	4173	Sprainbrook	Pre-fault
NL/EL		4548	4448	Dunwoodie	L/O Rav#3
XL		4553	4454		TWR 67/68
Scenario 4 - UPNY-SENY @ 5300 MW, PV-Long Mtn. @ 70 MW, Y49/Y50 @ 630 MW					

		4333	4232	Sprainbrook	Pre-fault
XL		4400	4298		L/O Rav#3
NL/EL		4442	4338	Dunwoodie	L/O Rav#3
Sum10					
Shift Ontario/Oswego -> NYC & LI					
Scenario 1 - Ramapo @ 440 MW					
XL	4470	3362	3171		TWR 67/68
NL	4940	3768	3564	Pleasant Valley	TWR 34/42
	5123	3941	3734	Dunwoodie	Pre-fault
EL	5180	3999	3788	Dunwoodie	L/O Rav#3
Shift Zone G -> NYC, Y49/Y50 @ 1000 MW					
Scenario 1 - Ramapo @ 1000 MW					
XL		3455	3265		TWR 67/68
NL		3592	3392	Ramapo 345	TWR 67/68
		4063	3854	Dunwoodie	Pre-fault
EL		4297	4083	Dunwoodie	L/O Rav#3
Note: Ignore Ramapo 5					
NL	-	Normal Criteria Voltage Limit			
EL	-	Emergency Criteria Voltage Limit			
XL	-	95% Voltage Collapse Criteria Limit			
*	-	95% of highest transfer tested. Actual voltage collapse limit is likely to be higher.			
e	-	Extrapolated limit			

3 Draft Preliminary Voltage Tables For Year 2010

Sum10	UPNY-SENY		UPNY-CONED		Sprain Brook DS		Facility	Contingency
	open	close	open	close	open	close		
Scenario 2 - Ramapo @ 1000 MW into NY, Y49/Y50 @ 1200 MW, Lovetts & Poletti Retired, and Lovetts Line & Cap upgrade								
NL/EL	2950 ^e	3579 ^e	1902 ^e	3957 ^e			Ramapo 500	L/O IND PT#2
XL	5059	5612	3938	5922	3737	5721		TWR 34/42
NL	5209	5780	4033	6121	3824	5912	Ramapo 345	TWR 67/68
PL	5364	5940	4148	6265	3967	6053	Dunw 345	Pre-fault
NL	5437	6004	4247	6326	4033	6112	Millwood 345	TWR 67/68
EL	5700	6271	4505	6585	4286	6365	Dunw 345	L/O Rav#3
Scenario 3 = Scenario 2 plus M29								
NL	2128 ^e	2686 ^e	995 ^e	3082 ^e			Ramapo 500	TWR 67/68
EL	3683 ^e	4257 ^e	2535 ^e	4622 ^e			Ramapo 500	L/O Rav#3
XL	5260	5813	4133	6117	3931	5914		TWR 34/42
NL	5449	6039	4270	6362	4058	6150	Ramapo 345	TWR 67/68
NL	5618	6174	4428	6511			Rock Tavern	TWR 67/68
NL					4222 ^e	6306 ^e	PV	TWR 34/42
PL	5880 ^e	6465 ^e	4682 ^e	6773 ^e			Ramapo 500	Pre-fault
PL	5886 ^e	6471 ^e	4688 ^e	6779 ^e	4467 ^e	6558 ^e	Dunw 345	Pre-fault
EL	5997 ^e	6589 ^e	4796 ^e	6893 ^e	4572 ^e	6668 ^e	Dunw 345	L/O Rav#3
Scenario 4 = Scenario 3 plus Lovetts I/S minus Lovetts Line & Cap upgrade								
NL	2708 ^e	3326 ^e		2035 ^e			Ramapo 500	TWR 67/68
EL	3860 ^e	4453 ^e	2433 ^e	4510 ^e			Ramapo 500	L/O Rav#3
XL	5335	5888	4606	6591	4397	6381		TWR 34/42
PL	5548	6131	4784	6873	4566	6654	Dunw 345	Pre-fault
NL	5578	6160	4812	6901	4594	6682	PV	TWR 34/42
EL	5706	6288	4937	7024	4717	6804	Dunw	L/O Rav#3
Scenario 5 = Scenario 4 plus Poletti I/S								
NL	4448	5028	3734	5820			Ramapo 500	TWR 34/42
XL	5510	6074	4792	6788	4579	6575		TWR 67/68 or 34/42
PL	5548	6116	4796	6876	4577	6658	Dunw 345	Pre-fault
NL	5606	6179	4853	6937	4632	6718	PV	TWR 34/42
EL	5835	6449	5080	7200	4857	6976	Dunw 345	L/O Rav#3
Scenario 6 = Scenario 3 plus Poletti I/S								
NL	2056 ^e	2686 ^e	947 ^e	3082 ^e			Ramapo 500	TWR 67/68
XL	5432	5973	4295	6270	4091	6067		TWR 67/68 or 34/42
NL	5592	6170	4404	6488	4192	6275	Ramapo 345	TWR 67/68
NL	5740 ^e	6309 ^e	4543 ^e	6621 ^e			Rock Tavern	TWR 67/68
NL					4342 ^e	6421 ^e	PV	TWR 34/42
PL	5855	6432	4657	6740	4439	6522	Dunw 345	Pre-fault
EL	5989	6594	4786	6896	4566	6676	Millwood 345	L/O Rav#3

Scenario 7 - Ramapo @ 1000 MW into PJM, Y49/Y50 @ 1200 MW, Lovetts Retired, M29, & Poletti I/S									
NL	4178 ^e	4948 ^e	3185 ^e	5240 ^e				Ramapo 500	TWR 67/68
XL	4133	4985	3263	5254	3068	5059			TWR 67/68
NL								Ramapo 345	TWR 67/68
PL	4274 ^e	5085 ^e	3299 ^e	5373 ^e				Rock Tavern	Pre-fault
NL	4257 ^e	5115 ^e	3324 ^e	5402	3118 ^e	5197 ^e		PV	TWR 34/42
PL					3448	5600		PV	Pre-fault
EL	4543	5548	3668	5823				Ramapo 500	L/O Rav#3
EL	4653	5761	3802	6028				Coopers Corners 345	L/O Rav#4
EL					3602	5842		PV	L/O Rav#3
Note:									
NL	-		Normal Criteria Voltage Limit						
EL	-		Emergency Criteria Voltage Limit						
XL	-		95% Voltage Collapse Criteria Limit						
PL	-		Pre-fault Contingency Limit						
e	-		Extrapolated limit						

4 Resource Adequacy Assessment Model

See Transmission Topology Map in Last Meeting Presentation,
Discuss Topology

5 Discussion of RNA Presentation