

# 2019 Transmission Security Limit (TSL) Report For Use in Identifying the TSLs for LCRs

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**Installed Capacity (ICAP):**

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# Topics

- **Base Case and Modeling Assumptions**
- **Zone Localities**
- **Transmission Security Limits**

# Modeling Assumptions

- **Summer 2018 Operating Study base case**
  - Restore all-equipment-in-service base case
  - Use MVA line ratings
  - Adjust PAR schedules and generation dispatch
  - Apply anticipated facility changes

# Changes in Transmission

- **Modeled in-service**

- Dunkirk – South Ripley (68) 230 kV
- Warren – Falconer (171) 115 kV

- **New Transmission**

- South Ripley – Erie East (69) 230 kV Reactor
- Cricket Valley Energy Center LLC 345 kV substation

# Locality Interface Definition Assumption

- Interfaces are those to the 3 Localities: the G-J Locality, Zone J and Zone K
- Locality Interconnections to controllable transmission that has Unforced Deliverability Rights (UDRs) are treated as supply-side resources and are not considered part of the import capability when calculating the TSL

# Zone K Locality Details

Zone K Locality			
Dunwoodie (Zone I) – Long Island (Zone K)			
Name	Line ID	Voltage (kV)	
*Dunwoodie-Shore Road	Y50	345	
*Sprain Brook-East Garden City	Y49	345	
NYC (Zone J) – Long Island (Zone K)			
Jamaica-Valley Stream*	901L_M	138	
Jamaica-Lake Success*	903	138	

# G-J Locality Details

G-J Locality		
Mohawk (Zone E) – Hudson Valley (Zone G)		
Name	Line ID	Voltage (kV)
Coopers Corners-Middletown*	CCRT34	345
Coopers Corners-Dolson Ave*	CCDA42	345
West Woodbourne 115/69	T152	115/69
Capital (Zone F) – Hudson Valley (Zone G)		
Athens-Pleasant Valley*	91	345
Leeds-Pleasant Valley*	92	345
*Leeds-Hurley Ave.	301	345
Hudson-Pleasant Valley*	12	115
Blue Stores E-Pleasant Valley*	13-987	115
Blue Stores W-Pleasant Valley*	8	115
*Feura Bush-North Catskill	2	115

# Zone J Locality Details

Zone J Locality		
Dunwoodie (Zone I) – NYC (Zone J)		
Name	Line ID	Voltage (kV)
*Dunwoodie-Mott Haven	71	345
*Dunwoodie-Mott Haven	72	345
Sprain Brook-Tremont*	X28	345
*Sprain Brook-West 49 <sup>th</sup> Street	M51	345
*Sprain Brook-West 49 <sup>th</sup> Street	M52	345
*Sprain Brook-Academy	M29	345
*Dunwoodie-Sherman Creek	99031	138
*Dunwoodie-Sherman Creek	99032	138
*Dunwoodie-East 179 <sup>th</sup> Street	99153	138
Long Island (Zone K) – NYC (Zone J)		
*Lake Success-Jamaica	903	138
*Valley Stream-Jamaica	901L_M	138

# Transmission Security Limits

- The Siemens PTI PSS<sup>TM</sup>E and PowerGEM's Transmission Adequacy and Reliability Assessment (TARA) software packages were used to calculate the thermal limits based on Normal Transfer Criteria defined in the "NYSRC Reliability Rules for Planning and Operating the New York State Power System"

# G-J and Zone K Locality Interfaces Limits

- **Generation and PARs schedules were adjusted for the N-1 outage cases**
  - Generation re-dispatch and PAR schedules made to support maximizing transmission security limits
- **The transmission security limit analysis then evaluates the N-1 outage case**
  - Evaluates all applicable NPCC criteria contingencies
  - Long Term Emergency (LTE) ratings (i.e. N-1-1)

# Zone J Locality Interfaces Limit

- **Generation and PARs schedules were adjusted for the N-2 outage case**
  - Generation re-dispatch and PAR schedules made to support maximizing transmission security limits
- **The transmission security limit analysis then evaluates the N-2 outage case**
  - Normal ratings (i.e. N-2-0)

# Transmission Security Limits

**TABLE 1 – Zone K Locality Limit**

				Limit
N-1 Outage applied (Sprain Brook – East Garden City (Y49) 345 kV)				350 MW (1)
LIMITING ELEMENT		RATING		LIMITING CONTINGENCY
(1)	Dunwoodie – Shore Road (Y50) 345 kV	@NORM	687 MVA <sub>1</sub>	Pre-Contingency Loading

**Note:**

1: LIPA rating for Y50 circuit is based on 70 % loss factor and rapid oil circulation.

# Transmission Security Limits

**TABLE 2 – G-J Locality Limit**

					Limit
N-1 Outage applied (Athens – Pleasant Valley (91) 345 kV)					3200 MW (1)
LIMITING ELEMENT		RATING			LIMITING CONTINGENCY
(1)	Leeds – Pleasant Valley (92) 345 kV	@LTE	1538 MVA	L/O	Rock Tavern – Dolson Avenue (DART44) 345 kV Rock Tavern – Middletown TAP (CCRT34) 345 kV Coopers Corners – Middletown TAP (CCRT34) 345 kV Middletown 345/138 kV Transformer

# Transmission Security Limits

**TABLE 3 – Zone J Locality Limit**

				Limit
LIMITING ELEMENT		RATING		LIMITING CONTINGENCY
N-2 Outages applied (Sprain Brook – W.49 <sup>th</sup> St. (M51) 345 kV & Sprain Brook – W.49 <sup>th</sup> St. (M52) 345 kV)				3200 MW (1)
(1)	Dunwoodie – Mott Haven (71) 345 kV	@NORM	785 MVA	Pre-Contingency Loading

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- 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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