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Independent System Operator

2021 - 2022 IRM Proposed MARS Topology Changes

Frank Ciani

Capacity Market Operations – Resource Adequacy

NYSRC- Installed Capacity Subcommittee

April 1, 2020

Objective

- **Review proposed MARS Topology changes from the 2020 RNA as applied to the 2021-2022 IRM Study**
  - RNA topology changes cover a ten-year study period
  - IRM Study period covers only the first year of the RNA
  - Some changes noted in the RNA presentations have already been incorporated into the previous IRM study
  - Topology will be reviewed at the April TPAS

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NYISO RNA study

- RNA study assumptions are undergoing review as part of the study process
- RNA team presented certain initial study assumptions at the 2/27/2020 and 3/16/2020 ESPWG meetings
  - https://www.nyiso.com/documents/20142/11350020/06%202020RNA_MARS-BaseCasePrelimTopologyChanges.pdf/8674a5ac-6ee0-2d3a-3cfa-17fdfbc5cb34
  - https://www.nyiso.com/documents/20142/11350020/07%202020RNA_MARS-ExternalAreasSimplification.pdf/172c8e72-2fef-9de6-25b5-02a5df2d7aec

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Indian Point Deactivation Topology Changes

- **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)

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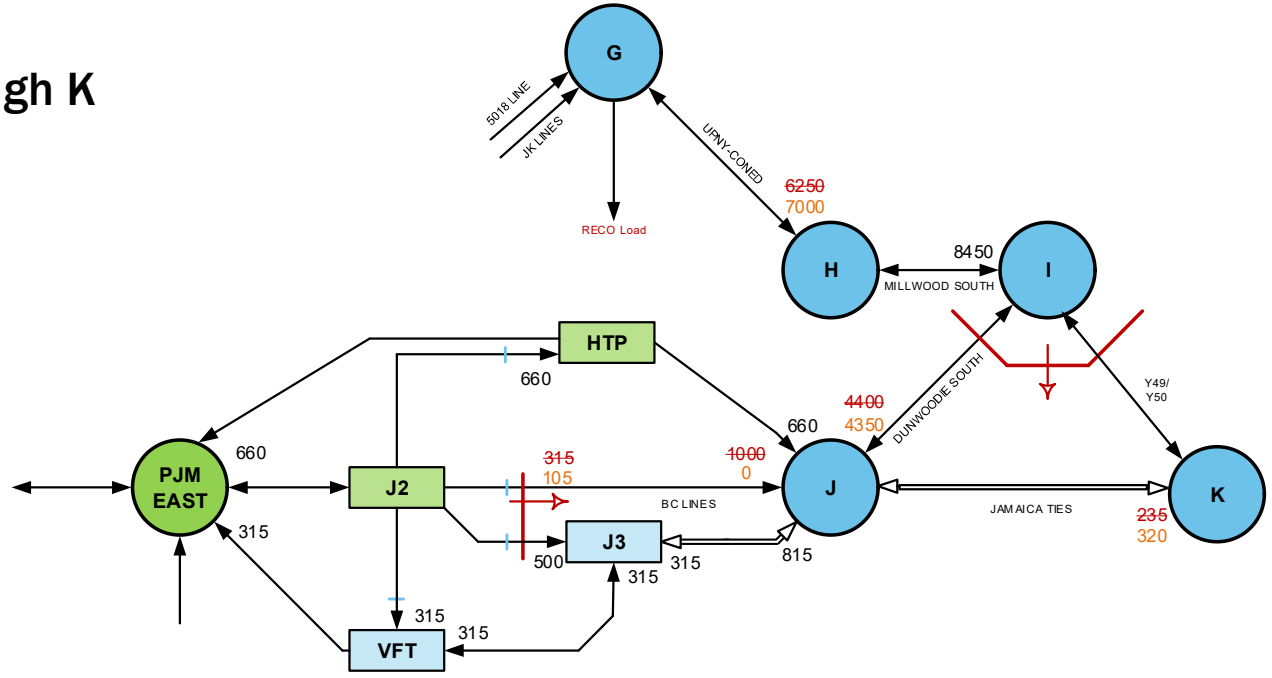
Indian Point Deactivation Topology Model

2020 RNA Draft (Study Year 2021)

G through K Detail



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UPNY-SENY Model Simplification

- 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		

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UPNY-SENY Model Simplification Cont'd

- **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

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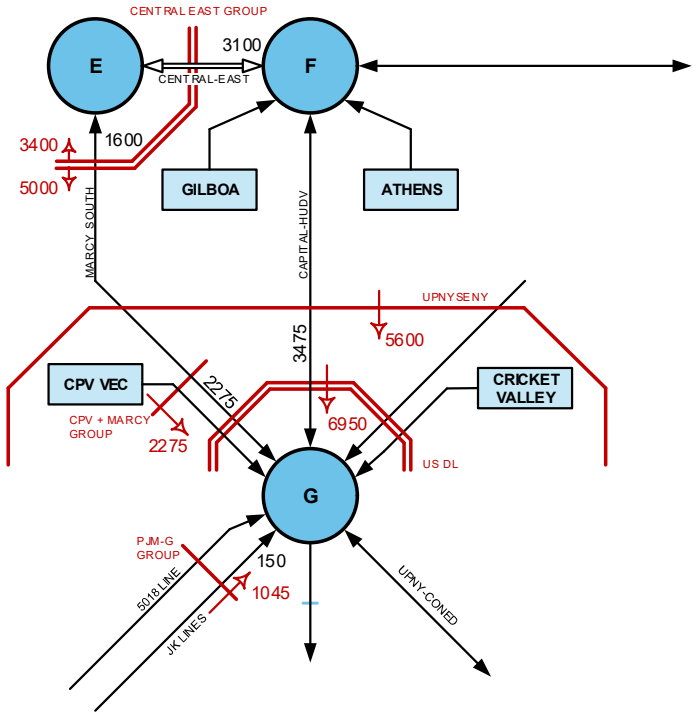
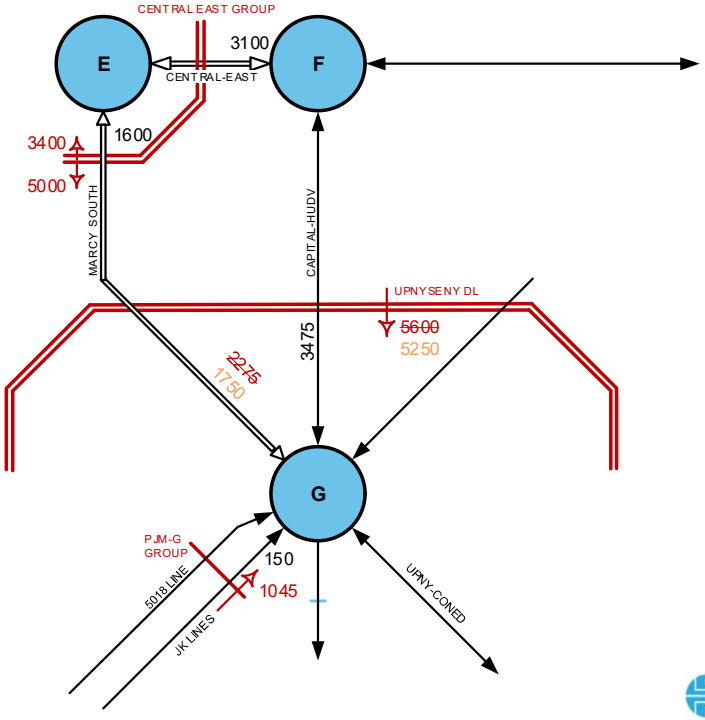
IRM 2021 UPNY-SENY Model Simplification

2018 RNA (Study Year 2021)



2020 RNA Draft (Study Year 2021)



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Proposed External Area Model Updates

- These changes are not planned to be included in the 2021 IRM study
- NYISO Planning /Resource Adequacy is reviewing how these changes impact the IRM
- These changes will be incorporated into the external control area modeling whitepaper for the NYSRC/ICS
- Resource Adequacy will update ICS as progress is made

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Proposed External Area Model Updates

- Consolidate 5 PJM (mid-Atlantic) areas into a single area
- Consolidate 14 ISO-NE areas into a single area

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Benefits of the External Model Changes

- **Increased Performance**
  - Reducing the size of the model reduces the overall complexity, reducing runtime
  - The described changes reduce runtime ~15%
- **Simplified application of assumptions**
  - Current practice is a two-step process (See NYSRC Policy 5)
    - Adjust the LOLE of external areas to be between 0.105 and 0.110 days/year - except for PJM which is adjusted to 0.14 LOLE
    - If the external area's margin is not met, adjust load to meet the area's margin
  - Reducing the number of external areas that are being adjusted simplifies the procedure
  - The methodology to adjust external areas was modified in 2020 IRM study to better reflect New York's interaction with ISO-NE and PJM
    - The methodology was regarded by many as an improvement
    - A single bubble representation of each external control area is next logical enhancement

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Questions?

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- 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

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