Updates to the Consolidated Edison Long-Range Transmission Plan For 2012

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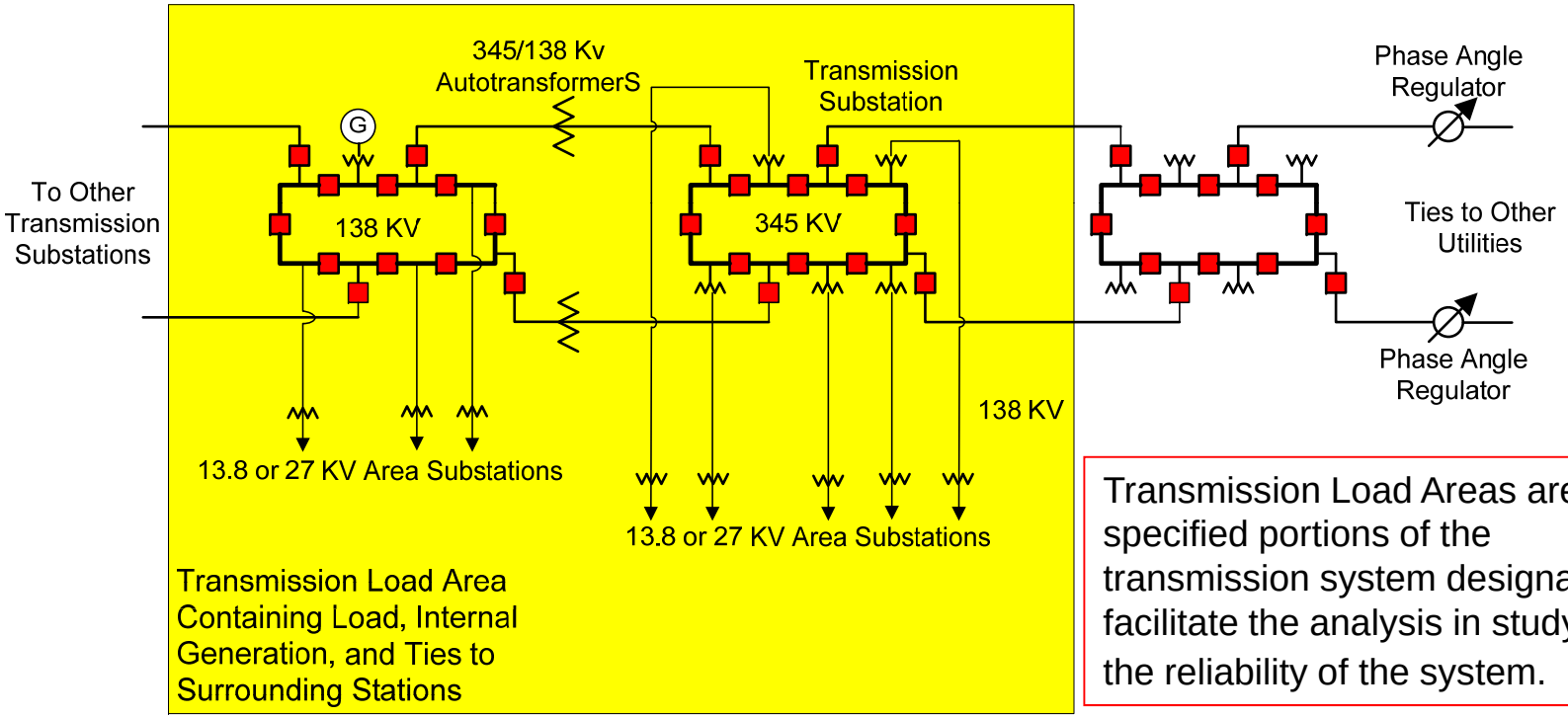
Long-Range Transmission Plan

- Driver of Plan is maintaining local reliability
- 10-year planning horizon
- Order 890 (and Order 1000) compliance
  - Criteria, assumptions and methodology have been posted
    - http://www.coned.com/tp/transmission_planning_process.asp
  - Plan posted on the Con Edison website prior to presentations at NYISO
    - http://www.coned.com/tp/Long-Term-Transmission-Plan-2012-2021.pdf

Transmission Load Area



Transmission Load Areas are specified portions of the transmission system designated to facilitate the analysis in studying the reliability of the system.

Transmission Load Areas

	Transmission Load Areas	Contingency Level
1	New York City - 345 kV	2
2	West 49th Street - 345 kV	2
3	New York City - 138 kV	2
4	Astoria - 138 kV	2
5	East 13th Street - 138 kV	2
6	Astoria East / Corona - 138 kV	2
7	Astoria West / Queensbridge - 138 kV	2
8	Vernon - 138 kV	2
9	East River - 138 kV	2
10	Greenwood / Staten Island- 138 kV	1
11	Corona / Jamaica - 138 kV	1
12	Bronx- 138 kV	1
13	Eastview - 138 kV	1
14	Staten Island - 138 kV	1
15	Dunwoodie North / Sherman Creek - 138 kV	1
16	Dunwoodie South - 138 kV	1
17	Millwood / Buchanan - 138 kV	1

Physical Changes in 2012

- Gowanus established as a Ring Bus with connection to BEC Generation (500 MW)
- In response to the mothballing of the US PowerGen units Astoria 2 and Astoria 4, Con Edison established new transmission line 34091 with associated Phase Angle Regulator and Transformer, between the Astoria Annex 345 kV Substation to the Astoria East 138 kV Substation.
- Hudson Transmission Project (HTP) under construction, slated for completion by June, 2013
- Goethals 345 kV Ring Bus under construction, slated for completion by June, 2014.
- Studies for the 2012 Long Range Plan were performed with the assumption that the US Power Gen Gowanus barges 1 and 4 were available at rated capability. This is in agreement with current practice at the NYISO.

2012 Assessment Assumptions

Study Year	Assumptions
2012	• Con Edison Load (Coincident Peak) = 13,225 MW • 138 kV Transmission Line 34091, with associated Phase Angle Regulator and Transformer, connecting the Astoria Annex 345 Kv Substation with the Astoria East 138 kV Substation
2016	• Con Edison Load (Coincident Peak) = 13,900 MW • 138 kV Transmission Line 34091, with associated Phase Angle Regulator and Transformer, connecting the Astoria Annex 345 Kv Substation with the Astoria East 138 kV Substation
2021	• Con Edison Load (Coincident Peak) = 14,850MW • 138 kV Transmission Line 34091, with associated Phase Angle Regulator and Transformer, connecting the Astoria Annex 345 Kv Substation with the Astoria East 138 kV Substation

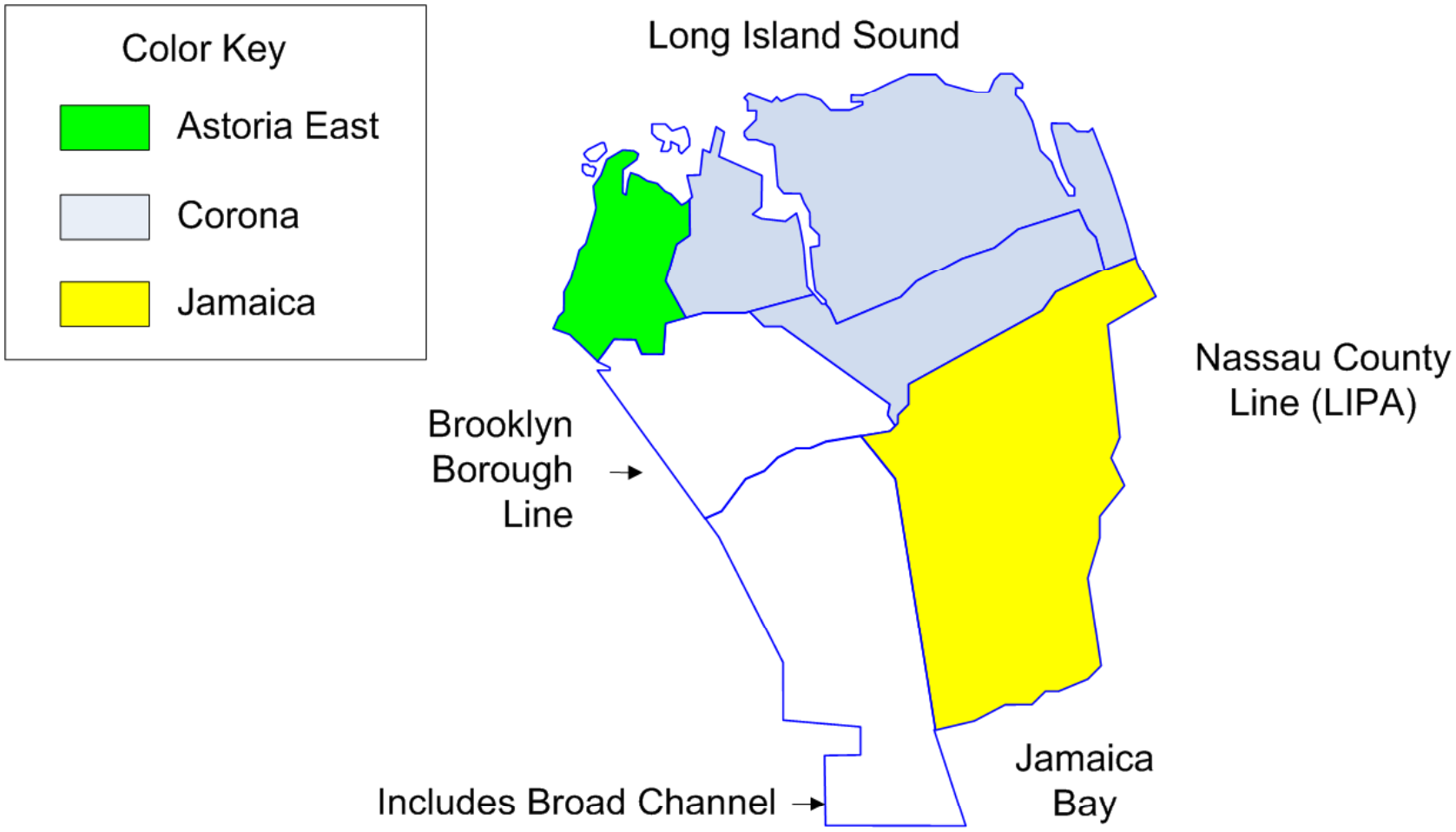
2011 TLA Assessment Results

- Two TLAs show need for system reinforcements:
  - 2017: Corona / Jamaica 138 kV TLA
  - 2018: Greenwood / Staten Island 138 kV TLA
    - The subsequent 2012 study indicated that the need for this reinforcement fell beyond the 10 year range of the study.

2012 TLA Assessment Results

- Two TLAs show need for system reinforcements:
  - 2018: Corona / Jamaica 138 kV TLA
    - Deferred for one year due to a reduction in the forecasted load.
  - 2018: Astoria East / Corona 138 kV TLA
    - This is due to the impact from the mothballing of the US PowerGen units Astoria 2 and 4. It represents an additional requirement above and beyond the establishment of transmission feeder 34091.

Area Served by Astoria East / Corona and Corona / Jamaica 138 kV TLAs



2012 Assessment of Corona / Jamaica 138 kV TLA

Geographic Coverage	Queens			
Design Criteria	First Contingency			
Planned Changes In Load Area	None			
Assessment	2012	First Contingency	Failed breakers 1, 2, 9, or 18 resulting in the loss of feeder 901, 702 and transformer bank 4 at Jamaica 138 kV	None required.
	2016	First Contingency	Failed breakers 1, 2, 9, or 18 resulting in the loss of feeder 901, 702 and transformer bank 4 at Jamaica 138 kV	None required.
	2018	First Contingency	Failed breakers 1, 2, 9, or 18 resulting in the loss of feeder 901, 702 and transformer bank 4 at Jamaica 138 kV	Deficit Forecast for 2018. See Planning Solution
	2018 - 2020	First Contingency	Failed breakers 1, 2, 9, or 18 resulting in the loss of feeder 901, 702 and transformer bank 4 at Jamaica 138 kV	None required.
Operational Remediation	2012	None required		
	2016	None required		
	2021	None required		
Planning Solution	2012	None required		
	2016	None required		
	2018	Establish Transmission Feeder with associated transformer and phase angle regulator, connecting Rainey 345 kV Substation with Corona 138 kV Substation		
	2021	No Further Actions Required		
Short Circuit Considerations	None			

2012 Assessment of Astoria E / Corona 138 kV TLA

Geographic Coverage	Queens			
Design Criteria	Second Contingency			
Planned Changes In Load Area	None			
Assessment	2012	Second Contingency	Loss of Astoria Energy I, followed by loss of feeder 34091	~ 12 MVA Deficit
	2016	Second Contingency	Loss of Astoria Energy I, followed by loss of feeder 34091	~ 70 MVA Deficit
	2018	Second Contingency	Loss of Astoria Energy I, followed by loss of feeder 34091	See Planning Solution
	2018 - 2020	Second Contingency	Loss of Astoria Energy I, followed by loss of feeder 34091	None required.
Operational Remediation	2012	Utilize 300 hr ratings for feeders 34051/52 and 701/702 until new transmission upgrade in 2018		
	2016	Utilize 300 hr ratings for feeders 34051/52 and 701/702 until new transmission upgrade in 2018		
	2021	None required		
Planning Solution	2012	None required		
	2016	None required		
	2018	Establish Transmission Feeder with associated transformer and phase angle regulator, connecting Rainey 345 kV Substation with Corona 138 kV Substation		
	2021	No Further Actions Required		
Short Circuit Considerations	None			

Transmission Substations

- With a lower overall rate of load growth, no new transmission switching stations were identified for this planning horizon.

2018 - Transmission Feeder Upgrade

- Based on the 2012 Long Range Plan, the transmission feeder between Rainey and Corona is anticipated to be established in the year 2018. This will address the deficiencies that have been identified in both the Astoria East / Corona and the Corona / Jamaica Transmission load areas according to their design criteria.