

Comprehensive Reliability Planning Process (CRPP) Draft RNA

By

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Draft For Discussion Purposes Only

**NEW YORK ISO COMPREHENSIVE PLANNING PROCESS FOR RELIABILITY NEEDS
TIMELINE**

ID	Task Name	Begin	End	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug			
1	NYISO COMPREHENSIVE RELIABILITY PLANNING PROCESS	January	June	[Summary bar]																							
2	Submission of Data Inputs	January	February	[Summary bar]																							
3	TOs Submit Transmission Plans	January	February	[Task]	[Task]																						
4	Neighboring Control Area Assessments	January	February	[Task]	[Task]																						
5	Transmission Owner Input	January	February	[Task]	[Task]																						
6	Stakeholder Input	January	February	[Task]	[Task]																						
7	Develop Base Case & Scenarios	March	March	[Summary bar]																							
8	Develop Base Case	March	March	[Task]	[Task]																						
9	Develop Scenarios	March	March	[Task]	[Task]																						
10	Reliability Needs Assessment	April	August	[Summary bar]																							
11	Load & Capacity Data Book Screening Process	April	August	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
12	Transmission Adequacy Assessment	April	August	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
13	Develop MW Transfer Capability for Resource Delivery	April	August	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
14	Resource Adequacy Assessment	April	August	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
15	Short Circuit Assessment	April	August	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
16	Baseline Reliability Needs Assessment	April	August	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
17	Evaluation of Alternate Reliability Scenarios	April	August	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
18	Perform Sensitivity Studies	April	August	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
19	RNA Draft Report Preparation	April	August	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
20	RNA Review & Approval Process	September	December	[Summary bar]																							
21	TPAS & ESPWG Review of Draft RNA	September	September	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
22	OC / MC RNA Vote	October	October	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
23	NYISO BOD Action on RNA & Independent Market Advisor Review	November	November	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
24	Issue / Post Final RNA	November	November	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
25	Conduct Public Information Sessions	November	December	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
26	Development of Solutions to Reliability Needs	December	January	[Summary bar]																							
27	Request Proposal for Regulated Backstop Solution	December	January	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
28	Conduct Two Step Process for Response Solicitation	December	January	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
29	Assess Submittals for Procedural Solutions to Reliability Needs	December	January	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
30	NYISO Evaluation of Proposed Solutions	February	March	[Summary bar]																							
31	Evaluation of Regulated Backstop Solution	February	March	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
32	Evaluation of Market Based Proposals	February	March	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
33	Evaluation of Alternative Regulated Responses (With PSC)	February	March	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
34	NYISO to Identify & Resolve Deficiencies in Proposed Solutions	February	March	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
35	NYISO Recommends Regulated Backstop Solution	February	March	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
36	NYISO Cost Allocation Analysis	February	March	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
37	Prepare Draft CRP	March	March	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
38	CRP Review & Approval Process	April	June	[Summary bar]																							
39	TPAS & ESPWG Review of Draft CRP	April	April	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
40	OC / MC CRP Vote	May	May	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
41	NYISO BOD Action on CRP / Independent Market Advisor Review	June	June	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			
42	Issue / Post Final CRP	June	June	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]	[Task]			

Project: NYISO CRPP Timeline Rev 3 Task [Task icon] Milestone [Milestone icon] Summary [Summary icon]

NYISO CRPP: Draft RNA Steps

- After completion of analysis, NYISO submits draft RNA to ESPWG and TPAS for review and input
- Purpose of draft RNA is to solicit input from the Stakeholders in developing the final draft RNA
 - TOs – Voltage Based Transfer Limit Issues, Transmission Topology
 - ESPGWG – Scenario Review, Inclusion in final draft RNA
 - TPAS – Reliability Criteria Review
- After Review, Forward to the Operating Committee

Primary Analysis Tools

- **GE Multi-Area Reliability Simulation (MARS) model to evaluate resource adequacy – the 1 in 10 criteria**
- **PSS/E used to conduct power flow analysis to determine transfer limits and evaluate the security of the system for thermal, voltage, and stability**
- **Transfer limits are used in the MARS model which uses transportation model concept to model the transmission system**
- **MARS is not flow based, need to “fit” transfer limits**

Findings: Transmission Adequacy Analysis

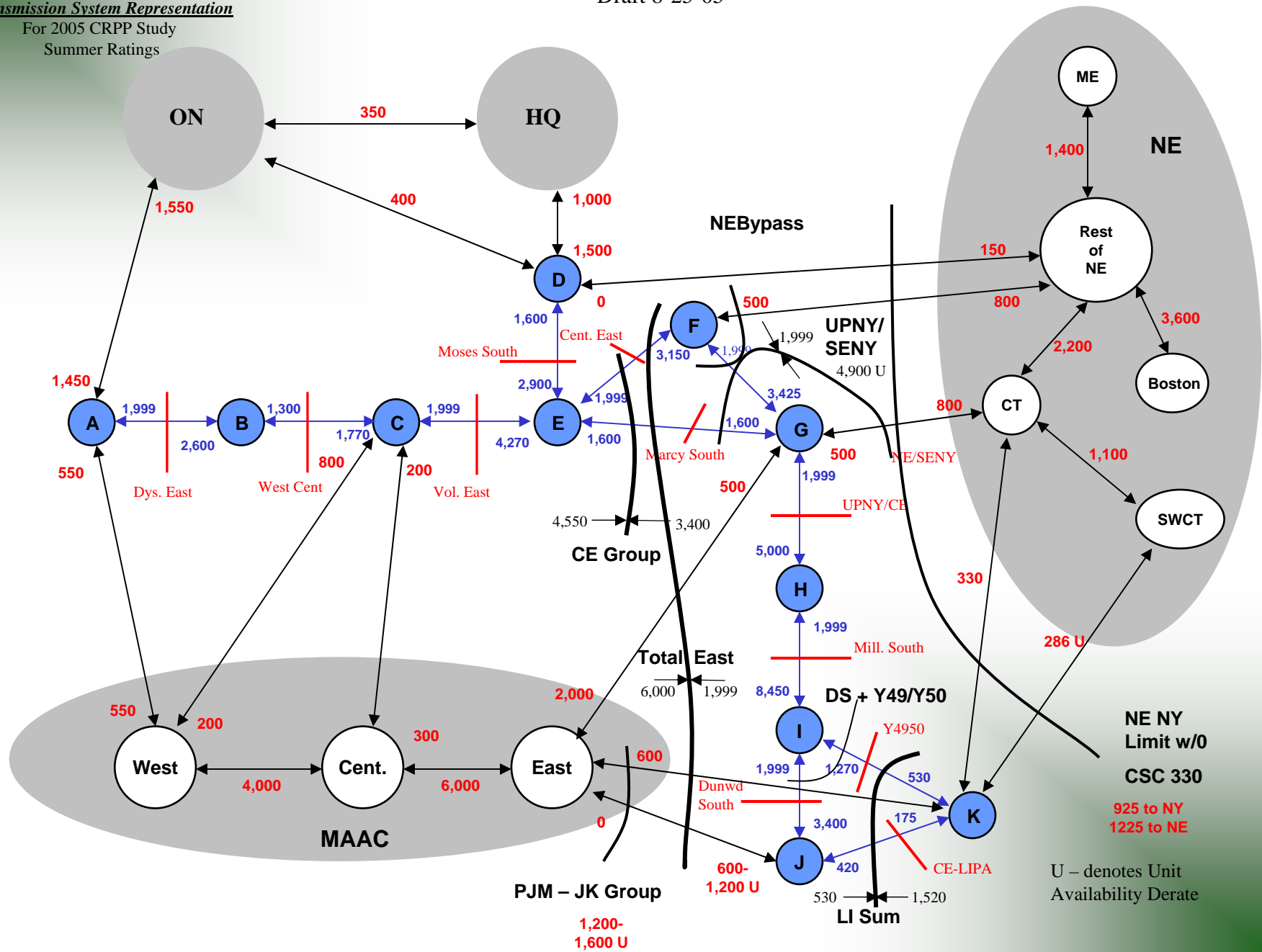
- **MVAR Load Growth Leads to Transmission Security Issues**
- **Load MVAR Scaled Down to Address Issues**
- **Contingency and Transfer Limit Analysis Performed**
- **Voltage Based Transfer Limits Degrade Through Time**
 - **MW and MVAR Load Growth**
 - **Unit Retirements**
 - **Transmission Network Changes**
- **For Resource Adequacy (MARS analysis)**
 - **Transfer Capability Assumed Constant over Ten Year Period**
 - **Some Level of Reactive Compensation Required to Achieve**

New York Control Area

Transmission System Representation

For 2005 CRPP Study
Summer Ratings

Draft 8-25-05



NYISO CRPP: Background & Base Case

- **From 1994 through 2004 load growth for the NYCA averaged approx. 1.2%.**
- **However, load growth in SENY (G-K) has averaged approx. 2.8% while UPNY (A-F) has experienced neg. load growth.**
- **Load growth in SENY through 2004 totals close to 5,000 MW while the net capacity additions for SENY total approx. 1250 MWs.**
- **The CRP base case has statewide load growth which averages about 1.2% with modest growth in UPNY and slightly less than 2% in SENY**
- **The CRP base case installed resources increase through 2007 but decline thereafter**
- **Resources are approximately at 2004 levels by 2008.**
- **Neptune LI-PJM Tie included in base case**

Findings: Base Case

- **First year of capacity need is 2010 with approximate need of 500 MW in J**
- **Neptune project provides significant benefits to both NYC and LI**
- **Assumes an I-J transfer limit of 3400 vs. 3700 because of voltage issue**
- **Total capacity need by 2015 of 2000 MW with at 250 MW in K by 2012**
- **Reactive resources will be needed in Hudson Valley**
 - **Both static and dynamic reactive resources will be needed**
 - **Determine resource plan**
 - **Determine reactive req. needed to support resource plan**

Findings: Base Case Retirement Impacts

➤ Polletti

- Provides critical voltage support would be needed to maintain transfer limit
- Not needed for resource adequacy under base case assumptions at 3400 MW transfer limit

➤ Lovett

- Has local as well as bulk power impacts
- Adverse impact on Hudson Valley voltage profile
- Impact is more than 1 for 1

➤ Huntley

- No observed impacts on the bulk power system

Findings: Base Case Scenarios and Sensitivities

➤ M29

- Improves voltage profile in lower HV
- Did not change year of need - reduced requirement slightly

➤ IP2

- LOLE to 3.5 days per year

➤ NYISO developed alternative network model for the MARS model that in our assessment more accurately reflects external loop flow constraints and deliverability of external resources in conjunction with reduced voltage limits

- Results in a doubling of the 2010 resource need
- Year of Need moves to 2008

Conclusions

- **Increasing dependence on external resources increases the importance and criticality of regional planning**
 - **NYCA resource needs very sensitive to the level of internal and external resources that can be delivered to NYC and LI**
 - **Voltage issue in the Hudson Valley must be addressed or resource adequacy requirements in J and K will increase**
 - **There are a number of environmental initiatives whose impact will need to be addressed on an ongoing basis**
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- **Discussion of Draft RNA**