

2020 RNA Base Case

Preliminary MARS Topology Changes

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Goal

- **This presentation highlights the major factors influencing the MARS topology changes, compared with the 2018 RNA**
 - This is a preliminary overview of known major changes, and before application of the final RNA Base Case inclusion rules

2020 RNA Background

- **The 2020 Reliability Planning Process (RPP) starts with the 2020 Reliability Needs Assessment (2020 RNA) followed by the Comprehensive Reliability Plan (CRP)**
 - 2020 RNA Study Period: year 1 (y1) = 2021 through year 10 (y10) = 2030
- **The RPP is part of the Comprehensive System Planning Process (CSPP) and is performed pursuant to the Attachment Y of the NYISO OATT; see Section 31.2.**
 - Additional implementation details, including recently updated RNA Base Case inclusion rules, are captured in the RPP Manual #26
- **2020 RNA will be based on the information from the Gold Book 2020, the 2020 FERC 715 filing (power flow cases and auxiliary files), historical data, and market participant data**
- **Reliability evaluations: transmission security and resource adequacy**

GE MARS and System Topology Background

- The NYISO uses the GE MARS program for assessing the resource adequacy of the NY bulk power system
- The GE MARS program is a probabilistic analysis tool used for calculating expected values of reliability indices such as Loss of Load Expectation (LOLE, days/year) and includes load, generation, and transmission representation. The four external Control Areas interconnected to the NYCA are also modeled
- The transmission system is modeled through transfer limits on the interfaces between pairs of interconnected areas;
 - aka “the topology”
- A graphical representation of the topology is developed and provided as a communication tool

Summary of Changes (compared with the 2018 RNA):

- 1) Marion-Farragut 345kV cables (B and C) assumed out of service
- 2) 71, 72, M51, M52 series reactors assumed by-passed after deactivation of Indian Point
- 3) Moses – St. Lawrence (L33P) tie line assumed out of service
- 4) Rainey – Corona transmission project in service impacting J to K limits
- 5) UPNY-SENY simplification 2021-2023 without addition of AC PPTPs
- 6) AC PPTPs Segment A and B Projects Added starting 2024
- 7) Cedars tie to Zone D model

Assumptions Changes for 2020 RNA

- **1) Marion-Farragut 345kV cables (B and C) assumed out of service**
 - “BC Lines” limit reduced to 0 MW (-1,000 MW)
 - “ABC Lines” limit reduced to 105 MW (-210 MW)
- **2) 71, 72, M51, M52 series reactors assumed bypassed after deactivation of Indian Point**
 - UPNY-Con Ed limit increased to 7000 MW (+750 MW) in 2021
 - I to J limit reduced to 4350 MW (-50 MW)
- **3) Moses – St. Lawrence (L33P) tie line assumed out**
 - Zone D to Ontario limit reduced to 150 MW (both directions)
 - Increased back to 300 MW in 2022

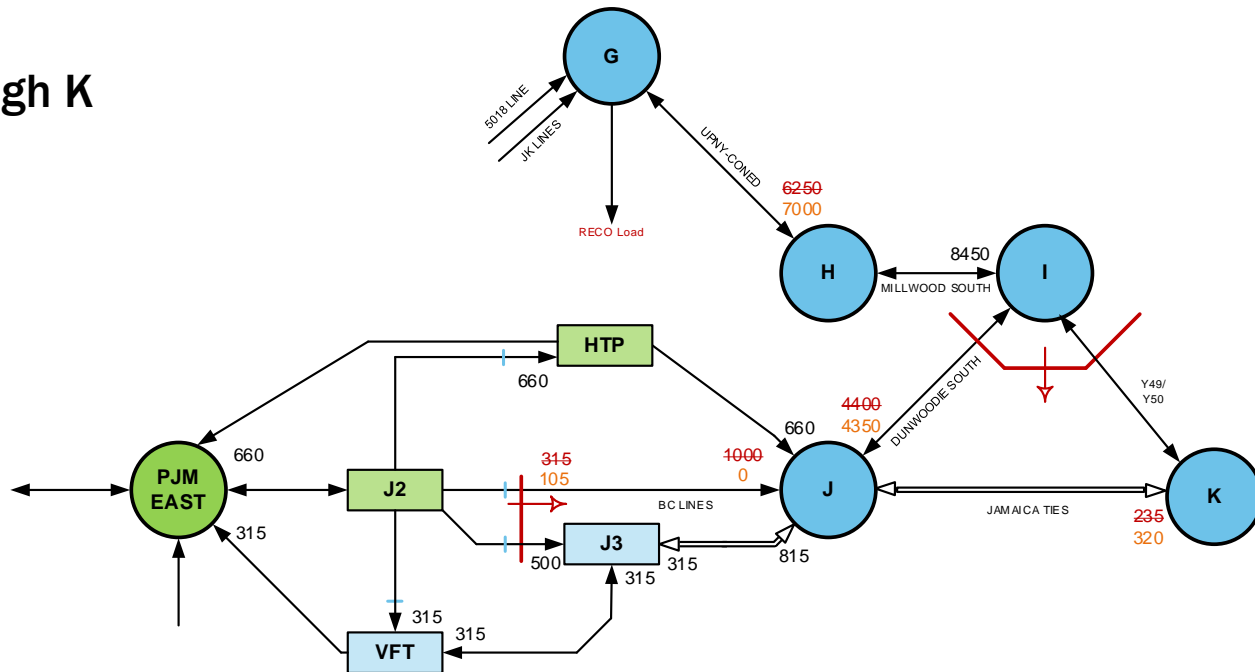
4) Rainey – Corona Transmission Project

- **Rainey – Corona transmission project in service starting 2019**
 - “Jamaica Ties” (Zones J to K) forward limit increased to 320 MW (+85 MW)

MARS Topology Updates

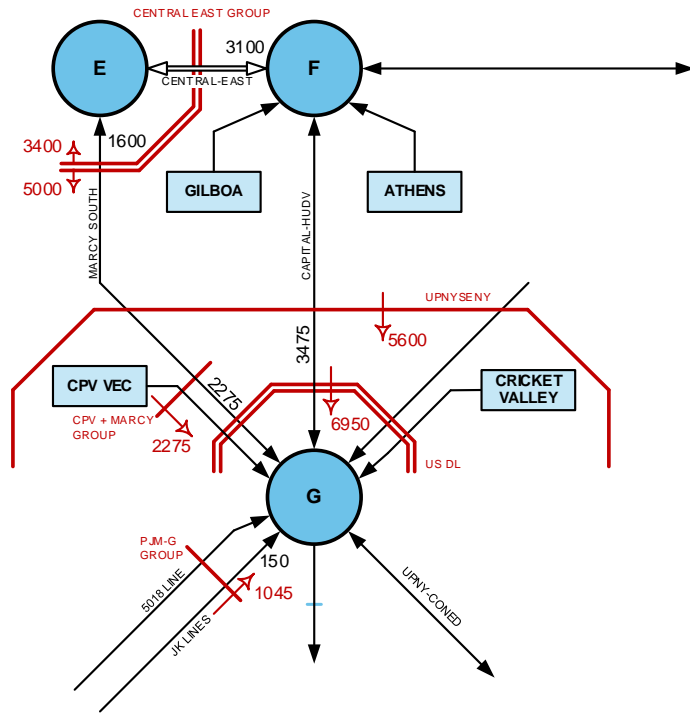
2020 RNA Draft (Study Year 2021)

G through K
Detail

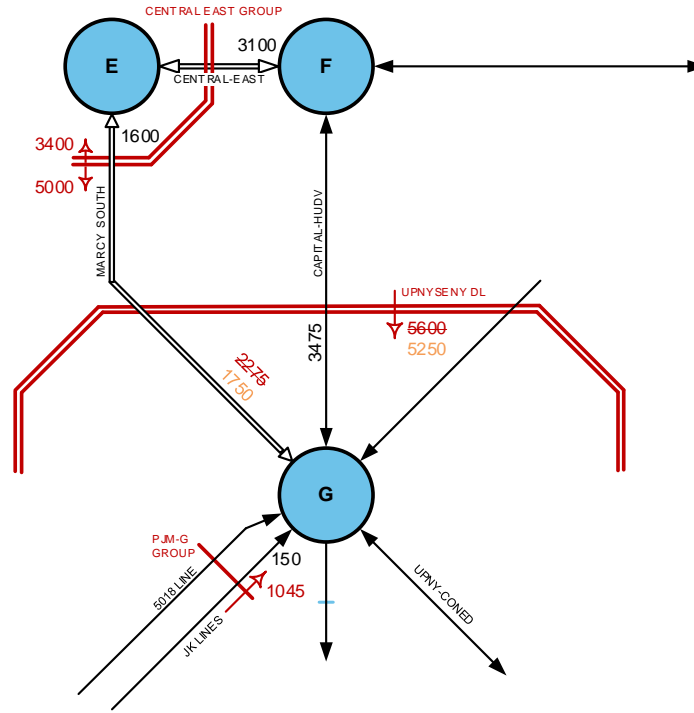


5) UPNY-SENY Model Simplification 2021-2023 (pre-AC PPTPP)

2018 RNA (Study Year 2021)



2020 RNA Draft (Study Year 2021)



5) UPNY-SENY Model Simplification 2021 – 2023, cont.

- MARS program updated
- Translate UPNY-SENY Dynamic Limit Table (DLT) back to original interface (in MW)

		# of Units In-Service		
2020 RNA UPNYSNY1	2018 RNA UPNYSNY2	CPV Valley	Cricket Valley	Athens
5250	6950	2	3	3
5100	6750	2	3	2
5350	6700	1	3	3
5200	6550	2	2	3
5150	6150	2	1	3
5250	5950	1	1	3
5100	5800	2	0	3
5350	6600	All other conditions		

5) UPNY-SENY Model Simplification 2021 – 2023, cont.

- **Units modeled in Zones instead of separate bubbles**
 - Athens (F), Cricket Valley (G), CPV Valley (G)

- **Zones E to G (Marcy South)**

- Removed joint interface that included CPV Valley output and flow calculation
- Replaced with simple DLT

E to G	# of Units I/S CPV Valley
1750	2
2000	1
2250	0

6) AC PPTPP Segment A and B Projects Added in 2024

■ Central East area

- Central East (E to F) limit increased to 3925 MW (+825 MW)
- CE Group limit increased to 5650 MW (+650 MW)

■ UPNY-SENY area

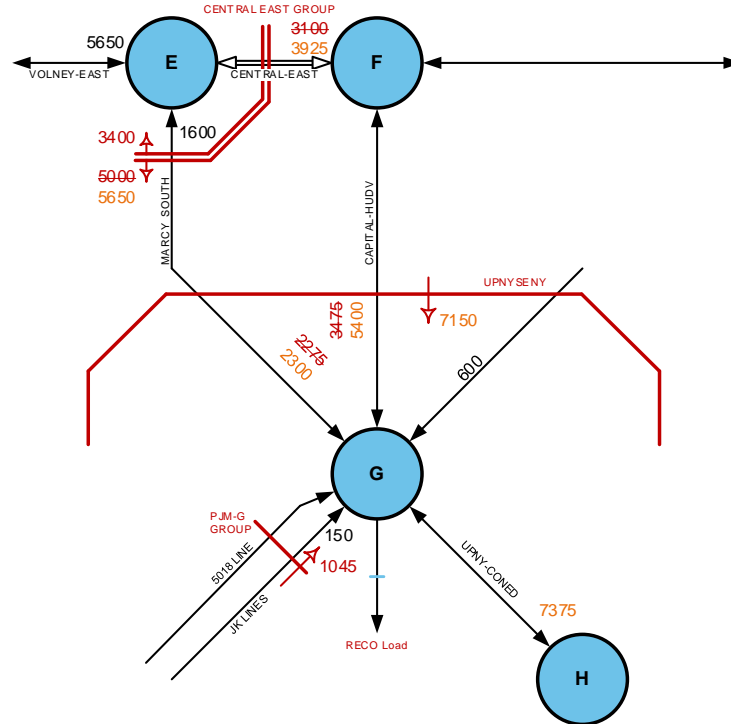
- Implement single limit for UPNY-SENY with a limit of 7150 MW (+1,850 MW)
- Increase F to G limit to 5400 MW (+1,925 MW)
- Increase E to G limit to 2300 MW, single limit

■ UPNY-Con Ed

- Increase the limit to 7375 MW

6) 2020 RNA Topology 2024 - 2030

2020 RNA Draft (Study Year 2024)



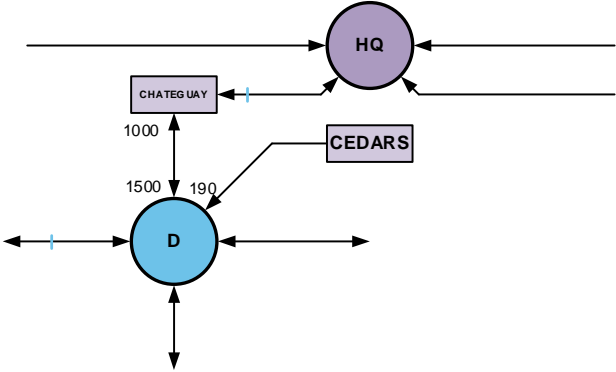
E through H detail

7) Combine the Chateauguay and Cedars Ties

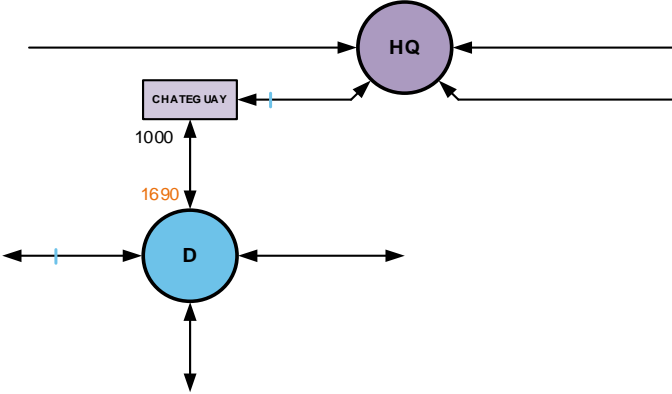
- **Chateauguay tie to Zone D**
 - 1500 MW limit towards Zone D
- **Cedars tie to Zone D**
 - 190 MW limit towards Zone D
- **Replace with combined tie to Zone D**
 - 1690 MW limit towards Zone D
 - This model aligns with last year's IRM Study process

7) Topology Change - Cedars Tie

2018 RNA (Study Year 2021)



2020 RNA Draft (Study Year 2021)



Questions?

Our mission, in collaboration with our stakeholders, is to serve the public interest and provide benefit to consumers by:

- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policymakers, stakeholders and investors in the power system

