Approved by Operating Committee – April 28, 2005

NYISO OPERATING STUDY
SUMMER 2005

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New York Independent System Operator, Inc.

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1. INTRODUCTION

The following report, prepared by the Operating Studies Task Force (OSTF) at the direction and guidance of the System Operations Advisory Subcommittee (SOAS), highlights the significant results of the thermal analysis completed for the Summer 2005 capability period. This analysis indicates that, for the Summer 2005 capability period, the New York interconnected bulk power system can be operated reliably in accordance with the "NYSRC Reliability Rules for Planning and Operating the New York State Power System" and the NYISO System Operating Procedures.

Transfer limits cited in this report are based on the forecast peak load conditions and are intended as a guide to system operation. Changes in generation dispatch or load patterns that significantly change pre-contingency line loadings may change limiting contingencies or limiting facilities, and result in higher, or lower, interface transfer capabilities.

System Operators should monitor the critical facilities noted in the enclosed tables, along with other limiting conditions, while maintaining bulk system power transfers within secure operating limits.

2. SYSTEM REPRESENTATION AND BASE STUDY ASSUMPTIONS

I. System Representation

The representation was developed from the NYISO Databank and assumes the forecast summer coincident peak load of 31,962 MW. The other NPCC members and adjacent Regions representations were obtained from MEN/VEM Summer 2005 Reliability Assessment power flow.

For the Summer 2005 peak load period no significant generation is expected to be out of service. The generator output levels for major EHV-connected units are summarized in Appendix B, and are consistent with typical operation for the period. The inter-Area schedules represented in the study base case are summarized in Appendix A, and are consistent with those modeled in the MEN/VEM Summer 2005 Reliability Assessment.

Significant changes represented in the NYISO Summer 2005 base case include:
Installation of the 345kV fault-current limiting series reactors at the Sprain Brook 345kV station.
Generation resource changes for Summer 2005:

Albany Steam (retirement)	-356MW
Bethlehem Energy Center	750MW
East River Repowering	288MW

II. Base Study Assumptions

The PTI MUST thermal transfer analysis program and PSS/e power flow are used to determine the Normal and Emergency Criteria thermal limits. The thermal limits presented have been determined for all transmission facilities scheduled in service during the Summer 2005 period.

The schedules used in the base case loadflows for this analysis assumed a net flow of 1000 MW from PSE&G to Consolidated Edison via the phase-angle-regulating (PAR) transformers controlling the Hudson – Farragut and Linden – Goethals interconnections, and 1000 MW on the

South Mahwah – Waldwick circuits from Consolidated Edison to PSE&G, controlled by the PARs at Waldwick. The Branchburg - Ramapo 500 kV (5018) circuit is scheduled in accordance with the "Ramapo Phase Angle Regulator Operating Procedure", December 11, 1987. These schedules are consistent with the scenarios developed in the MAAC-ECAR-NPCC (MEN) Inter-Regional Reliability Assessment for Summer 2005, and the NERC/MMWG Summer 2005 load flow base case.

Thermal transfer capabilities between New York and adjacent Areas are also determined in this analysis. These transfer limits supplement, but do not change, existing internal operating limits. *There may be facilities internal to each system that may reduce the transfer capability between Areas. Reductions due to these situations are considered to be the responsibility of the respective reliability authority*. Some of these potential limitations are indicated in the summary tables by "____ Facility" limits, which supplement the "Direct Tie" limits. Transfer conditions within and between neighboring Areas can have a significant effect on inter- and intra-Area transfer capabilities. Coordination of schedules and conditions between Areas is necessary to provide optimal transfer conditions while maintaining the reliability and security of the interconnected systems.

4. DISCUSSION

I. Resource Assessment

Load and Capacity Assessment

The forecast peak demand for the Summer 2005 capability period is 31,962 MW. This forecast is approximately .5% above the forecast for Summer 2004 capability 31800MW period, and 3.2% above the all-time New York control area seasonal peak of 30,982 MW, which occurred on August 9, 2001. The Installed Capacity (ICAP) requirement of 37,715 MW, based on the NYSRC 18% installed reserve margin requirement, is anticipated to be adequate to meet forecast demand.

NYISO Peak Load and Capacity Assessment – Summer 2005

NYISO ICAP Requirement	37715
Net of full-responsibility purchases/sales	0
Scheduled generation outages	0
Allowance for unplanned outages	3274
Net capacity for load	34441
NYISO Forecast Peak	31962
Operating Reserve Requirement	1800
Available Reserve	***2479***
Net Margin	679

The assumed allowance for unplanned outages is an equivalent forced outage rate of 8.7% and includes forced outages and de-ratings based on historical performance of all generation in the New York Control Area. For Summer 2004 the equivalent forced outage rate assumed was 9.7%.

The NYISO load forecast for Summer 2005 is 162MW higher than the forecast for Summer 2004. Based on the forecast load and assumed outage rates, the NYISO will have sufficient resources to meet its reserve requirement for the season peak. Installed Capacity (ICAP) resources of 37,715MW are anticipated to be adequate to meet the forecast peak demand of 31,962 MW.

II. Cross-State Interfaces

A. Transfer Limit Analysis

Figure 1 presents a comparison of the Summer 2005 thermal transfer limits to Summer 2004. Changes in these limits from last year are due to changes in the base case load flow generation and load patterns that result in different pre-contingency line loadings, changes in limiting contingencies, or changes in circuit ratings, or line status. Appendix H presents a summary comparison of Cross-State thermal transfer limits between Summer 2005 and 2004, with limiting element/contingency descriptions. Significant differences in these thermal transfer limits are discussed below.

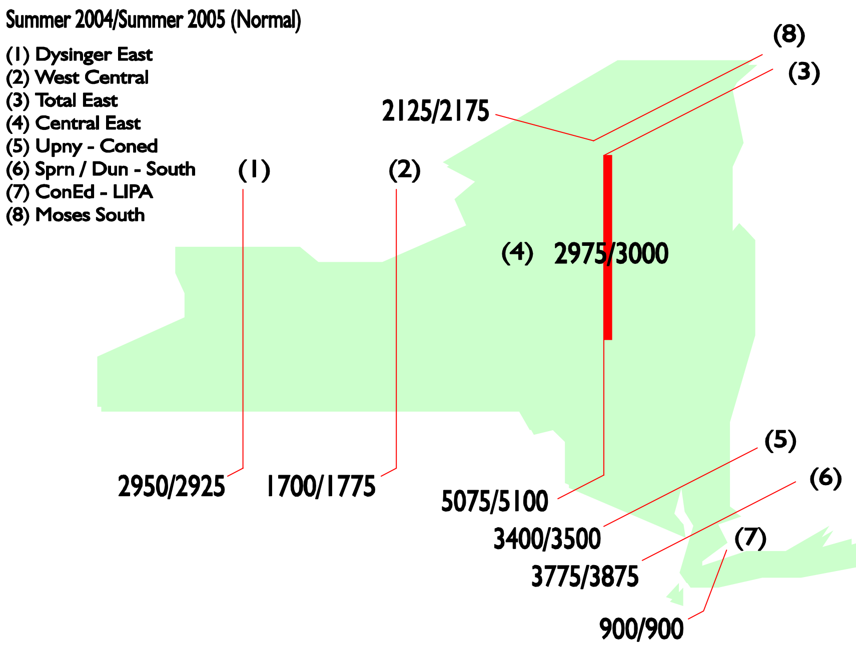

Figure 1 – Cross-State Thermal Transfer Limits

UPNY – ConEd interface limit has increased 100 MW and is the result of changes in the base case dispatch of generation at Bowline Point and the Ramapo PAR schedules.

Sprain Brook-Dunwoodie South interface limit has increased 100 MW, and is the result of the incorporation of the 3.26% series reactors in the Sprain Brook – West 49th St and Dunwoodie – Rainey 345kV circuits. The series reactors tend to balance the power flow on the two parallel paths.

B. Sensitivity Testing

The thermal limits presented in Section 4 are determined using the base conditions and schedules. The effects of various intra- and inter-Area transfers or generation patterns in the system are presented in Appendix G. Certain of these graphics demonstrate that there may not be a measurable sensitivity to the specific base case condition (summer peak load), or the sensitivity may occur at transfer levels above other transfer constraints (e.g., voltage or transient stability limitations). This analysis demonstrates how the particular constraint (thermal transfer limits) may respond to different conditions.

Phase angle regulator schedules may vary from day-to-day. Sensitivity analysis for selected interfaces has been included for the Ramapo, St. Lawrence, and Northport interconnections. Graphs showing the sensitivity of the interface limit to the PAR schedule are included in Appendix G.

C. West Woodbourne Transformer

The Total-East interface may be limited at significantly lower transfer levels for certain contingencies that result in overloading of the West Woodbourne 115/69kV transformer. Should the West Woodbourne tie be the limiting facility, it may be removed from service to allow higher Total-East transfers. An overcurrent relay is installed at West Woodbourne to protect for contingency overloads.

D. ConEd – LIPA Transfer Analysis

Normal transfer limits were determined using the base case generation dispatch and PAR settings as described in Appendix B. Emergency limits are dispatch dependant and can vary based on generation and load patterns in the LIPA system.

For emergency transfer limit analysis the PARs controlling the LIPA import were adjusted to allow for maximum transfer capability into LIPA:

ConEd – LIPA PAR Settings

	Normal	**Emergency**
Jamaica – Lake Success 138kV	-164MW	100MW
Jamaica – Valley Stream 138kV	-122MW	100MW
Sprain Brook – E. Garden City 345kV	637MW	637MW

ISO-NE – LIPA PAR Settings

Norwalk Harbor – Northport 138kV	100MW	286MW

The PAR schedules referenced above and the ConEd – LIPA transfer assessment assume 70% loss factor and rapid oil circulation in the determination of the facility ratings.

E. Transfer Limits for Outage Conditions

Transfer limits for scheduled outage conditions are determined by the NYISO Scheduling and Market Operations groups. The NYISO Real-Time Dispatch system monitors the EHV transmission continuously to maintain the secure operation of the interconnected system.

F. Transient Stability Limits

The thermal interface limits in Section 4 do not include the results of transient stability testing. The current all lines in service and maintenance outage transient stability and voltage stability interface limits, are summarized and available through the NYISO website located at:

http://mdex.nyiso.com/OperatingLimits

III. Thermal Transfer Capabilities with Adjacent Control Areas

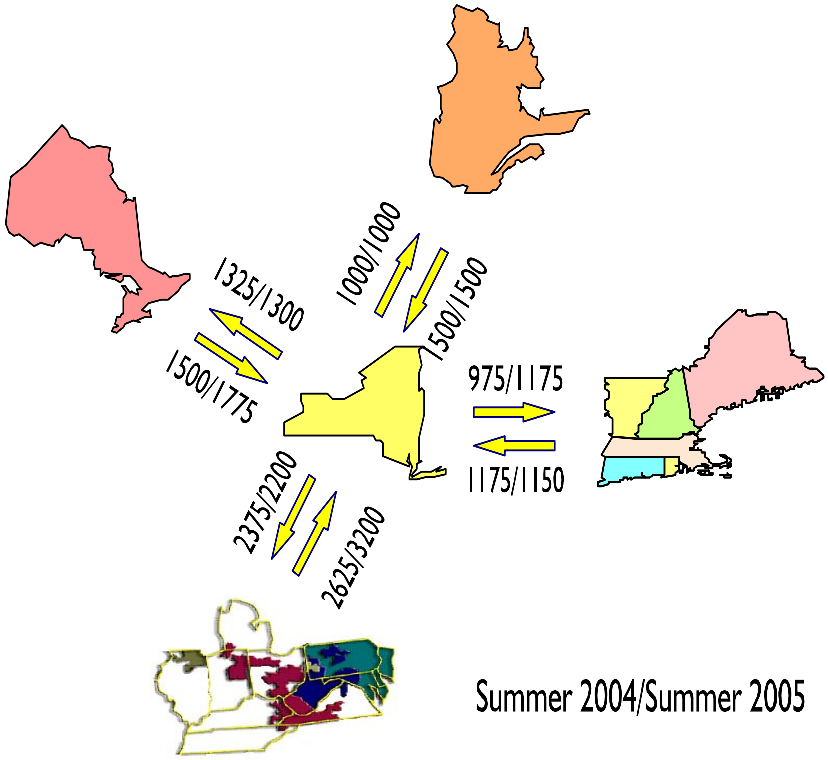

Figure 2 – Inter-Area Thermal Transfer Capabilities

A. New York – ISO New England Analysis

1. New England Transmission/Capacity Additions

Transmission
In the New England Control Area, no significant transmission additions have occurred or are expected by summer 2005.

Capacity
In the New England Control Area, from September 2004 through January 2005, no additional capacity has been added. During the Summer 2005 period, an additional 86 MW (Seabrook Phase1) of capacity may become available as part of the Seabrook plant uprate.

2. Thermal Transfer Limit Analysis

The transfer limits between the NYISO and ISO New England for normal and emergency transfer criteria are summarized in Section 4, Table 2. Referring to Figure 2 the transfer capability from NY to NE has increased by 200 MW due to the base case dispatch of generation in the New England area.

3. Cross-Sound Cable

The Cross-Sound Cable is an HVdc merchant transmission facility connecting the New Haven Harbor 345kV (United Illuminating, ISO-NE) station and Shoreham 138kV (LIPA, NYISO) station. It has a design capacity of 330MW. This facility is not metered as part of NY-NE interface, and HVdc transfers are independent of transfers between the NYISO and ISO-NE.

4. Smithfield – Salisbury 69kV

CHG&E and Northeast Utilities will operate the Smithfield - Salisbury 69 kV (FV/690) line normally open during the summer period due to post-contingency limits within the Northeast Utilities system. When the ISO-NE to NYISO transfer is less than approximately 400 MW, however, the line may be closed. When closed, the maximum allowable flow on this line is 28 MVA based on limitations in the Northeast Utilities 69 kV system. The FV/690 line has directional over-current protection that will trip the line in the event of an overload when the flow is into Northeast Utilities. This facility will not limit transfers between NYISO and ISO-NE.

5. Northport - Norwalk Harbor Cable Flow

Flow on this facility is controlled by a phase angle-regulating (PAR) transformer at Northport. As system conditions vary the following may be used to optimize transfer capability between the Areas. The thermal transfer limits are presented in Table 2 for two different PAR schedule assumptions on the Northport – Norwalk Harbor interconnection. Exhibits in Appendix G graphically demonstrate the optimization of transfer capability by regulating the flow on the Northport-Norwalk Harbor tie.

New York to New England: With power flowing from New York to New England on the Northport to Norwalk Harbor (1385) cable, potential overloads of the Norwalk Harbor to Rowayton Junction (1867) and the Norwalk Harbor to Rowayton Junction (1880) circuits must be considered as follows:

The flow from Norwalk Harbor to Rowayton Junction (1867) should not exceed 237 MVA (Normal rating of Norwalk Harbor to Rowayton Junction (1867).

- The flow from Norwalk Harbor to Rowayton Junction (1880) should not exceed 214 MVA (Normal rating of Norwalk Harbor to Rowayton Junction (1880)).

New England to New York: With power flowing from New England to New York on the Norwalk Harbor to Northport (1385) cable, potential overloads of the Trumbull Junction to Weston (1730) circuit must be considered as follows:

- The algebraic sum of the flow from Trumbull Junction to Weston (1730) and 27% of the flow from Pequonnock to Trumbull Junction (1710) and 29% of the flow from Devon to Trumbull Junction (1710) should not exceed 239 MVA (STE rating of Trumbull Junction to Weston (1730)).

- The algebraic sum of the flow from Trumbull Junction to Weston (1730) and 25% of the flow from Pequonnock to Ash Creek (91001) and 21% of the flow from Bridgeport Resco should not exceed 239 MVA (STE rating of Trumbull Junction to Weston (1730)).

- In order to transfer 200 MVA from Norwalk Harbor to Northport, Norwalk Harbor generation should be on.

6. Plattsburgh – Sandbar (PV-20) Circuit

A new phase angle regulating transformer at Sandbar controlling the Plattsburgh, NY, to Sandbar, VT, 115kV circuit (PV-20) was place in service on June 2004. The existing phase angle regulator at Plattsburgh is out of service for repair and is bypassed.

7. Transient Stability Limitations

For certain system configurations, stability performance determines the transfer capability between the Areas. For those instances, the limits have been obtained from the report "1992-1996 NYPP-NEPOOL TRANSFER LIMIT STUDY - OCTOBER 1992."

The stability limits are expressed in terms of the transfer on the "Northern Ties", i.e., excluding flow on the Norwalk Harbor – Northport circuit. Stability limits for transfers from New England to New York are a function of the New England MW load level, and include the effect of Northfield and Bear Swamp in the generating and pumping mode.

B. New York - PJM Analysis

1. Thermal Transfer Limit Analysis

The transfer limits for the New York - PJM interface are summarized in Section 4, Table 3. The phase angle regulating transformers controlling the Branchburg – Ramapo 500kV circuit are used to maintain flow at the normal rating of the Ramapo 500/345kV transformer (1000 MW) in the direction of the transfer.

The comparison with Summer 2004 in Figure 2 shows the New York to PJM limit has decreased by 175 MW, and an increase of 575 MW transfer capability toward NY. This change is primarily due in the base case dispatch in the vicinity of the limiting elements.

2. Opening of PJM to New York 115 kV Ties as Required

The normal criteria thermal transfer limits presented in Section 4 were determined for an all lines in-service condition. The 115kV interconnections between GPU Energy and New York (Warren - Falconer, North Waverly - East Sayre, and Laurel Lake - Goudey) may be opened in accordance with NYISO and PJM Operating Procedures provided this does not cause unacceptable impact on local reliability in either system. Over-current protection is installed on the Warren - Falconer and the North Waverly - East Sayre 115kV circuits; either of these circuits would trip by relay action for an *actual overload* condition. There is no overload protection on the Laurel Lake - Goudey circuit, however it may be opened by operator action if there is an actual or post-contingency overload condition. The results presented in Table 3 include limits that assume one (or more) of these lines removed from service to achieve higher inter-Area transfer capability.

C. Ontario – New York Analysis

1. Thermal Transfer Limit Analysis

The thermal limits between the New York ISO and the Independent Electricity System Operator (IESO-Ontario) Areas for normal and emergency transfer criteria are presented in Section 4, Table 4. The transfer limits are determined for two assumed schedules on the phase angle regulating transformers controlling the L33P and L34P interconnections at St. Lawrence.

The thermal limit from New York to Ontario is essentially the same as compared to last summer. The thermal limit from Ontario to New York has increased 275 MW due to the changes in the base case dispatch of generation in the Ontario area and Western New York.

2. Transient Stability Limitations

Transient stability limits for the NYISO - IESO interconnection are reported in "NYPP-OH TRANSIENT STABILITY TESTING REPORT on DIRECT TIE TRANSFER CAPABILITY - OCTOBER 1993."

3. Ontario – Michigan PARs

Phase Angle Regulating transformers are in service on the interconnections between Ontario and Michigan:

Lambton – St. Clair 345kV	L4D
Lambton – St. Clair 230kV	L51D
Keith – Waterman 230kV	J5D

The new phase angle regulators controlling the Lambton – St Clair circuits (L4D and L51D) are in-service and are represented in the powerflow base case holding fixed angle (free-flow MW). These PARs will not be available to regulate power flow on the Ontario – Michigan interface until an operating agreement among the parties has been finalized. The existing PAR controlling the Keith – Waterman (J5D) circuit is controlling a schedule of 0MW in the base case.

The collapsed tower of circuit B3N does not yet have a firm replacement date. The failed phase shifter that is part of B3N (PS3) interconnection has not yet been removed from site to be repaired. No decision has been made as to the timing of the repair of this phase shifter.

4. Generation Rejection for Loss of L33P/L34P-St. Lawrence Ties

The interface limits were determined for a particular load, transmission and generation pattern. When system conditions vary from those forecast in the study, normal interface limits may vary. Generation rejection special protection systems (SPSs) are available at Beauharnois, St. Lawrence/Saunders, and St. Lawrence/FDR to reject generation for the loss of the L33P and/or L34P interconnections. Ontario or NYPA operators consistent with system conditions can select these SPSs.

Of the two circuits, L33P is more limiting. At 0 degrees phase shift the limiting STE rating is 465 MVA (voltage regulator rating). The outage distribution factor for the loss of L34P is 0.601 and based on this, the maximum pre-contingency flow on each circuit should not exceed 290 MW. At 40 degrees phase shift the limiting STE rating is 334 MVA (PAR rating). The outage distribution factor for the loss of L34P is 0.462 and based on this, the maximum flow on each circuit should not exceed 228 MW.

D. TransÉnergie–New York Interface

Thermal transfer limits between TransÉnergie (Hydro-Quebec) and New York are not analyzed as part of this study. Respecting the NYSRC and NYISO operating reserve requirements, the maximum allowable delivery into the NYCA from TransÉnergie is limited to 1200 MW via the Chateauguay – Massena 765kV circuit MSC-7040. Maximum delivery from NYCA to TE is 1000 MW.

4. SUMMARY OF RESULTS
TRANSFER LIMIT ANALYSIS

TABLE 1

NYISO CROSS STATE INTERFACE THERMAL LIMITS-SUMMER 2005
ALL LINES I/S

	Dysinger East	West Central	UPNY-ConEd	Sprain Brook Dunwoodie So.	ConEd-LIPA
NORMAL	2925 (1)	1775 (1)	3500 (3)	3875 (4)	900 (6)
EMERGENCY	3125 (2)	1975 (2)	4150 (3)	4000 (5)	1475 (7)

	LIMITING ELEMENT				LIMITING CONTINGENCY
(1)	Niagara – Rochester (NR2) 345kV	@LTE	1501 MW	L/O	AES/Somerset – Rochester (SR-1) 345kV
(2)	Stolle – Meyer 230kV	@NOR	430 MW		Pre-contingency Loading
(3)	Leeds – Pleasant Valley (92) 345kV	@LTE @STE	1538 MW 1724 MW	L/O	Athens – Pleasant Valley (91) 345kV
(4)	Dunwoodie – Sprain Brook 345kV	@LTE	2708 MW	L/O	Tower Fishkill – Pleasantville (F38/Y86) 345kV Fishkill - Wood A (F39) 345 kV Pleasantville - Wood A (Y87) 345 kV Pleasantville345/13.0kV
(5)	Dunwoodie - Rainey 345kV	@NOR	715 MW		Pre-contingency Loading
(6)	Dunwoodie – Shore Rd. (Y50) 345kV	@LTE	914 MW**	L/O	Sprain Brook – East Garden City (Y49) 345kV
(7)	Dunwoodie – Shore Rd. (Y50) 345kV	@NOR	653 MW**		Pre-contingency Loading

NOTE: Some transfers may be voltage/stability limited
** LIPA rating for Y50 circuit is based on 70% loss factor and rapid oil circulation

TABLE 1.a

NYISO CROSS STATE INTERFACE THERMAL LIMITS-SUMMER 2005
ALL LINES I/S

	MSC-7040 FLOW 800 MW	MSC-7040 FLOW 1100 MW	MSC-7040 FLOW 1500 MW
CENTRAL EAST			
NORMAL	2925 (1)	2975 (1)	3000 (2)
EMERGENCY	3275 (2)	3300 (2)	3325 (2)
TOTAL EAST			
NORMAL	5375 (1)	5275 (1)	5100 (2)
EMERGENCY	6100 (2)	5925 (2)	5725 (2)
MOSES SOUTH			
NORMAL	1900 (3)	2025 (3)	2175 (3)
EMERGENCY	2300 (4)	2550 (4)	2850 (5)

	LIMITING ELEMENT				LIMITING CONTINGENCY
(1)	Fraser – Coopers Corners (33)345kV	@LTE	1404 MW	L/O	(tower) Marcy – Coopers Corners (UCC2-41) 345kV Porter – Rotterdam (31)230kV
(2)	New Scotland – Leeds (93) 345kV	@LTE @STE	1538 MW 1724MW	L/O	New Scotland – Leeds (94) 345kV
(3)	Adirondack – Porter (12) 230kV	@LTE	353 MW	L/O	(R845 breaker failure @ Porter 230kV) Adirondack - Porter (11)230kV Edic 345/230kV (TB2) Edic 345/115kV (TB4)
(4)	Browns Falls – Taylorville (4)115kV	@STE	134 MW	L/O	Chateauguay–Massena(MSC-7040)765 kV Massena – Marcy (MSU-1) 765 kV and TransEnergie delivery
(5)	Moses - Adirondack 230kV	@STE	440 MW	L/O	Chateauguay–Massena(MSC-7040)765 kV Massena – Marcy (MSU-1) 765 kV and TransEnergie delivery

NOTE: Some transfers may be voltage/stability limited

TABLE 2.a

NYISO to ISO-NE INTERFACE LIMITS - SUMMER 2005-ALL LINES I/S

Northport –Norwalk @ 100MW

New York to New England	DIRECT TIE	NYISO FACILITY	ISO-NE FACILITY
NORMAL	825(1)	1525(2)	2350(3)
EMERGENCY	1575(4)	1700(5)	2350(3)

Northport –Norwalk @ 0 MW

	DIRECT TIE	NYISO FACILITY	ISO-NE FACILITY
NORMAL	1175(1)	1875(2)	2400(3)
EMERGENCY	1925(4)	2025(5)	2400(3)

	LIMITING ELEMENT				LIMITING CONTINGENCY
(1)	Norwalk Harbor - Northport (1385) 138kV	@LTE	318MW	L/O	(Breaker failure @Long Mountain 345kV) Long Mountain - Plumtree (321)345kV Long Mountain – Plea. Valley (398) 345kV
(2)	Northport - Northport (PAR) 138kV	@LTE	450MW	L/O	(Breaker failure @Long Mountain 345kV) Long Mountain – Plumtree (321) 345kV Long Mountain – Plea. Valley (398) 345kV
(3)	Vermont Yankee – Vernon Road Tap (K186) 115kV	@STE	272MW	L/O	Northfield – Ludlow (354) 345kV
(4)	Norwalk Harbor - Northport (1385) 138kV	@STE	428MW	L/O	Long Mountain (398) –Plea. Valley 345 kV
(5)	Northport - Northport (PAR) 138kV	@STE	450MW	L/O	Long Mountain (398) –Pleas. Valley 345 kV

Note: Northport – Norwalk Harbor flow is positive in the direction of transfer.

TABLE 2.b

ISO-NE to NYISO INTERFACE LIMITS - SUMMER 2005 -ALL LINES I/S

New England to New York	Norwalk –Northport @ 100MW		
	DIRECT TIE	**NYISO FACILITY**	**ISO-NE FACILITY**
NORMAL	1500(2)	1800(5)	1225 (4a)
EMERGENCY	1800(1)	2200(3)	1475(4b)

	Norwalk–Northport @ 200MW		
NORMAL	1150(6)	1825(5)	1275(4a)
EMERGENCY	1725(7)	1825(3)	1525(4b)

	LIMITING ELEMENT				LIMITING CONTINGENCY
(1)	Whitehall – Blissville (7) 115kV	@STE	239 MW	L/O	Alps – Berkshire (393) 345kV Berkshire 345/115kV
(2)	Whitehall – Blissville (7) 115kV	@LTE	217 MW	L/O	(Breaker failure @ Northfield) Berkshire - Northfield (312) 345kV Northfield –Vermont Yankee (381) 345kV Berkshire 345/115kV
(3)	Northport - Northport (PAR) 138kV	@STE	450MW	L/O	Long Mountain (398) -Pleasant Valley 345 kV
(4a)	Southington B2– Canal (1950) 115kV	@STE	306 MW	L/O	Southington – Frostbridge (329) 345kV + Southington (3X) 345/115kV XF (breaker failure @ Southington)
(4b)	Southington B2– Canal (1950) 115kV	@STE	306 MW	L/O	Southington – Frostbridge (329) 345kV
(5)	Mohican - Whitehall (13) 115kV	@LTE	120 MW	L/O	(Breaker failure @ Northfield) Berkshire - Northfield (312) 345kV Berkshire 345/115kV Northfield –Vermont Yankee (381) 345kV
(6)	Norwalk Harbor - Northport (1385) 138kV	@LTE	318MW	L/O	(Breaker failure @ Plea. Valley 345kV) Fishkill - Plea. Valley 345kV Long Mountain – Plea. Valley (398) 345kV
(7)	Norwalk Harbor - Northport (1385) 138kV	@STE	428MW	L/O	Long Mountain (398) -Pleasant Valley 345 kV

Note: Norwalk Harbor – Northport schedule is positive in the direction of transfer

TABLE 3.a

PJM to NYISO INTERFACE LIMITS-SUMMER 2005
ALL LINES I/S

PJM to NYISO		DIRECT TIE	NYISO FACILITY	PJM FACILITY
NORMAL		2175 (1)	3550 (2)	3000 (3)
	3-115-O/S	3200 (4)	3450 (2)	3125 (5)
EMERGENCY		2425 (1)	3675 (2)	3350 (6)
	3-115-O/S	3275 (4)	3525 (2)	3475 (6)

	LIMITING ELEMENT				LIMITING CONTINGENCY
(1)	Warren-Falconer (171) 115kV	@LTE @STE	120MW 136MW	L/O	Forest – Glade TP 230kV Glade TP- Glade 230kV Glade TP- Lewis RN 230kV Lewis RN 230/115 kV Lewis RN 230/34.5kV
(2)	Watercure 345/230kV	@LTE @STE	584MW 600MW	L/O	Oakdale - Watercure (31) 345kV
(3)	Oxbow – Lackawanna 230kV	@LTE	504MW	L/O	Homer City - Watercure (30) 345kV Warren – Falconer 115 kV
(4)	E. Towanda-Hillside (70) 230kV	@LTE @STE	531MW 554MW	L/O	Homer City - Watercure (30) 345kV
(5)	Oxbow – Lackawanna 230kV	@LTE	504MW	L/O	Moshannon - Grover 230kV
(6)	Oxbow – Lackawanna 230kV	@NOR	499MW		Pre- Contingency Loading

NOTE: Emergency Transfer Limits may require line outages as described in Section 4.III. PAR schedules have been optimized for the emergency limits as described in Appendix B. Some transfers may be stability limited.

TABLE 3.b

NYISO to PJM INTERFACE LIMITS-SUMMER 2005
ALL LINES I/S

NYISO to PJM		DIRECT TIE	NYISO FACILITY	PJM FACILITY
NORMAL		1875(1)	2500(6)	2125(3)
	3-115-O/S	2200(4)	2300(2)	2050(3)
EMERGENCY		2025(7)	2675(5)	2400(8)
	3-115-O/S	2200(4)	2450(5)	2200(8)

	LIMITING ELEMENT				LIMITING CONTINGENCY
(1)	Warren-Falconer (171) 115kV	@LTE	120MW	L/O	S Ripley – Erie E 230kV E. Sayre - N. Waverly 115kV
(2)	Dunkirk - S Ripley 230kV	@LTE	530MW	L/O	Wayne – Handsome Lake 345 kV
(3)	Homer City 345/230 kV	@LTE	699MW	L/O	Homer City 345/230 kV
(4)	S Ripley – Erie E 230kV	@NOR	499MW		Pre-Contingency Loading
(5)	Dunkirk - S Ripley 230kV	@NOR	482MW		Pre-Contingency Loading
(6)	Goudey – Oakdale 115kV	@LTE	239MW	L/O	Meyer – Hillside 230kV Hillside – Watercure 230kV
(7)	Warren-Falconer (171) 115kV	@STE	136MW	L/O	S Ripley – Erie E 230kV
(8)	Erie E - Erie SE 230kV	@NOR	477MW		Pre-Contingency Loading

NOTE: Emergency Transfer Capability Limits may have required line outages as described in Section 4.III. PAR schedules have been optimized for the emergency limits as described in Appendix B.

TABLE 4

NYISO- IESO INTERFACE LIMITS - SUMMER 2005
ALL LINES I/S

Ontario to New York	L33/34P @ 0 MW			L33/34P @ 400 MW		
	DIRECT TIE	**NYISO FACILITY**	**IESO FACILITY**	**DIRECT TIE**	**NYISO FACILITY**	**IESO FACILITY**
NORMAL	1950(1)	1400(8)	1300(4)	2350(1)	1775(8)	1725(4)
EMERGENCY	2325(1)	1950(2)	1750(3)	2700(1)	2450(2)	2100(3)

New York to Ontario	L33/L34P @ 0 MW			L33/34P @ 200 MW		
NORMAL	1300(6)		1000(5)	1500(6)		1150(5)
EMERGENCY	1550(7)		1650(9)	1725(7)		1800(9)

	LIMITING ELEMENT				LIMITING CONTINGENCY
(1)	Beck – Niagara (PA27) 230kV	@LTE @STE	460 MW 558 MW	L/O	Beck – Niagara (PA 302) 345kV
(2)	Niagara – Rochester (NR-2) 345kV	@LTE @STE	1501 MW 1685 MW	L/O	AES/Somerset - Rochester (SR-1) 345kV
(3)	Middleport 500/ 220kV (T3)	@NOR	750 MW		Pre- Contingency Loading
(4)	Middldk2 - Neal JQ25 220kV	@LTE	521MW	L/O	Beck- Hanon -Neal– Middldk2 (Q23BM) 220kV Beck-Hanon-Nebo – Middldk2(Q24HM) 220kV
(5)	Neal JQ23–Burlington J23 220kV	@LTE	581 MW	L/O	Beck-Hanon -Neal – Middldk2 (Q25BM) 220kV Beck-Hanon-Nebo – Middldk1(Q29HM) 220kV
(6)	Beck – Niagara (PA27) 230kV	@LTE	460 MW	L/O	BK-DT302 Beck2 DK – Beck2 PA2 220 kV Beck2 DK – Beck2 Q22 220 /13.8 kV Beck2 DK – Beck2 G15 220 kV
(7)	Beck – Niagara (PA27) 230kV	@NOR	400 MW		Pre- Contingency Loading
(8)	Packard2 – Niagara2W (61) 345kV	@LTE	717MW	L/O	Packard2 – Niagara2W (62) 230kV Packard2 – Beck (BP76) 230kV
(9)	Neal JQ23–Burlington J23 220kV	@NOR	482 MW		Pre- Contingency Loading

NOTE: Some transfers may be stability limited