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## **APPENDIX A**

### **SCOPE**

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## SCOPE

### 2009 NY Area Transmission Review (Year 2014)

#### OBJECTIVE

To conduct an intermediate level Area Transmission Review of the reliability of the planned New York State Bulk Power Transmission System for the year 2014, in accordance with the NPCC *Guidelines for NPCC Area Transmission Reviews*. This assessment will examine the collective impact of qualified<sup>1</sup> proposed generation and transmission projects in the New York Control Area and changes in forecasted system conditions (see Table 1).

#### REQUIREMENTS

1. List the facilities and system conditions assumed for this review. Note changes from the most recent intermediate and comprehensive reviews. Provide maps and one-line diagrams showing the proposed facilities.
2. Perform powerflow and stability analyses as appropriate to demonstrate conformance to the NPCC Transmission Design Criteria and related sections of the NYSRC Planning Standards. The results of relevant system reliability impact studies may be used and referenced as appropriate.
3. Perform powerflow and stability analyses as appropriate to evaluate the performance of the interconnected power systems for Extreme Contingencies. The results of relevant system reliability impact studies may be used and referenced as appropriate.
4. Perform power-flow and stability analyses as appropriate to evaluate the consequences of the failure or misoperation of Special Protection Systems (SPSs), and to review their classification of having either inter-Area consequences or only local consequences.
5. Perform stability analyses as appropriate to evaluate the consequences of the failure or misoperation of Dynamic Control Systems (DCSs), and to review their classification of having either inter-Area consequences or only local consequences.
6. Provide a report on the analysis results and conclusions that pertain to this review.

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1. Projects that have met at least two milestones by March 1: an approved SRIS and an applicable regulatory milestone; or project(s) reported in the NYISO 2009 Load & Capacity Data; can be included

## **SCOPE OF WORK**

1. Prepare exhibits to meet Requirement #1
  - a. Comparison of System Conditions (Forecasted Load and Area Interchange Schedules)
  - b. Generation and Transmission Facilities included in Review (Note changes from the previous intermediate review and the most recent comprehensive review)
  - c. Maps and One-Line Diagrams Showing Proposed Facilities
2. Prepare Powerflow Base Cases and Dynamics Cases
  - a. Summer 2014 Peak Load Base Case ( base case representing expected system conditions with the proposed projects in-service)
  - b. Summer 2014 Peak Load Stressed Transfer Cases (For Design Criteria Power-Flow Analysis)
  - c. Summer 2014 Peak Load Dynamics Case with Stressed Cross-State Transfers (For Design Criteria Stability Analysis)
3. Conduct power-flow analyses on the stressed transfer cases to evaluate potentially limiting design contingencies in the areas of study. If any violations of thermal or voltage criteria are identified, conduct sensitivity analysis to determine the transfer limits.
4. Conduct stability analysis to evaluate design criteria contingencies on the stressed transfer case. Stressed transfers generally mean loading the interfaces to at least 111% of the lower of the emergency thermal or voltage transfer limit. If the system is unstable for any contingencies tested, conduct additional analysis to determine the stability limits.
5. Conduct stability and power-flow analyses to evaluate system performance for the most potentially severe extreme contingencies in the areas of study.
6. Conduct stability analysis to review the performance and classification of selected Special Protection Systems (SPSs) as deemed appropriate.
7. Conduct stability analysis to review the classification of selected Dynamic Control Systems (DCSs) as deemed appropriate.
8. Conduct short circuit analysis if required.
9. Prepare a report of the results of this ATR.
10. Present the report for review and comment by the appropriate NYISO/NYSRC committees.
11. Present the report for review and comment by the NPCC Task Force on System Studies.

**TABLE 1**  
**System Changes Included in the 2009 New York ATR**

	Most recent Comprehensive ATR: 2005 Forecast for Summer 2010	2008 ATR: Forecast for Summer 2013	2009 ATR: Forecast for Summer 2014
<b>Bulk Transmission:</b>	<b>Status</b>	<b>Status</b>	<b>Status</b>
Controlable AC Transmission Linden VFT Line (Q#125)	N	Y	Y / In-Service
Spagnoli Rd 138 kV Substation	Y	N	N
Calpine Wawayanda 345 kV Substation	Y	Canceled	Canceled
Bowline 3 345 kV Cable	Y	Canceled	Canceled
Besicorp Empire State Newsprint 345 kV Substation	Y	Y	Y
PSEG Cross Hudson 345 kV Cable	Y	Canceled	Canceled
Atlantic Energy Neptune PJM-LI DC	Y	Y / In-Service	Y / In-Service
Liberty 230 kV Substation and 345 kV Goethals Substation Upgrade	Y	Canceled	Canceled
ConEd: Sherman Creek 345 kV Substation (M29)	Y	Y	Y
O&R 345/138 kV Lovett transformer	N	N	Y
Millwood Shunt Capacitor Banks (240 MVAr)	N	Y	Y / In-Service

Generation Resources				
	Size	Most recent Comprehensive ATR: 2005 Forecast for Summer 2010	2008 ATR: Forecast for Summer 2013	2009 ATR: Forecast for Summer 2014
Installations		Included in Total Capacity	Included in Total Capacity	Included in Total Capacity
NYPA Poletti Project (Asotoria CC1 & CC2)	500	Y	Y / In-Service	Y / In-Service
ConEd East River Re-powering	288	Y	Y / In-Service	Y / In-Service
Entergy IP 2 Uprate	36	Y	Y / In-Service	Y / In-Service
Entergy IP 3 Uprate	38	Y	Y / In-Service	Y / In-Service
NYC Energy LLC (Kent Ave) GTs	79.9	Y	N	N
KeySpan Spagnoli Road CC Unit	250	Y	N	N
Calpine Wawayanda	500	Y	N / Withdrew	N / Withdrew

Reliant Re-powering Phases 1 & 2	1092	Y	N / Withdrew	N / Withdrew
Mirant Bowline Point 3	750	Y	N / Withdrew	N / Withdrew
SCS Astoria East Energy (Phase 1) CC Units	1000	Y	Y / In-Service	Y / In-Service
SCS Astoria East Energy (Phase 2) CC Units		Y	N, 500	Y, 500
Fortistar LMA Lockport II	79.9	Y	N	N / Withdrew
Besicorp Empire State Newsprint CC	660	N	Y	Y
Fortistar VP	79.9	Y	N	N / Withdrew
Fortistar VAN	79.9	Y	N	N / Withdrew
PSEG Cross Hudson Project	550		N	N / Withdrew
Calpine JFK Expansion	45	Y	N	N / Withdrew
AE Neptune PJM-LI DC Line	660	Y	Y / In-Service	Y / In-Service
Liberty Radial Interconnection to NYC	400	Y	N, Withdrew	N, Withdrew
NYP&A Gilboa Uprate	200	N	Y	Y
Windfarm Prattsburgh Wind Park	75	Y	N	N
Noble Env. Power Chautauqua Winds	50	Y	N	N
Ecogen LLC Prattsburg Winds	79.5	Y	N	N
Constellation Ginna Uprate	95	Y	Y / In-Service	Y / In-Service
Caithness Long Island CC	310	N	Y	Y / In-Service
Wethersfield Windfield (Q177)	126	N	Y	Y / In-Service
Clinton II Windfield (Q211)	21	N	Y	Y / In-Service
Bliss II Windfield (Q212)	28.5	N	Y	Y / In-Service
Canandaigua II Wind (Q199)	42.5	N	Y	Y / In-Service
Ellenberg II Windfield (Q213)	21	N	Y	Y
Chateauguay Windpark (Q214)	106.5	N	Y	Y / In-Service
High Sheldon Windfarm (Q144)	129	N	Y	Y / In-Service

Retirements				
		Most recent Comprehensive ATR: 2005 Forecast for Summer 2010	2008 ITR: Forecast for Summer 2013	2009 ITR: Forecast for Summer 2014
Facility	Capacity (MW)	Included in Total Capacity	Included in Total Capacity	Included in Total Capacity
Onondaga Cogen	78	Y	N / Retired	N / Retired
Greenidge 3	54	Y	Y	N
Westover 7	43	Y	Y	N
Astoria 2, 3	536	N	Y	Y