



2016 RNA:
Transmission Security
2nd Pass and Scenario
Results

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Background

- **This presentation addresses results of:**
 - ***The 2nd Pass***
 - ***The Western NY Public Policy Scenario***
 - ***The 90/10 Forecasted Load Scenario***
- **Note: Both scenarios are performed on the original (“1st Pass”) Base Cases**

Next Steps from June 22nd ESPWG presentation

- **Stakeholders to report updates before the new **July 5, 2016** lock-down date.**
- **NYISO to evaluate the updates against the inclusion rules and their relevance to the preliminary (“1st pass”) RN identified in this presentation.**
- **NYISO to finalize the Base Cases and identify the final (“2nd pass”) RN.**
- **In parallel with the 2nd pass, NYISO to finalize the scenarios on the original Base Cases.**

Updates provided for 2nd Pass

- **Model Corrections**
 - *Rating corrections in Long Island and Central Areas*
 - *Corrections to one line impedance, one bus load, and one transformer voltage in the Central Area*
- **LTP updates**
 - *Stolle-Gardenville (66 line) 230kV rating increase*
 - *Clay-Pannell (#1 & #2) 345kV rating increase*

Transmission Security: Thermal

Zone	Owner	Monitored Element	Normal Rating (MVA)	LTE Rating (MVA)	STE Rating (MVA)	2017 Flow (MVA)	2021 Flow (MVA)	2026 Flow (MVA)	First Contingency	Second Contingency
A	NYSEG	Stolle-Gardenville(#66) 230	474	478	478	509*	515*	520*	Packard-Gardenville (#182) 115	TWR Packard-Huntley 230
A	N.Grid	Packard-Huntley (#77) 345	556	644	746	646*	646*	646*	Stolle-Gardenville (#66) 230	SB Packard 230
C/B	NYPA, RG&E, N. Grid	Clay-Pannell (#1) 345	1195	1195	1195	1238*	1245*	1264*	Stolle-Gardenville (#66) 230	SB Clay 345
C/B	NYPA, RG&E, N. Grid	Clay-Pannell (#2) 345	1195	1195	1195	1240*	1247*	1266*	Stolle-Gardenville (#66) 230	SB Clay 345
C	NYSEG	Oakdale 345/115 2TR	428	556	600	565	586	605	Packard-Huntley (#77) 230	SB Oakdale 345
C	N.Grid	Elbridge 345/115 1TR	470	557	717			569*	Pannell-Clay (#1) 345	SB Clay 345
C	N.Grid	Clay-Lockheed Martin (#14) 115 (Clay-Wetzel)	220	252	280			255*	Clay-Woodard (#17) 115	SB Lafayette 345
C	N.Grid	Clay-Woodard (#17) 115 (Clay-Euclid)	220	252	280			256*	Clay-Lockheed Martin (#14) 115	SB Lafayette 345
C	N.Grid	Clay-Teall (#10) 115 (Clay-Bartell Rd-Pine Grove)	116 220	120 252	145 280	126**			Clay-Teall (#11) 115	SB Dewitt 345
C	N.Grid	Clay-Dewitt (#3) 115 (Clay-Bartell Rd)	116 220	120 252	145 280	131**			Clay-Dewitt (#13) 345	Oswego-Lafayette (#17) 345
E	N.Grid	Porter-Yahnundasis (#3) 115 (Porter-Kelsey)	116	120	145	138**			Stolle-Gardenville(#66) 230	Porter Bus D 115
E	N.Grid	Porter-Oneida (#7) 115 (Porter-W. Utica)	116	120	145	125**			Porter-Yahnundasis (#3) 115	SB Oswego 345
K	Long Island	East Garden City-Valley Stream (262) 138	211	291	504	293	302	316	Barrett-Valley Stream (292) 138	Barrett-Valley Stream (291) 138

* violations removed in 2nd Pass with updates and Interim Operating Procedures (if needed)

** violations removed due to upgrades identified in 2014 RNA that are in-service 2018 and have Interim Operating Procedures

Transmission Security 2nd Pass Reliability Needs

Zone	Owner	Monitored Element	Year of Need
C	NYSEG	Oakdale 345/115 2TR	2017
K	Long Island	East Garden City-Valley Steam (#262) 138	2017

Western NY Public Policy Scenario

- **Goal of Western NY Public Policy is to relieve constraints in Western NY, including access to full output of Niagara and additional imports from Ontario.**
 - *Multiple transmission projects have been proposed in the Public Policy Transmission Planning Process.*
- **To simulate a generic transmission solution to the public policy, the constraints in the Niagara area were relaxed.**

Western NY Public Policy Scenario Transmission Security Results

Zone	Owner	Monitored Element	Normal Rating (MVA)	LTE Rating (MVA)	STE Rating (MVA)	2026 Flow (MVA)	First Contingency	Second Contingency
C	N.Grid	Elbridge 345/115 1TR	470	557	717	569	Pannell-Clay (#1) 345	SB Clay 345
C	N.Grid	Clay-Lockheed Martin (#14) 115 (Clay-Wetzel)	220	252	280	255	Clay-Woodard (#17) 115	SB Lafayette 345
C	N.Grid	Clay-Woodard (#17) 115 (Clay-Euclid)	220	252	280	255	Clay-Lockheed Martin (#14) 115	SB Lafayette 345
K	Long Island	East Garden City-Valley Stream (262) 138	211	291	504	316	Barrett-Valley Stream (292) 138	Barrett-Valley Stream (291) 138

90/10 Forecasted Load Scenario

- **Existing overloads in the Western and Central area are exacerbated by approximately 10%**
- **Several new overloads on the 230kV system in the Western area**
- **New overloads on 345/115kV and 230/115kV transformers in the Central area**
- **2 additional overloads in Long Island**

90/10 Scenario Transmission Security Results

Zone	Owner	Monitored Element	Normal Rating (MVA)	LTE Rating (MVA)	STE Rating (MVA)	2017 Flow (MVA)	2021 Flow (MVA)	2026 Flow (MVA)	First Contingency	Second Contingency
A/ONT	N.Grid	Packard-Beck (BP76) 230	489	587	587	608	590	590	Niagara-Packard (#62) 230	TWR Niagara 230
A	NYSEG	Stolle-Gardenville (#66) 230	474	478	478	485	487	491	TWR Huntley 230	N/A
						569	565	569	Packard-Huntley (#77) 230	SB Packard 230
A	N. Grid	Packard-Huntley (#77) 230	556	644	746			649	SB Packard 230	N/A
						740	719	731	Stolle-Gardenville (#66) 230	SB Packard 230
						605	583	594	Packard-Huntley (#78) 230	Base Case
A	N. Grid	Packard-Huntley (#78) 230	556	644	746	738	714	726	Packard-Huntley (#77) 230	Bus Fault Stolle 230
						606	583	597	Packard-Huntley (#77) 230	Base Case
A	N.Grid	Niagara-Packard (#61) 230	627	717	847	877	859	877	Stolle-Gardenville (#66) 230	TWR Packard 230
								628	Niagara-Packard (#62) 230	Base Case
A	N.Grid	Niagara-Packard (#62) 230	627	717	847			855	TWR Niagara 230	N/A
						917	915	946	Beck-Packard (BP76) 230	TWR Niagara 230
C/B	NYP&E, N. Grid	Clay-Pannell (#1) 345	1195	1195	1195	1450	1365	1431	Robinson-Stolle (#65) 230	SB Clay 345
C/B	NYP&E, N. Grid	Clay-Pannell (#2) 345	1195	1195	1195	1452	1367	1433	Robinson-Stolle (#65) 230	SB Clay 345

90/10 Scenario Transmission Security Results

Zone	Owner	Monitored Element	Normal Rating (MVA)	LTE Rating (MVA)	STE Rating (MVA)	2017 Flow (MVA)	2021 Flow (MVA)	2026 Flow (MVA)	First Contingency	Second Contingency
C	NYSGE	Oakdale 345/115 2TR	428	556	600	661	672	708	Fraser 345/115 TR2	SB Oakdale 345
						441	432	455	Oakdale 345/115 3TR	Base Case
C	NYSGE	Oakdale 345/115 3TR	428	556	600	577	572	592	SB Oakdale 345	N/A
						602	608	630	Watercure-Oakdale (#31) 345	Oakdale 345/115 2TR
								445	Oakdale 345/115 2TR	Base Case
C	NYSGE	Hillside 230/115 BK3	231	294	336	304	316	328	Robinson-Stolle (#66) 230	Bus Fault Hillside 230
						243	255	256	Hillside 230/115 BK4	Base Case
C	N. Grid	Elbridge 345/115 1TR	470	557	717			559	SB Lafayette 345	N/A
						570	658	675	Clay-Pannell (PC-1)345	SB Clay 345
							497	486	Packard-Huntley (#77) 230	Base Case
C	N. Grid	Clay-Woodard (#17) 115 (Clay-Euclid)	220	252	280	286	275	293	Clay-Lockheed Martin (#14)	SB Lafayette 345
						281	322	339	Oakdale-Fraser (#32) 345	SB Lafayette 345
C	N. Grid	Clay-Lockheed Martin (#14) 115 (Clay-Wetzel)	220	252	280		283	298	Oakdale-Fraser (#32) 345	SB Lafayette 345
						266	261	272	Clay-Woodard (#17) 115	SB Oswego 345
C	N. Grid	Clay-Teall (#10) 115 (Clay-Bartell Rd-Pine Grove)	116	120	145	137			Clay-Teall (#11) 115	SB Dewitt 345
C	N. Grid	Clay-Dewitt (#3) 115 (Clay-Bartell Rd)	116	120	145	137			Clay-Dewitt (#13) 345	SB Oswego 345

90/10 Scenario Transmission Security Results

Zone	Owner	Monitored Element	Normal Rating (MVA)	LTE Rating (MVA)	STE Rating (MVA)	2017 Flow (MVA)	2021 Flow (MVA)	2026 Flow (MVA)	First Contingency	Second Contingency
C	N. Grid	Lighthouse Hill-Clay (#7) 115	108	108	108			113	Clay 345/115 2TR	SB Clay 345
E	NYPA	Fraser 345/115 BK2	305	386	420	438	437	441	Lafayette-Clarks Corners (4-46) 345	SB Fraser 345
						420	456	471	Oakdale-Fraser (#32) 345	SB Lafayette 345
E	N. Grid	Porter-Yahnundasis (#3) 115 (Port-Kelsey)	116	120	145	142			Bus Fault Porter 115	N/A
						159	126	126	Oswego-Elbridge-Lafayette (#17) 345	Bus Fault Porter 115
						151	131	156	Dewitt 345/115 TR2	Bus Fault Porter 115
						130			Porter-Oneida (#7) 115	Base Case
E	N. Grid	Porter-Oneida (#7) 115 (Porter-W. Utica)	116	120	145	143	130	132	Porter-Yahnundasis (#3) 115	SB Oswego 345
						132	133	132	Oakdale-Fraser (#32) 345	SB Lafayette 345
K	LIPA	Shore Rd-Lake Success (#367) 138	249	430	612		440	436	Barrett-Valley Stream (#291) 138	Shore Rd-Lake Success (#368) 138
K	LIPA	Shore Rd-Lake Success (#368) 138	249	430	612		441	437	Barrett-Valley Stream (#291) 138	Shore Rd-Lake Success (#367) 138
K	LIPA	East Garden City-Valley Stream (#262) 138	211	291	504	337	336	352	Barrett-Valley Stream (#292) 138	Barrett-Valley Stream (#291) 138

The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefit to consumers by:

- *Maintaining and enhancing regional reliability*
- *Operating open, fair and competitive wholesale electricity markets*
- *Planning the power system for the future*
- *Providing factual information to policy makers, stakeholders and investors in the power system*

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