



NPCC's Interregional Long Range Adequacy Overview

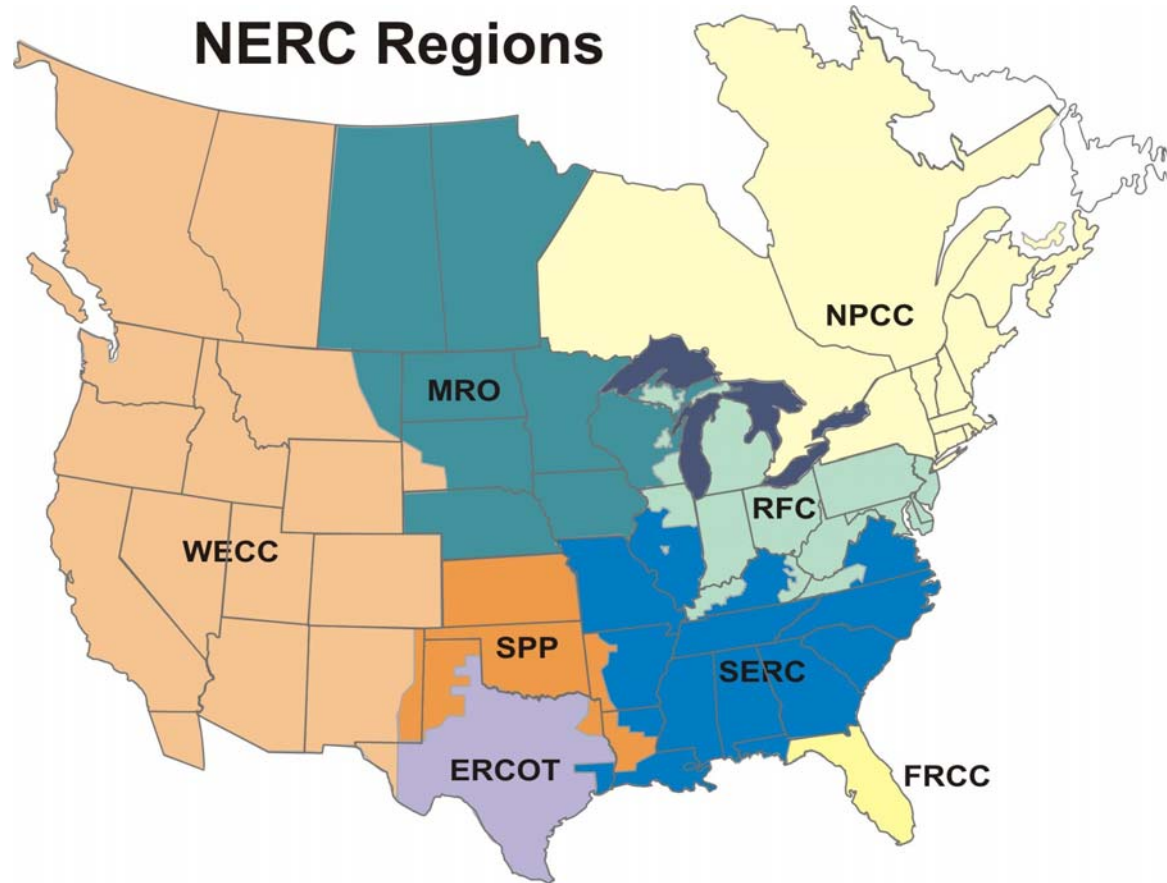
March 23, 2007

Presentation by:

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NPCC, Inc.**



Northeast Power Coordinating Council, Inc.



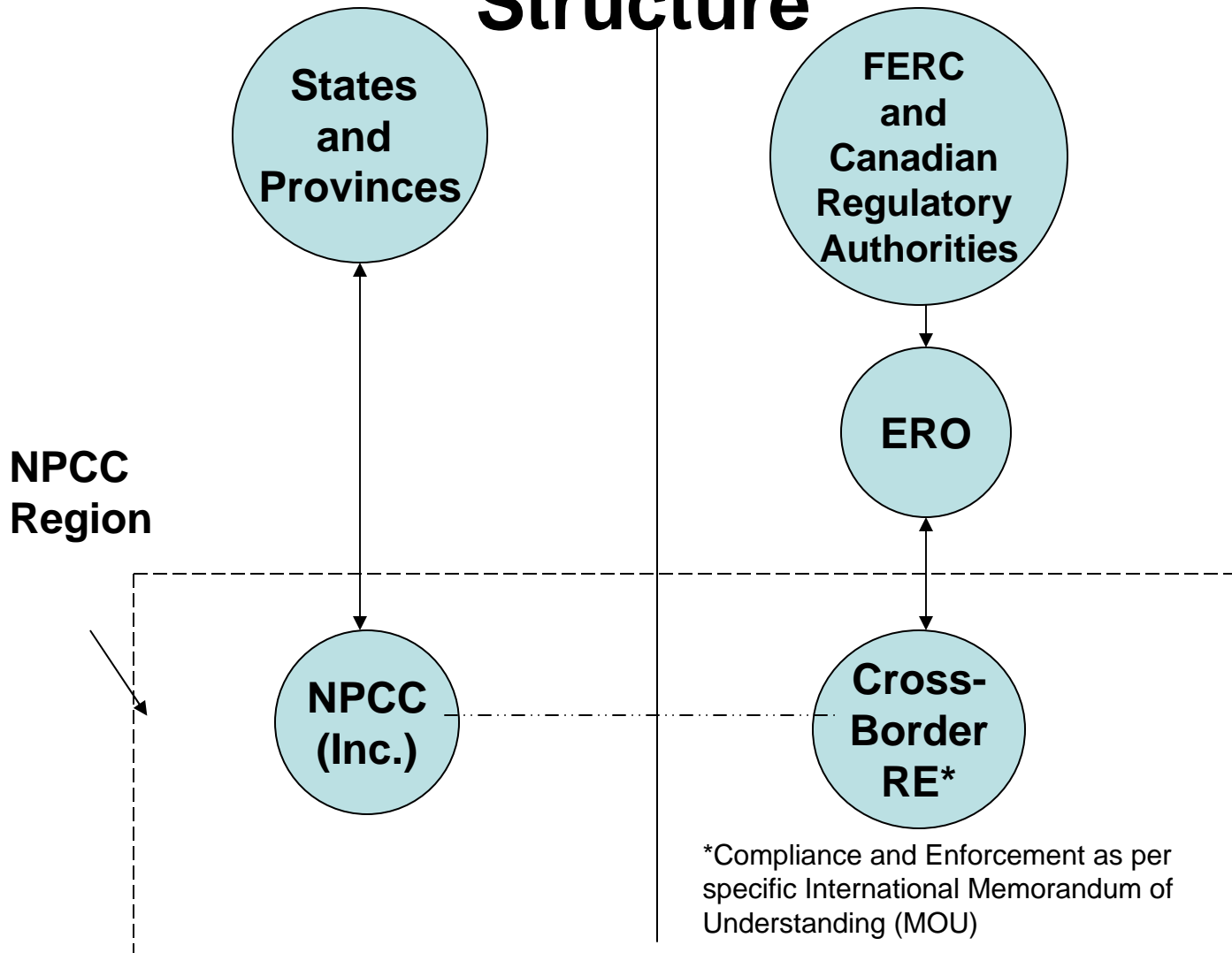
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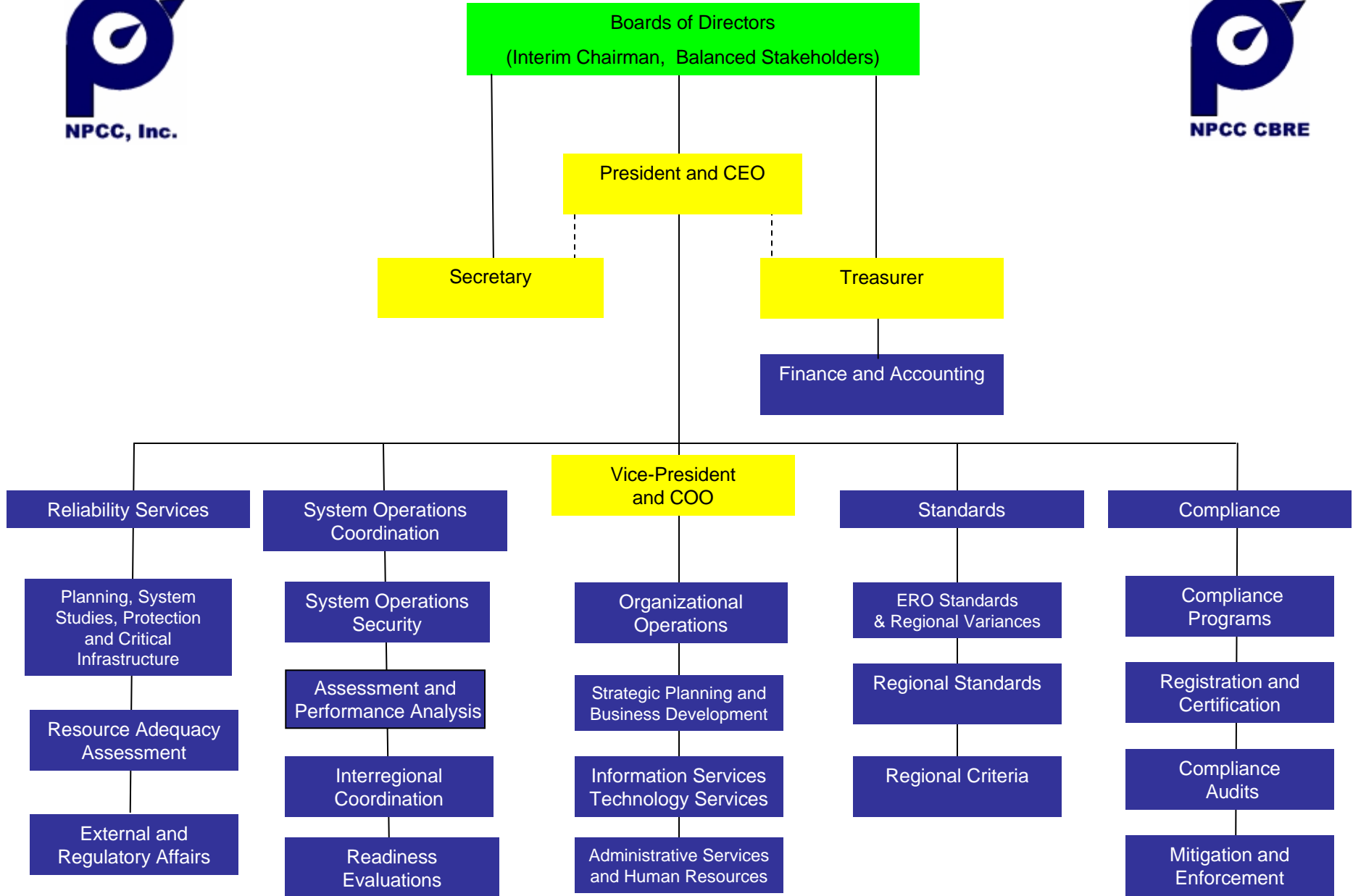
- One million square miles
- 56 million people
- 45% US
55% Canadian
- Represents 70% of Canadian Load

<http://www.npcc.org/>



NPCC, Inc. International Regional Structure





January 16, 2007



NPCC Basic Criteria for Design and Operation Of Interconnected Power Systems

3.0 Resource Adequacy - Design Criteria

Each **Area's** probability (or risk) of disconnecting any **firm load** due to resource deficiencies shall be, on average, not more than once in ten years.

Compliance with this criteria shall be evaluated probabilistically, such that the **loss of load expectation [LOLE]** of disconnecting **firm load** due to resource deficiencies shall be, on average, no more than 0.1 day per year.

<http://www.npcc.org/publicFiles/reliability/criteriaGuidesProcedures/new/a-02.pdf>



NPCC Basic Criteria for Design and Operation Of Interconnected Power Systems

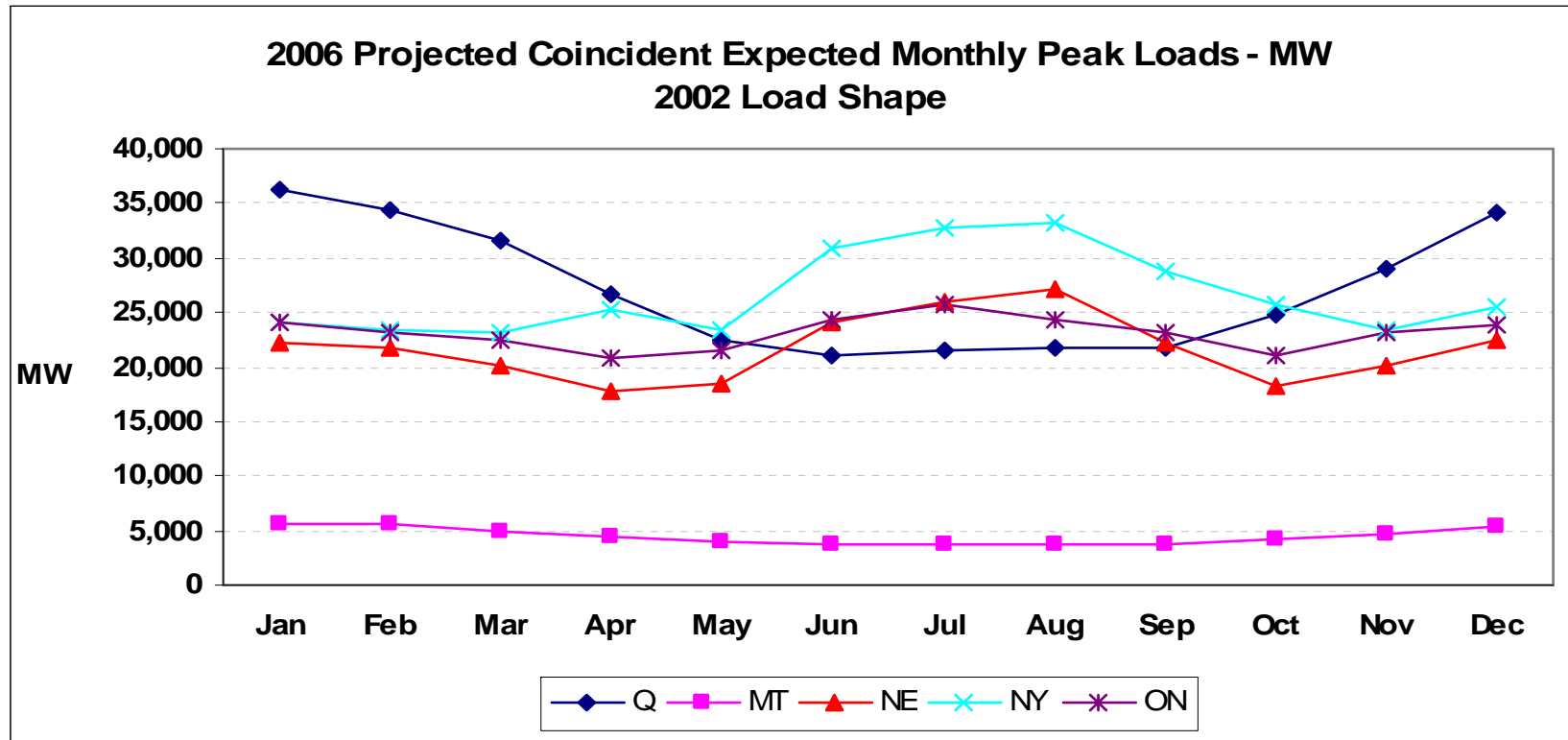
3.0 Resource Adequacy - Design Criteria

This evaluation shall make due allowance for demand uncertainty, scheduled outages and deratings, forced outages and deratings, assistance over interconnections with neighboring **Areas** and **Regions**, transmission transfer capabilities, and capacity and/or load relief from available operating procedures.

<http://www.npcc.org/publicFiles/reliability/criteriaGuidesProcedures/new/a-02.pdf>

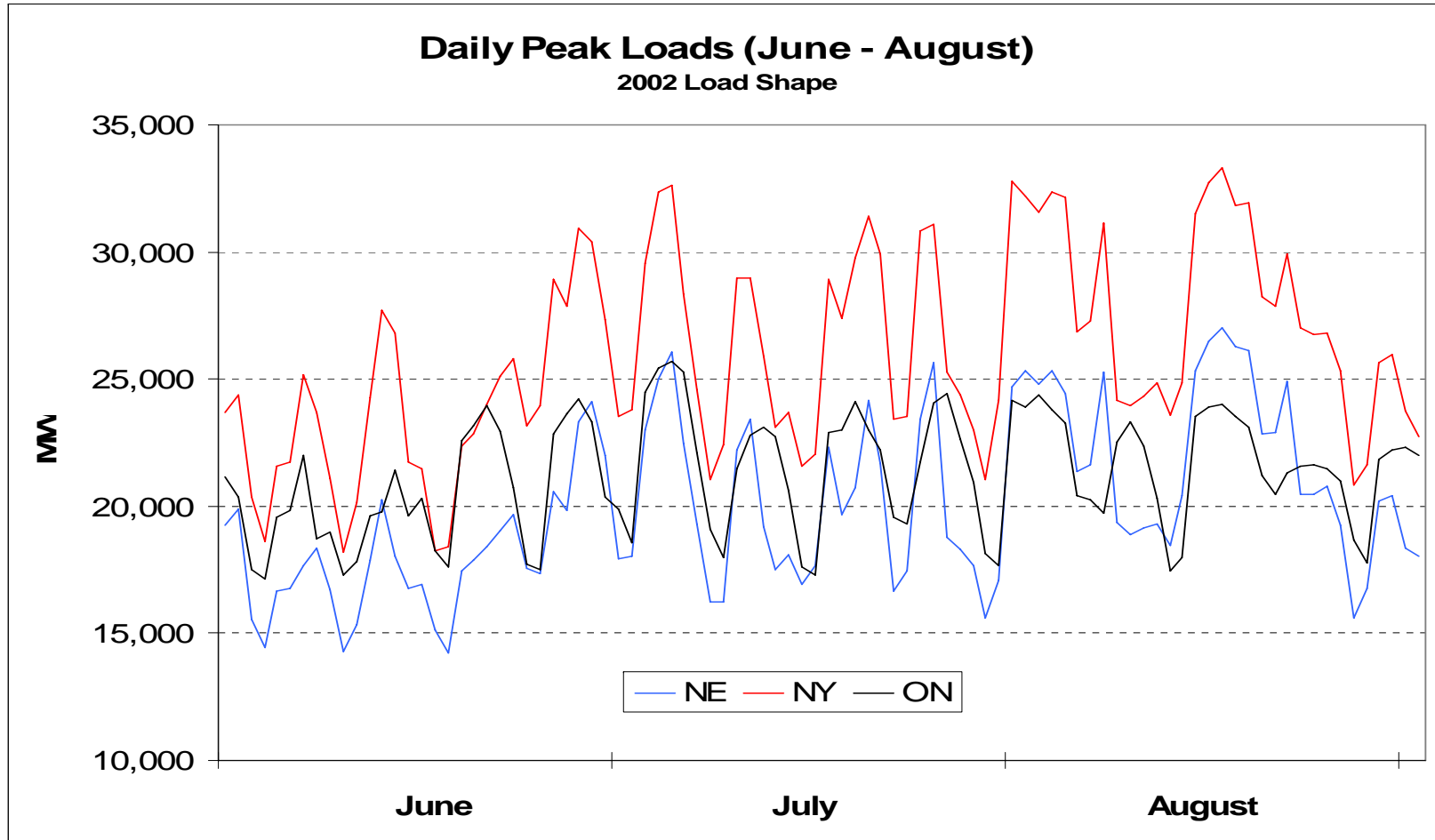


NPCC Summer 2006 Multi-Area Probabilistic Assessment





NPCC Summer 2006 Multi-Area Probabilistic Assessment



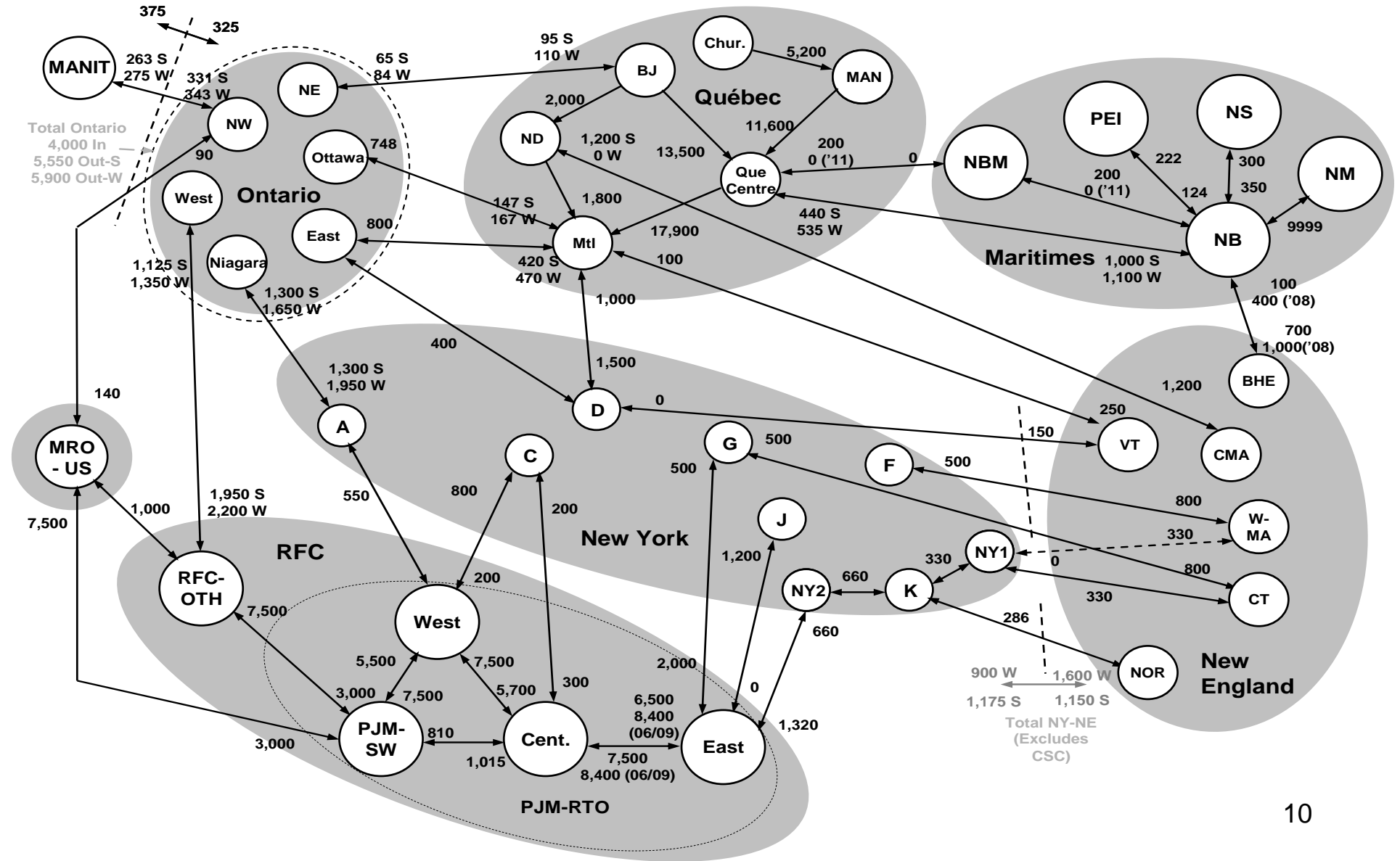


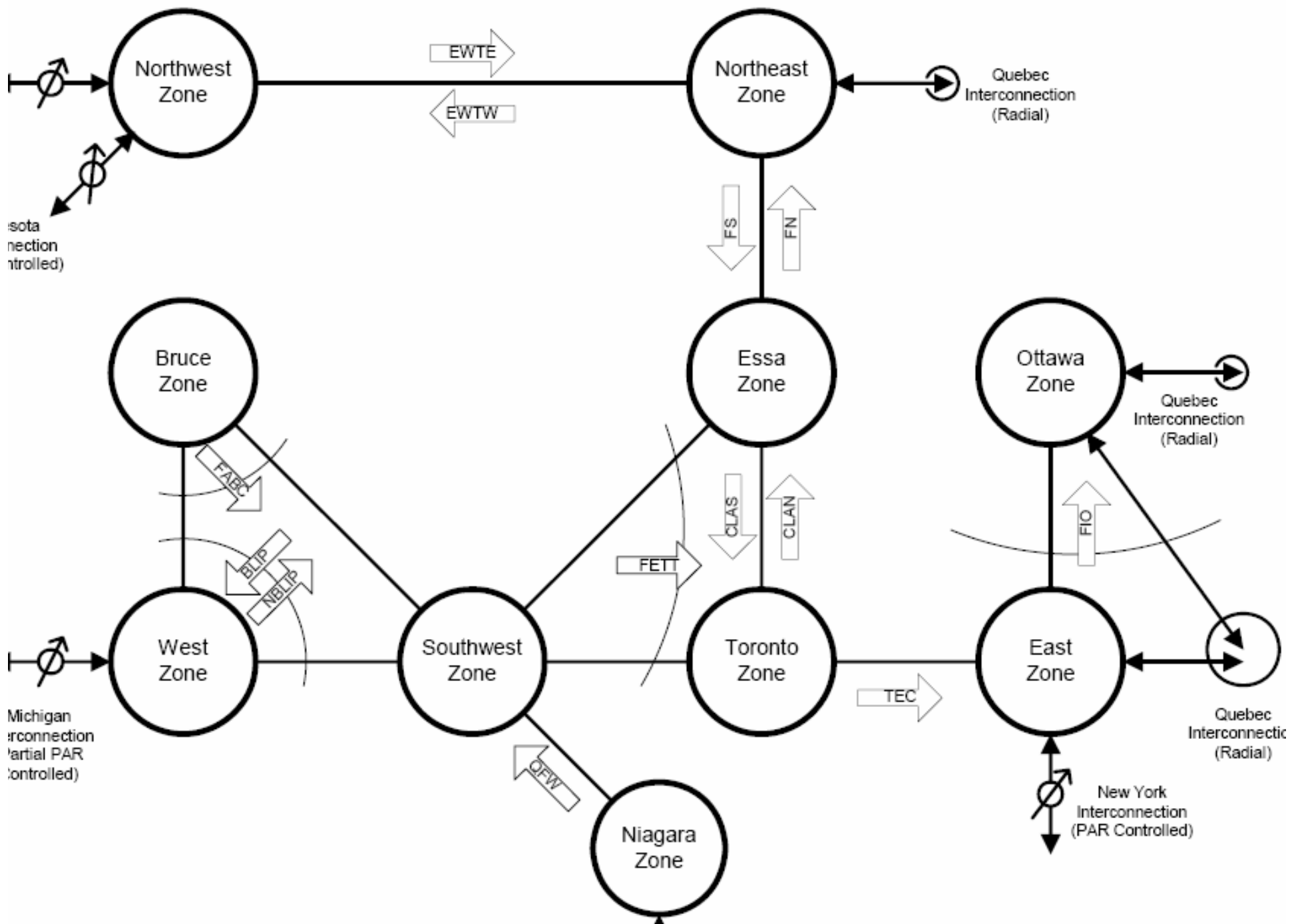
NPCC Interregional Long Range Adequacy Overview

Area	Per-Unit Variation in Load						
MT	1.1000	1.1000	1.0500	1.0000	0.9500	0.9000	0.9000
NE	1.1100	1.0469	0.9952	0.9533	0.9444	0.9000	0.8500
NY	1.0430	1.0310	1.0160	0.9980	0.9750	0.9440	0.9050
ON	1.0444	1.0296	1.0148	1.0000	0.9852	0.9704	0.9556
QC	1.0700	1.0550	1.0400	1.0000	0.9600	0.9450	0.9300
Prob.	0.0062	0.0606	0.2417	0.3830	0.2417	0.0606	0.0062



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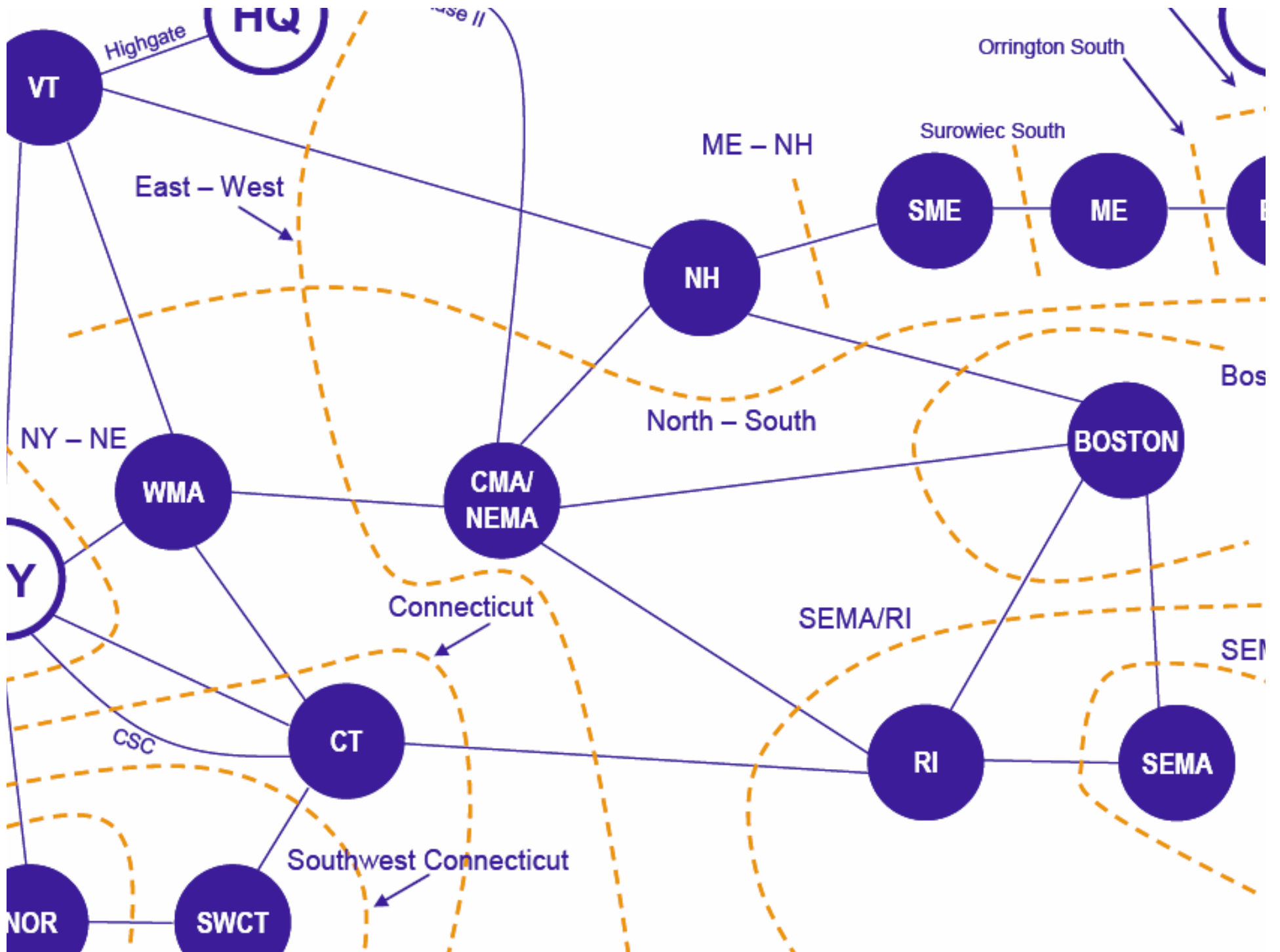
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Michigan
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New York
Interconnection
(PAR Controlled)

Quebec
Interconnection
(Radial)

Quebec
Interconnectic
(Radial)





NPCC Interregional Long Range Adequacy Overview

Actions	MT (Feb)	NE (Aug)	NY (Aug)	ON (Aug)	QC (Jan)
1. Curtail Load / Utility Surplus	-	-	-	188	1,023
Appeals	-	-	-	1% of load	-
LRP/SCR/EDRP	-	284 ^[1]	1,145	-	-
Manual Voltage Reduction	-	-	0.54% of load	-	-
2. No 30-min Reserves	233	578	600	473	500
3. Voltage Reduction or Interruptible Loads ^[2]	531	1.50 % of load	1.43% of load	2.60 % of load	200
ELRP ^[3]	-	-	-	112	-
4. No 10-min Reserves	625	1,001	-	895	750
General Public Appeals	-	-	158	-	-
5. EDRP	-	-	-	115	-
General Public Appeals	-	-	-	-	-
No 10-min Reserves	-	-	1,200	-	-

^[1] Derated value shown accounts for assumed availability.

^[2] Interruptible Loads for the Maritimes area (implemented only for the Area), Voltage Reduction for all others.

^[3] Emergency Load Reduction Program.



NPCC Interregional Long Range Adequacy Overview

Area Providing Assistance	Priority of Assistance	
	1 ST	2 ND
Québec	MT ON	NE NY
Maritimes	QC ON	NE NY
New England	NY	QC MT ON
New York	NE	QC MT ON
Ontario	QC MT	NE NY
Millbank Units	QC	MT
PJM	NE NY	
RFC-OTH	PJM	
MRO	RFC-OTH	

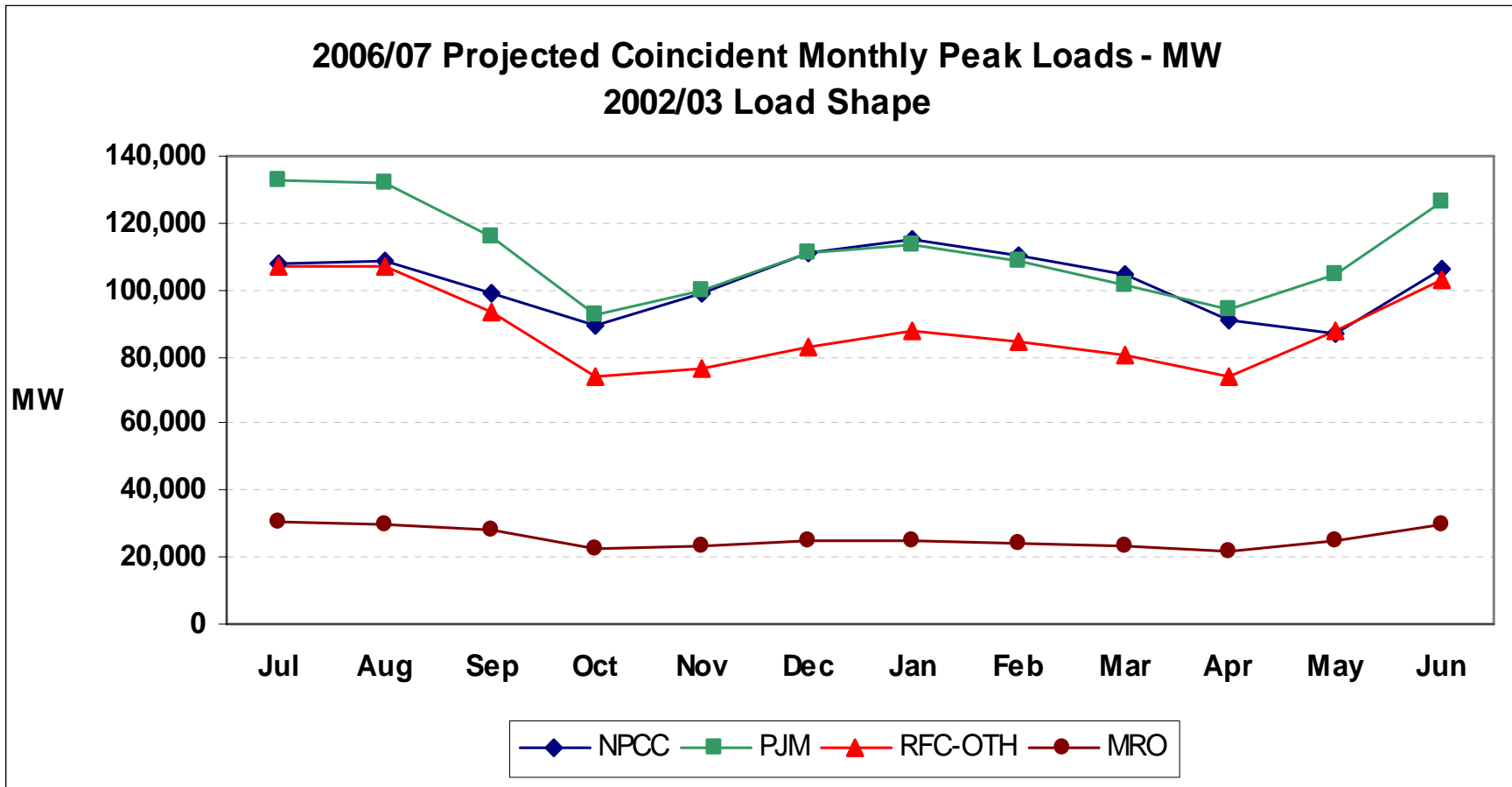


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	PJM	RFC-Other	MRO-US
Peak Load (MW)	113,347	88,070	25,265
Peak Month	January	January	January
Assumed Capacity (MW)	175,626	119,894	35,017
Purchase/Sale (MW)	-1,774	0	0
Reserve (%)	53	36	39
Weighted Unit Availability (%)	88.3	83.8	83.1
Operating Reserves (MW)	3,400	2,206	1,700
Curtable Load (MW)	2,061	2,000	270
No 30-min Reserves (MW)	2,765	1,470	1,200
Voltage Reduction (MW)	2,201	0	1,100
No 10-min Reserves (MW)	634	736	500
Appeals (MW)	400	0	200

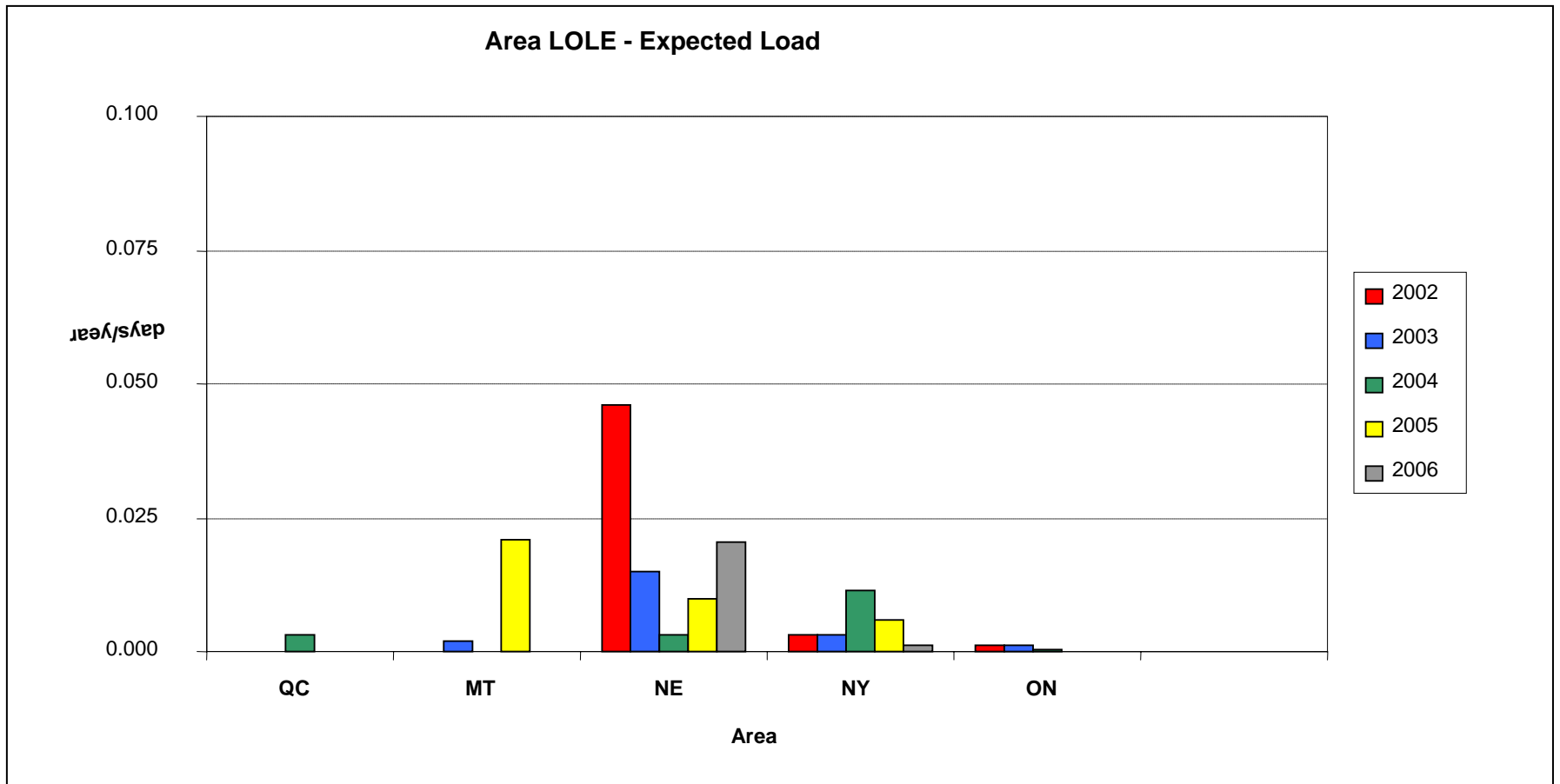


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