

Western NY Public Policy Transmission Need: Updated Baseline Results

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October 29, 2015



Schedule

- ◆ 10/29: NYISO presents updated baseline results, accounting for National Grid LTP updates
- ◆ 11/1: NYISO solicits Public Policy Transmission Projects and Other Public Policy Projects
 - *Solicitation window: 60 days*
 - *Developer qualification information: submit no later than 30 days after the solicitation for solutions*
- ◆ 12/1: Deadline for submission of Developer qualification information for the Public Policy process
 - *Only for Developers intending to propose a Public Policy Transmission Project*
 - *Developers already qualified in the reliability planning process need only submit any material updates. See [Technical Bulletin 232](#) for guidance.*

Schedule

- ◆ 12/31: Developers submit required project information
 - *See Section 3.3 of Public Policy Transmission Planning Process Manual for details*
 - *NYISO encourages Developers to submit a valid Interconnection Request or a Study Request, as applicable, at this time*
 - NYISO proposed this submission as a tariff requirement in its June 29, 2015, filing currently pending at FERC
- ◆ 12/31: Developers proposing a Public Policy Transmission Project also provide:
 - *Executed study agreement (PPTPP Manual, Attachment E)*
 - *Non-refundable application fee of \$10,000*
 - *Study deposit of \$100,000*
- ◆ The solicitation letter will provide instructions for delivery of documentation, fees, and deposits.

Updates to Baseline Results

- ◆ National Grid LTP updates
 - *Bypassable 1.532% series reactors on the Packard – Huntley 230 kV lines #77 and #78*
 - *Two 100 MVAR shunt capacitor banks at the Huntley 230 kV station*
- ◆ Apply local Transmission Owner planning criteria to the 115 kV system
 - *For Normal Transfer Criteria, long term emergency (LTE) ratings are applied for all design contingencies for N-1.*
 - Short term emergency (STE) ratings and single-element contingencies are applied for N-1-1.

Western NY PPTN

- ◆ NYISO should consider projects that increase Western NY transmission capability sufficient to:
 - *Obtain the full output from Niagara (2,700 MW including Lewiston Pumped Storage);*
 - *Maintain certain levels of simultaneous imports from Ontario across the Niagara tie lines (i.e., maximize Ontario imports under normal operating conditions and at least 1,000 MW under emergency operating conditions);*
 - *Maximize transfers out of Zone A to the rest of the state;*
 - *Prevent transmission security violations (thermal, voltage or stability) that would result under normal and emergency operating conditions; and*
 - *Maintain reliability of the transmission system with fossil-fueled generation in Western NY out-of-service, as well as in-service.*

Sufficiency Base Case

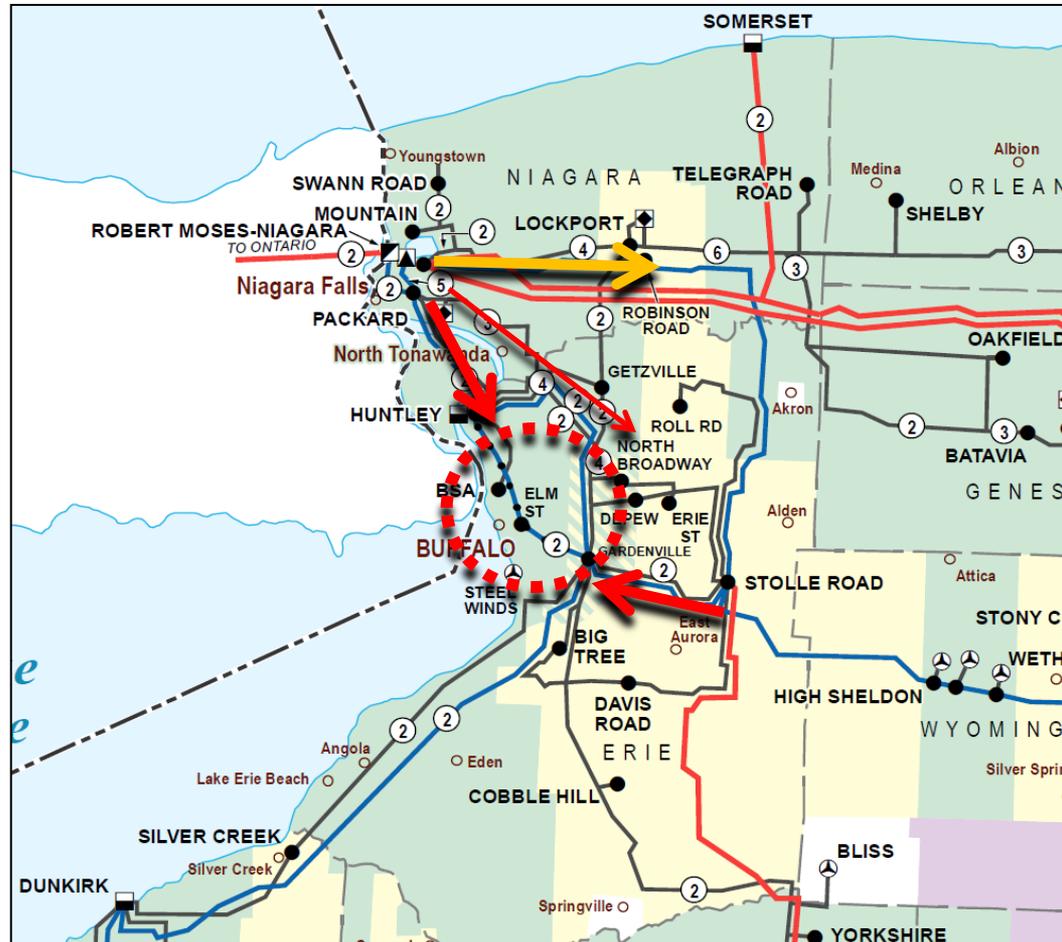
- ◆ 2014 Comprehensive Reliability Plan base case representation for 2024
- ◆ Niagara & Lewiston output of 2,700 MW
 1. *Niagara 230 kV units at full output*
 2. *Niagara 115 kV units at full output*
- ◆ 1,000 MW Ontario Import to Zone A
 - *Allowed to reduce in cases other than N-1 emergency transfers*
- ◆ Combination of major fossil-fueled generators in Zone A resulting in worst reliability violations
 - *Dunkirk out-of-service*
 - *Huntley out-of-service*
 - *Lockport in-service*
 - *Somerset in-service*
- ◆ National Grid series reactors and capacitor banks included
 - *Developers may elect to have the series reactors bypassed as part of the project proposal.*

Sufficiency Criteria

- ◆ Ontario Import and Dysinger East transfer limits (N-1)
 - *Project must achieve 2,700 MW output from Niagara plus:*
 - at least 1,000 MW Ontario Import under NYSRC Emergency Transfer Criteria
 - Ontario Import limit greater than zero under NYSRC Normal Transfer Criteria and local Transmission Owner planning criteria
- ◆ Transmission Security (N-1-1)
 - *Project must maintain transmission security with 2,700 MW output from Niagara*

Overview of Limits

- ◆ 230 kV and 115 kV overloads between Niagara and Gardenville
 - *Primarily for loss of one, two, or three 230 kV lines*
- ◆ Additional and aggravated overloads for increased Ontario Imports
- ◆ Voltage collapse or low voltage in the Buffalo area
 - *Primarily for loss of two or three 230 kV lines between Niagara and Gardenville*



Emergency Transfer Criteria N-1

- ◆ Ontario Import of 1,000 MW without series reactors

Monitored Facility	Applicable	Dispatch 1 - Niagara 230 kV Max		Dispatch 2 - Niagara 115 kV Max	
	Rating [MVA]	Contingency	AC % Loading	Contingency	AC % Loading
135303 SAWYER77 230 135415 PACKARD2 230 1	704	B:PACKT3	117.27	S:PA_HNTL78	111.11
135304 SAWYER78 230 135415 PACKARD2 230 2	746	S:PA_HNTL77	110.19	S:PA_HNTL77	105.06
135303 SAWYER77 230 135414 HUNTLEY2 230 1	755	B:PACKT3	101.13	-	-
135304 SAWYER78 230 135414 HUNTLEY2 230 2	755	OE:PACK_77	100.29	-	-

Table lists the worst contingency for each overloaded element. Full results are included in the results spreadsheets.

- ◆ No overloads (over 100%) occur with series reactors in-service
 - *Numerous elements loaded above 90% of applicable rating*

Normal Transfer Criteria N-1

- Ontario Import of 0 MW (minimum criteria) without series reactors

Monitored Facility	Applicable Rating [MVA]	Dispatch 1 - Niagara 230 kV Max		Dispatch 2 - Niagara 115 kV Max	
		Contingency	AC % Loading	Contingency	AC % Loading
135458 NI.B-181 115 135460 PACK(N)E 115 1	166	T:77&78	114.14	T:77&78	119.04
130762 GARDV230 230 130767 STOLE230 230 1	478	T:77&78	112.32	T:77&78	108.09
135304 SAWYER78 230 135415 PACKARD2 230 2	644	S:PA_HNTL77	108.34	S:PA_HNTL77	102.21
135303 SAWYER77 230 135415 PACKARD2 230 1	644	S:PA_HNTL78	108.12	S:PA_HNTL78	102.00
135415 PACKARD2 230 147842 NIAGAR2W 230 2 (See footnote)	841	T:61&64	103.34	T:61&64	87.17
130847 ROLL 115 115 130857 STOLE115 115 1	90	SB:181:ER	103.22	SB:181:ER	102.95
135461 PACK(S)W 115 147851 NIAG115W 115 3 (See footnote)	351	DCT:115:193+194	101.47	DCT:115:193+194	121.02
135450 GRDNVL1 115 135453 LONG-180 115 1	166	DCT:230:77+78+THR	101.07	DCT:230:77+78+THR	108.23
130795 DEPEW115 115 130799 ERIE 115 115 1	119	SB:PK115 30+40	100.75	SB:PK115 30+40	100.81
135460 PACK(N)E 115 147850 NIAG115E 115 2 (See footnote)	328	DCT:115:101+191	90.82	DCT:115:101+191	110.60
135460 PACK(N)E 115 135538 LONG-182 115 1	208	-	-	DCT:230:77+78	103.73
135449 GR.I-182 115 135459 NI.B-182 115 1	181	-	-	DCT:230:77+78+THR	101.07

Tables list the worst contingency for each overloaded element. Full results are included in the results spreadsheets.

Footnote : Niagara-exit lines use NYSRC Reliability Rule Exception #13. Developer must ensure that sufficient generation can be reduced at Niagara to return the flows to less than their STE ratings within 5 minutes and to less than their LTE ratings within 10 minutes from the initial overload.

Normal Transfer Criteria N-1

- Ontario Import of 0 MW (minimum criteria) with series reactors

Monitored Facility	Applicable	Dispatch 1 - Niagara 230 kV Max		Dispatch 2 - Niagara 115 kV Max	
	Rating [MVA]	Contingency	AC % Loading	Contingency	AC % Loading
135458 NI.B-181 115 135460 PACK(N)E 115 1	166	DCT:115:180+182N	112.23	DCT:115:180+182N	121.98
130762 GARDV230 230 130767 STOLE230 230 1	478	DCT:230:77+78+THR	112.20	DCT:230:77+78+THR	107.01
130847 ROLL 115 115 130857 STOLE115 115 1	90	SB:181:ER	103.19	SB:181:ER	103.11
135461 PACK(S)W 115 147851 NIAG115W 115 3 (See footnote)	351	DCT:115:193+194	103.03	DCT:115:193+194	122.53
135449 GR.I-182 115 135459 NI.B-182 115 1	181	-	-	DCT:230:77+78	101.15
135451 HUNTLEY1 115 135498 ZRMN-130 115 1	181	-	-	NF:115:133 HT	102.26
135451 HUNTLEY1 115 135562 S214-133 115 1	181	-	-	SB:130:PK	100.19
135460 PACK(N)E 115 135538 LONG-182 115 1	208	-	-	DCT:115:180+181/922	106.27
135460 PACK(N)E 115 147850 NIAG115E 115 2 (See footnote)	328	-	-	DCT:115:101+191	111.63
135497 ZRMN-133 115 135562 S214-133 115 1	185	-	-	SB:130:PK	100.91

Tables list the worst contingency for each overloaded element. Full results are included in the results spreadsheets.

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Normal Transfer Criteria N-1-1

- Ontario Import allowed to back down and generation allowed to redispatch (minimum criteria) without series reactors

N-1-0

Monitored Facility	Applicable Rating [MVA]	Dispatch 1			Dispatch 2		
		First Contingency	Second Contingency	AC %Loading	First Contingency	Second Contingency	AC %Loading
135304 SAWYER78 230 135415 PACKARD2 230 2	556	HUNTLEY - PACKARD 77 230	Base Case	109.74	HUNTLEY - PACKARD 77 230	Base Case	101.66
135303 SAWYER77 230 135415 PACKARD2 230 1	556	HUNTLEY - PACKARD 78 230	Base Case	108.56	HUNTLEY - PACKARD 78 230	Base Case	101.37
135415 PACKARD2 230 147842 NIAGAR2W 230 1	620	NIAGARA - PACKARD 62 230	Base Case	107.79	-	-	-
135415 PACKARD2 230 147842 NIAGAR2W 230 2	620	NIAGARA - PACKARD 61 230	Base Case	107.68	-	-	-

N-1-1

Monitored Facility	Applicable Rating [MVA]	Dispatch 1			Dispatch 2		
		First Contingency	Second Contingency	AC %Loading	First Contingency	Second Contingency	AC %Loading
130762 GARDV230 230 130767 STOLE230 230 1	478	R:HC-SR_37&W-F_171	T:77&78	122.33	R:HC-SR_37&W-F_171	T:77&78	122.56
135304 SAWYER78 230 135415 PACKARD2 230 2	644	HUNTLEY - PACKARD 77 230	STOLLRD - GARDENVILL 66 230	115.53	NIAGARA - ROBINSON 64 230	HUNTLEY - PACKARD 77 230	107.57
135303 SAWYER77 230 135415 PACKARD2 230 1	644	HUNTLEY - PACKARD 78 230	STOLLRD - GARDENVILL 66 230	114.33	HUNTLEY - PACKARD 78 230	STOLLRD - GARDENVILL 66 230	107.34
135304 SAWYER78 230 135414 HUNTLEY2 230 2	654	HUNTLEY - PACKARD 77 230	STOLLRD - GARDENVILL 66 230	104.23	-	-	-
135303 SAWYER77 230 135414 HUNTLEY2 230 1	654	HUNTLEY - PACKARD 78 230	STOLLRD - GARDENVILL 66 230	103.28	-	-	-
135415 PACKARD2 230 147842 NIAGAR2W 230 2 (See footnote)	841	NIAG - NEWROCH 1 345	T:61&64	100.41	R:HC-SR_37&W-F_171	T:61&64	86.65
147850 NIAG115E 115 147842 NIAGAR2W 230 1 (See footnote)	288	NIAGARA - PACKARD 61 230	SB:PA230_R506	100.39	-	-	-
135415 PACKARD2 230 147842 NIAGAR2W 230 1 (See footnote)	841	NIAGARA - ROBINSON 64 230	T:62&BP76	100.21	STOLLRD - GARDENVILL 66 230	T:62&BP76	86.40
135497 ZRMN-133 115 135562 S214-133 115 1	206	-	-	-	PACKARD 230/115 4TR	NIAGARA 230/115 2TR	100.05

Tables list the worst contingency for each overloaded element. Full results are included in the results spreadsheets.

Footnote : Niagara-exit lines use NYSRC Reliability Rule Exception #13. Developer must ensure that sufficient generation can be reduced at Niagara to return the flows to less than their STE ratings within 5 minutes and to less than their LTE ratings within 10 minutes from the initial overload.

Normal Transfer Criteria N-1-1

- Ontario Import allowed to back down and generation allowed to redispatch (minimum criteria) with series reactors

N-1-0

Monitored Facility	Applicable Rating [MVA]	Dispatch 1			Dispatch 2		
		First Contingency	Second Contingency	AC %Loading	First Contingency	Second Contingency	AC %Loading
135327 AM.S-54 115 135450 GRDNV1 115 1	129	LN:115:181/922	Base Case	107.32	LN:115:181/922	Base Case	107.79
135458 NI.B-181 115 135460 PACK(N)E 115 1	160	-	-	-	LN:115:182S	Base Case	101.97
135454 MLPN-129 115 135461 PACK(S)W 115 1	239	-	-	-	LN:115:130	Base Case	100.02

N-1-1

Monitored Facility	Applicable Rating [MVA]	Dispatch 1			Dispatch 2		
		First Contingency	Second Contingency	AC %Loading	First Contingency	Second Contingency	AC %Loading
135461 PACK(S)W 115 147851 NIAG115W 115 1 (See footnote)	351	LN:115:195	LN:115:194	108.6	LN:115:195	LN:115:194	134.63
135461 PACK(S)W 115 147851 NIAG115W 115 2 (See footnote)	351	LN:115:195	LN:115:193	108.6	LN:115:193	LN:115:195	134.63
135461 PACK(S)W 115 147851 NIAG115W 115 3 (See footnote)	351	LN:115:193	LN:115:194	101.5	LN:115:193	LN:115:194	125.23
147850 NIAG115E 115 147842 NIAGAR2W 230 1 (See footnote)	239	NIAGARA - PACKARD 61 230	SB:PA230_R506	123.2	PACKARD 230/115 3TR	T:77&78	100.13
130762 GARDV230 230 130767 STOLE230 230 1	478	LN:115:180	T:77&78	121.33	WTHRS - MEYER 230	T:77&78	118.08
130795 DEPEW115 115 130799 ERIE 115 115 1	119	First:Lancaster_926B	LN:115:181/922	118.34	First:Lancaster_926B	LN:115:181/922	118.07
135455 MLPN-130 115 135461 PACK(S)W 115 1	298	-	-	-	NIAGARA 230/115 2TR	LN:115:129	101.21
135415 PACKARD2 230 147842 NIAGAR2W 230 2 (See footnote)	841	NIAGARA 230/115 1TR	T:61&64	100.61			
135497 ZRMN-133 115 135562 S214-133 115 1	206	-	-	-	HUNTLEY - PACKARD 78 230	LN:115:130	100.35
135451 HUNTLEY1 115 135498 ZRMN-130 115 1	206	-	-	-	NIAGARA 230/115 2TR	LN:115:133	100.34
135303 SAWYER77 230 135414 HUNTLEY2 230 1	654	HUNTLEY - PACKARD 78 230	B:STOLE230	100.1	-	-	-
135415 PACKARD2 230 147842 NIAGAR2W 230 1 (See footnote)	841	LN:115:192	T:62&BP76	100.08	-	-	-
135454 MLPN-129 115 135461 PACK(S)W 115 1	298	-	-	-	NIAGARA 230/115 2TR	LN:115:130	100

Tables list the worst contingency for each overloaded element. Full results are included in the results spreadsheets.

Footnote : Niagara-exit lines use NYSRC Reliability Rule Exception #13. Developer must ensure that sufficient generation can be reduced at Niagara to return the flows to less than their STE ratings within 5 minutes and to less than their LTE ratings within 10 minutes from the initial overload.

Transmission Security N-1-1

- ◆ For additional information, results are also available for Ontario Imports held at 1,000 MW and no generation redispatch allowed.
- ◆ Increased Ontario Imports result in additional and aggravated overloads on 230 kV and 115 kV facilities between Niagara and Gardenville.
- ◆ The worst overloads are for the N-1-1 loss of one 230 or 345 kV circuit followed by the loss of one or two 230 or 345 kV circuits (common tower or stuck breaker)

Baseline Results and Cases

- ◆ All baseline study results are posted on the public NYISO [website](#):
 - *Planning > Planning Studies > Public Policy Documents > Western NY*
- ◆ Powerflow base cases and auxiliary files are available for Developers, subject to submitting a [CEII request](#)
 - *Question 2: Checkbox “Power flow, dynamics, and/or short circuit databases other than Interconnection Study Databases”*
 - *Question 11: “Western NY Public Policy Transmission Need baseline cases and auxiliary files”*
- ◆ CEII files will be provided via the NYISO ePlanning system

Questions

- ◆ Questions regarding the Public Policy Transmission Planning Process or the Western NY baseline results may be sent to:
PublicPolicyPlanningMailbox@nyiso.com

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



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