NYISO / PJM Focused Study
Reliability and Market Efficiency Analysis

Northeast Coordinated System Plan
IPSAC09
December 18, 2009

ISO new england

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Review Reliability and Market Efficiency Study Objectives

- Reliability
  - The objective of the study is to analyze the NYISO / PJM interface. The study specifically looked at the Southeastern New York / New Jersey interface for the year 2013.
  - The study consisted of reliability analysis that included voltage and thermal testing and market efficiency analysis that includes production cost simulations
  - These objectives and related sensitivities are complete
- Market Efficiency
  - Complete a focused energy market simulation of the combined NYISO/PJM system
  - Identify areas with the highest Locational Marginal Price (LMP) spreads

Review Reliability and Market Efficiency Study Objectives, *cont.*

- Market Efficiency, *cont.*
  - Identify facilities that are causing congestion
  - Test the market efficiency impact of the potential solutions identified in the reliability analysis
  - These objectives are complete
- Reliability and Market Efficiency assumptions and methods were included in detail at the May 7, June 30, and November 6 webcasts. Presentation materials can be found at http://www.pjm.com/committees-and-groups/stakeholder-meetings/stakeholder-groups/ipsac.aspx#1

NYISO / PJM Focused Reliability Study

- Reliability Analysis
  - Generator deliverability testing of PJM generation while monitoring adjacent area facilities
  - N-1-1 thermal analysis for all 230 kV and above facilities
  - Load deliverability thermal analysis simulating peak summer conditions under a capacity emergency in the combined Public Service-North/RECO / Southeastern NY system
  - Load deliverability of the PS North and NYC area
  - Sensitivity to Load deliverability in PS North and NYC area with the HTP line delayed

Review of Reliability Results

- For Generation Deliverability, tested the deliverability of PJM generation within PJM while monitoring all 100 kV and above facilities in NYISO and PJM
  - Contingencies tested were all voltage level NERC criteria A, B and C
  - No reliability issues were identified
- For N-1-1 Screening of combined systems
  - Pleasantville East or West to Dunwoodie 345 kV and Dunwoodie 345/138 kV Transformer outage, initial marginal violation on Sprain Brook – Dunwoodie South 345/138 kV transformer mitigated with improved modeling of the system

Review of Reliability Results

- For Load deliverability testing of combined PSN + RECO + SENY areas
  - The reliability transfer objective is 9,180 MW
  - The transfer limit into the area exceeds this level
- The reliability transfer objective for the more narrow PSN + RECO + NYC area
  - The reliability transfer objective is 8,340 MW
  - The transfer limit into the area exceeds this level

Additional Load Deliverability Sensitivity

- PSN + RECO + NYC case retested in response to question of impact of possible delay in the HTP line
- Remove HTP Merchant Transmission Facility
- Transfer objective and limits remained unchanged

NYISO/PJM Market Efficiency Results

- Total System Congestion modeled about $1.2 billion across all RTOs in 2013
- Largest LMP spreads in following Areas
  - Western PJM to Eastern PJM
  - Northern/Western NY to Southeastern/Long Island NY
  - NJ/NY PAR facilities
- Congestion facilities within each area are consistent with annual RTO market efficiency analysis
- No reliability-based solutions recommended
  - Associated Market Efficiency impact scope, therefore not required

Market Efficiency Results

Constraint	AREA	Frequency (Hours)	Market Congestion Rank
LEEDS- PLTVLLEY CTG	NYISO	3380	1
INTERFACE AP - SOUTH	PJM	2121	2
INTERFACE PJM-CENTRAL	PJM	5189	3
WALDWICK PARs	PJM-NYISO	8719	4
RAMAPO PARs	PJM-NYISO	7444	5
FARRAGUT PARs	PJM-NYISO	8736	6
ALTOONA - BRRCK N3	PJM	1171	7
CLOVERDALE - LEXINGTON	PJM	544	8
CLOVER 500/230 KV TX CTG	PJM	1017	9
GOTHLS S - GOWANUSS CTG	NYISO	532	10
INTERFACE Line: 966 PENELEC-NYCENT1	PJM-NYISO	5042	11
ELRAMA - MITCHEL CTG	PJM	1879	12
LINDEN-GOETHALS PAR	PJM-NYISO	8721	13
INTERFACE Line: 669 CE GROUP	NYISO	464	14
LINWOOD - CHICHESTER2	PJM	282	15

NYISO/PJM Market Efficiency Focused Study

- Initial focused Market Efficiency analysis results presented at November IPSAC
- Steps for next cycle of analysis
  - Improve modeling assumptions and techniques of NJ/NY PAR Area
  - Continued development of joint database
  - Incorporate stakeholder feedback

Questions or Comments