



New York State Transmission Assessment and Reliability Study (STARS)

- *NYSRC Executive Committee*
- *February 12, 2010*



Agenda

- Status
- Phase I Results Recap
- Phase II Steps



Status

- **Phase I** – Identify the need for additional transfer capability to meet state-wide LOLE (with the existing transmission system).
Completed - Report posted on NYISO website under the "Special Studies" area
http://www.nyiso.com/public/markets_operations/services/planning/documents/index.jsp
- **Phase II** – Identify the most suitable and cost effective transmission alternatives to meet the previously determined additional transfer capability **for some but not all scenarios** while considering aged infrastructure and integration of renewable resources.
-- **Started.**
- **Phase III** – Perform additional sensitivity analyses and assessments

Scenarios

	Low Imports	High Imports
REGIONAL	SCENARIO # 1 Downstate Capacity Expansion 85% DOWN STATE 10% ISONE 5% PJM	SCENARIO # 2 Upstate Capacity Expansion 50% UP-STATE 25% H-Q 25% PJM
RPS	SCENARIO # 5 Same as Scenario #1 but, 25% wind energy for RPS	SCENARIO # 6 Same as Scenario #2 but, 25% wind energy for RPS
STATE-WIDE	SCENARIO # 3 90% ALL ZONES, 3.3%, each, ISONE, PJM, H-Q	SCENARIO # 4 25% ALL ZONES, 50% H-Q, 25% PJM



“As is” Transmission

Calculated LOLE values for Six Scenarios

Horizon Year (40,816MW)

Target LOLE = 0.1day/yr

	NYCA LOLE (days/year)
Scenario 1	0.06
Scenario 2	1.68
Scenario 3	0.20
Scenario 4	0.44
Scenario 5	0.07
Scenario 6	1.82

MAJOR TRANSMISSION CAPACITY NEED for LOLE = 0.1day/yr

Additional Transfer Capability (MW) Need				
	Scenario #1	Scenario #2	Scenario #3	Scenario #4
CE Group	0	1,460	150	1,185
UPNY-SENY	0	1,735	249	702
Volney East	0	1,314	492	648
Central East	0	1,047	279	1,106
I to J	0	1,135	386	424
Y49Y50	0	752	159	972
F to G	0	1,171	187	399
Total East	0	1,274	0	456
West Central	0	265	316	192
Marcy South	0	435	15	257
Moses South	0	0	0	228
HQ - D	0	0	0	550



Phase II

- Identify potential transmission solutions to meet LOLE objective (Reliability) for Scenarios 2, 3 & 4.
- Identify impact of Condition Assessment (CA) of existing Transmission
- Identify solutions to reduce/eliminate bottling of wind identified in “NYISO Wind Study” bottling results



Three Cases

- **Base Case**: This case will assume no new transmission facilities (other than reactive support to eliminate “voltage derating”). Also, assumes that aging infrastructure is replaced “in kind”.
- **Bump-Up Case**: This case will assume that aging infrastructure will be upgraded with facilities that provide an incremental increase in transfer capability over the Base Case. This case will assume new facilities along the same ROWs as existing facilities.
- **Overlay Case**: This case will have new transmission facilities that will provide a significant increase in transfer capability over the base case to meet the MW requirements and will not be constrained by cost or the limits of the existing ROWs/existing voltages etc.



Steps for the Four Generation Scenarios

- Define MW Need for Interfaces and Identify Upgrade Options (Reliability, Condition Assessment & Wind)
- Select and Finalize Upgrade Options
- Integrate Individual Interface Upgrades in Overall System and Calculate New Transfer Limits
 - The power flow case will be updated by considering expected retirements as well as interconnection projects that have accepted cost allocation or are likely to enter Class Years 2009 and 2010.
- Perform Sensitivity Analyses



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