

2021 - 2022 IRM Proposed MARS

Topology

Frank Ciani

Capacity Market Operations – Resource Adequacy

ESPWG/TPAS

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*Note correction to Slide 13 (LI SUM values updated)

Objective

- **Present proposed 2021 IRM Study MARS topology**
- **Review proposed MARS Topology changes from the 2020 IRM Study MARS topology to the 2021 Study MARS topology**
 - 2020 RNA study proposed various topology changes for the 2021 study year; many of these applicable to the 2021 IRM Study
 - RNA Team presented RNA topology to ESPWG/TPAS on Feb 27th, March 16th, and April 6th
 - IRM Study period covers only the first year of the RNA
 - Some changes noted in the RNA presentations were already incorporated into the 2020 IRM study
 - IRM topology maintains fourteen bubble ISO-NE and five bubble PJM models
- **Topology will be presented to NYSRC ICS on June 4th for approval**

Indian Point Deactivation Topology Changes

- **71, 72, M51, M52 series reactors assumed bypassed after deactivation of Indian Point**
 - UPNY-Con Ed (Zone G to Zone H) limit increased to 7,000 MW (+1,000 MW) from 6,000 MW
 - Dunwoodie South (Zone I to Zone J) limit reduced to 4,350 MW (-50 MW)

UPNY-SENY Model Simplification

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

2021 IRM Study UPNYSSENY	2020 IRM Study UPNYSNY2	# of Units In-Service		
		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		

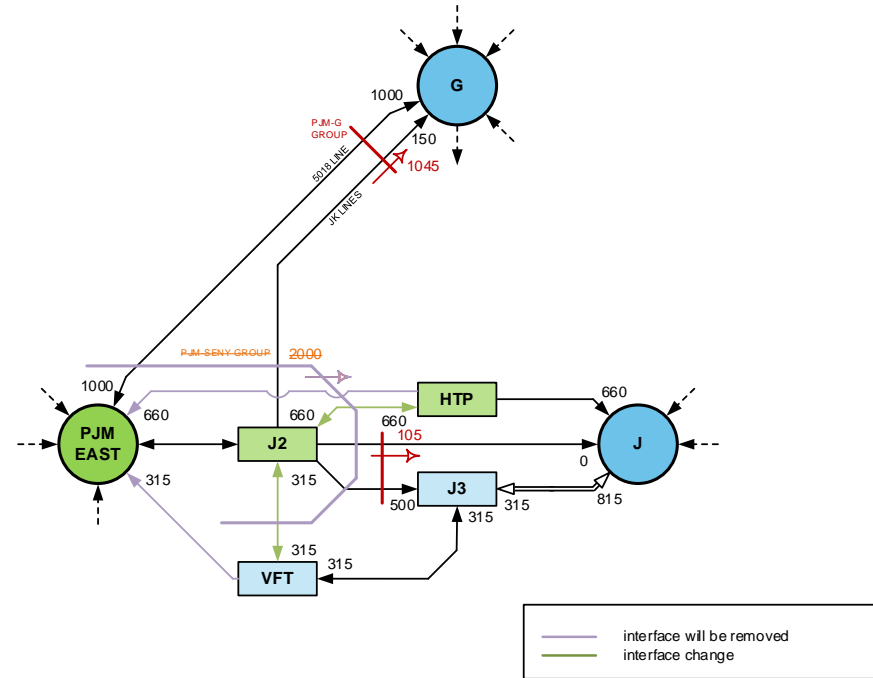
UPNY-SENY Model Simplification Cont'd

- **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
 - 2020 IRM joint limit (CPV + Marcy South $\leq 2,275$ MW)
 - Replaced with simple DLT
 - Total MW from CPV and Marcy South = CPV output + DLT value
- **The UPNY-SENY modeling simplifications produce a minimal LOLE change**

E to G	# of Units I/S CPV Valley
1,750	2
2,000	1
2,250	0

PJM-SENY Group Interface Removal

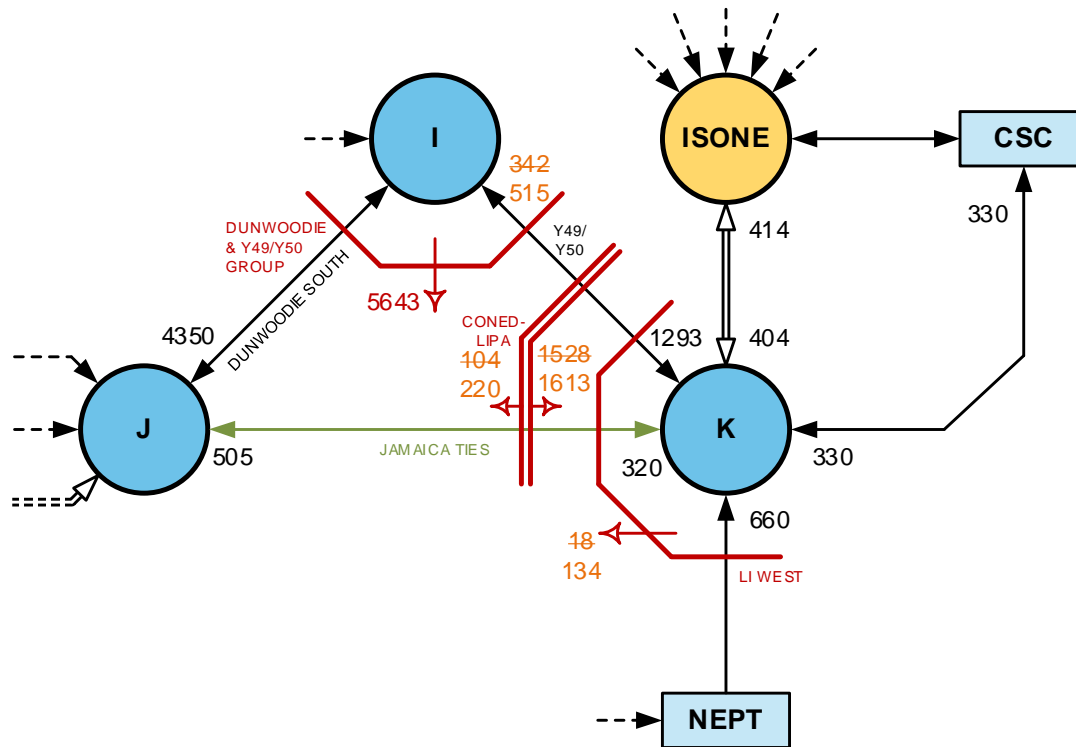
- This interface group was used to limit total imports from PJM into Zones G & J
 - Due to changes in the system and MARS topology, this interface group is no longer limiting in a majority of situations
- Removal of this interface group has no impact on the observed LOLE



Updates to Zone K Topology

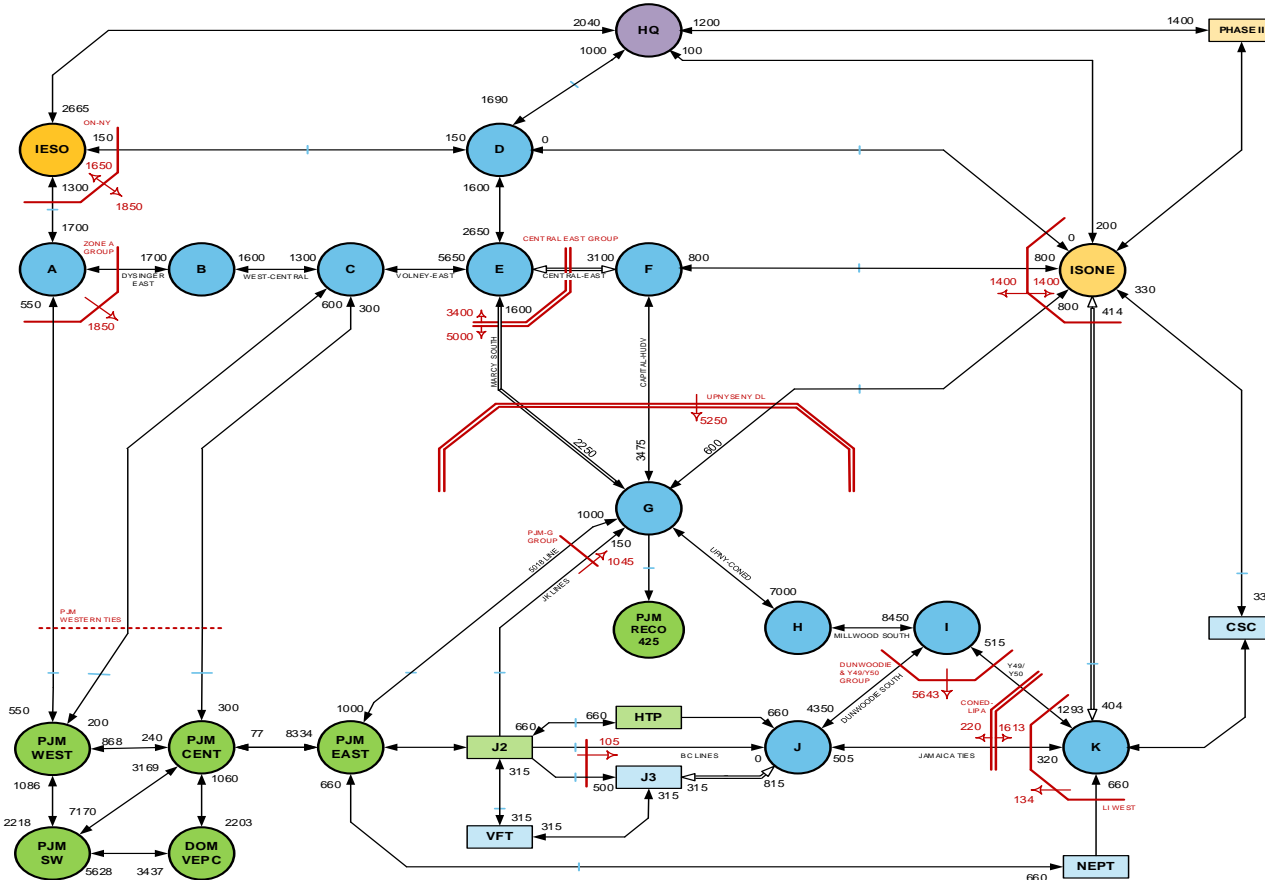
- **The NYISO received updates from PSEG-LI**
 - These values are considered preliminary pending final application of the inclusion rules
- **System Changes**
 - Reduced load forecast for western Long Island
 - Additional East Garden City – Valley Stream 138 kV circuit
- **Topology limit changes**
 - Increased ability to export power from Long Island
 - The J_TO_K (Jamaica ties) limit is no longer dependent on Barrett availability

Updates to Zone K Topology



— interface will be removed
— interface change

Draft Topology for 2021 IRM Study



- ### Notes
1. PJM to NY emergency assistance (EA) assumption for calculating the PJM-NY Western ties, PJM-G Group, and ABC Line Group flow distribution limit: 1500MW
 2. NYCA EA simultaneous import limit: 3,500 MW
 3. External areas representation based upon information received from the NPCC CP-8 WG

Legend

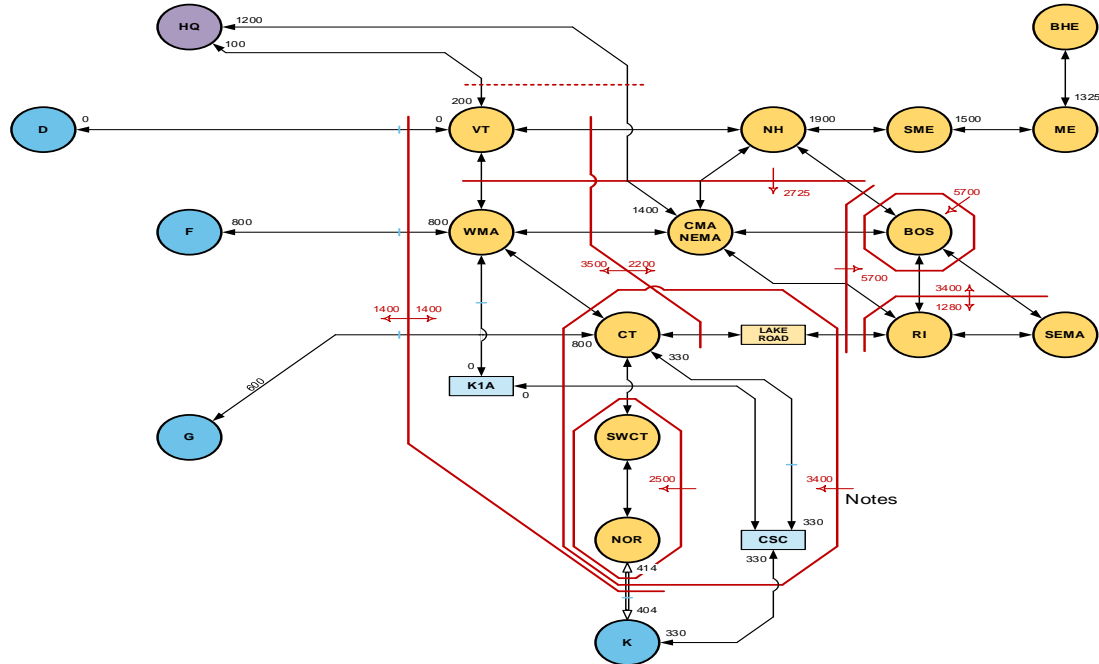
- Interface
- Unidirectional Interface
- Interface w/ Dynamic Ratings
- Interface Group
- Interface Group w/ Dynamic Ratings
- Monitoring Interface Group
- NYCA EA Interface Group Marker
- “Dummy Bubble” i.e. no load

NOTE: An interface is considered to not have a MW limitation if no number is specified

For Internal Discussions Only

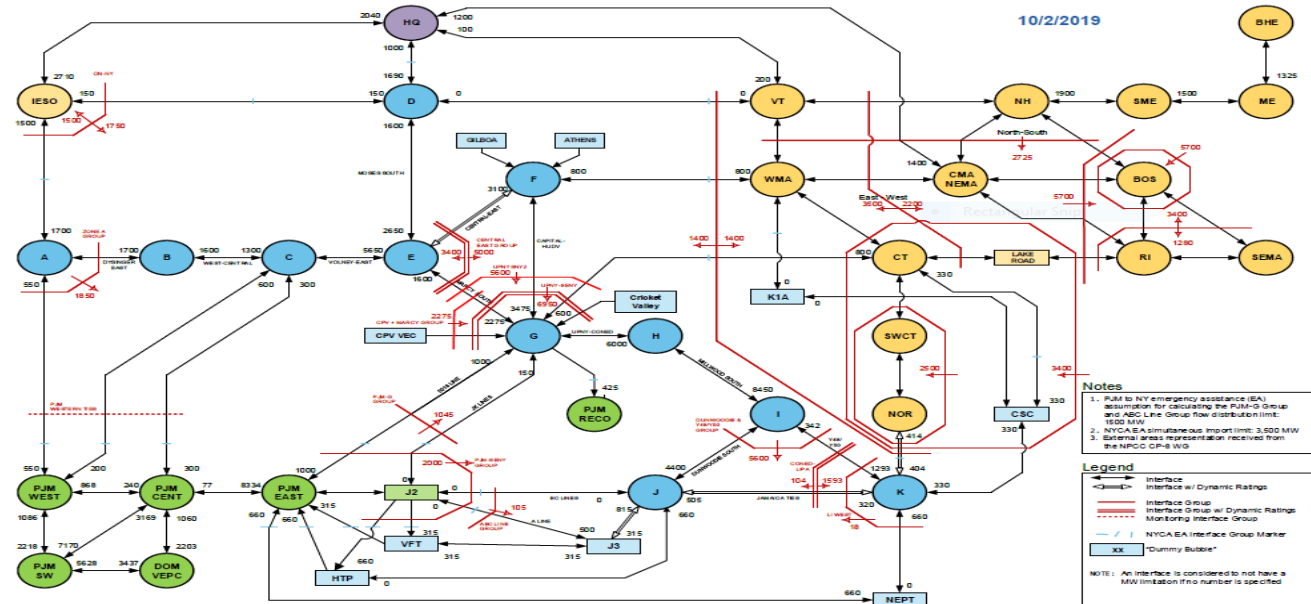


ISO-NE - 14 Bubble Model



IRM 2020 Topology

Attachment E - IRM Topology 2020 IRM Topology (Summer Limits)



Interface Limit Comparisons (IRM 2021 vs. IRM 2020) – Cont'd

NYCA Interface Limits				
	2021 IRM		2020 IRM	
	Forward	Reverse	Forward	Reverse
DYSINGER EAST	1700	1999	1700	1999
WEST CENTRAL	1300	1600	1300	1600
VOLNEY EAST	5650	1999	5650	1999
MOSES_SOUTH	2650	1600	2650	1600
CENTRAL EAST	3100	1999	3100	1999
MARCY SOUTH	2250	1600	2275	1600
CAPITAL HUDSON VALLEY	3475	1999	3475	1999
UPNY - CONED	7000	1999	6000	1999
MILLWOOD SOUTH	8450	1999	8450	1999
DUNWOODIE SOUTH	4350	1999	4400	1999
CONED LILCO	320	505	320	505
AREA I TO AREA K	1293	515	1293	342

Interface Limit Comparisons (IRM2021 vs. IRM2020) – Cont'd

NYCA Group Interfaces				
	2021 IRM		2020 IRM	
	Forward	Reverse	Forward	Reverse
UPNY/SENY	5250	99999	5600	99999
UPNY/SNY2	N/A	N/A	6950	99999
CE_GRP	N/A	N/A	5000	3400
CPV&E_G	N/A	N/A	2275	99999
LI_SUM	1613	220	1593	104
LI_WEST	99999	134	99999	18
DSY49Y50	5643	1999	5600	1999
A_EAST	1850	99999	1850	99999

Interface Limit Comparisons (IRM 2021 vs. IRM 2020)

Central East Voltage Limits, Oswego Complex Units								
	IRM2021				IRM2020			
Dependency	9MILP1, 9MILP2, FPNUC1, STHIND, OS05, OS06				9MILP1, 9MILP2, FPNUC1, STHIND, OS05, OS06			
Units Available	E_TO_F		E_TO_FG		E_TO_F		E_TO_FG	
	Forward	Reverse	Forward	Reverse	Forward	Reverse	Forward	Reverse
6	3100	1999	5000	3400	3100	1999	5000	3400
5	3050	1999	4925	3400	3050	1999	4925	3400
4	2990	1999	4840	3400	2990	1999	4840	3400
3	2885	1999	4685	3400	2885	1999	4685	3400
2	2770	1999	4510	3400	2770	1999	4510	3400
All Other Conditions	2645	1999	4310	3400	2645	1999	4310	3400

Staten Island Import Limits, AK and Linden CoGen Units							
				IRM2021		IRM2020	
Unit Availability				J_TO_J3		J_TO_J3	
AK02	AK03	LINCOG1	LINCOG2	Forward	Reverse	Forward	Reverse
A	A	A	A	315	200	315	200
U	A	A	A	315	500	315	500
A	U	A	A	315	700	315	700
A	A	U	A	315	500	315	500
A	A	A	U	315	500	315	500
All Other Conditions				315	815	315	815

Interface Limit Comparisons (IRM 2021 vs. IRM 2020) – Cont'd

UPNYSENY				
Units Available				
CPV	Cricket	Athens	IRM 2021	IRM 2020
2	3	3	5250	6950
2	3	2	5100	6750
1	3	3	5350	6700
2	2	3	5200	6550
2	1	3	5150	6150
1	1	3	5250	5950
2	0	3	5100	5800
All Other Conditions			5350	6600

E to G		
Units Available		
CPV	IRM 2021	IRM 2020
2	1750	N/A
1	2000	N/A
0	2250	N/A

Interface Limit Comparisons (IRM 2021 vs. IRM 2020) – Cont'd

LI_NE: Northport Units 1-4				
Units Available	IRM 2021		IRM 2020	
	Norwalk to K	K to Norwalk	Norwalk to K	K to Norwalk
4	260	414	260	414
All Other Conditions	404	414	404	414

ConEd-LIPA: Barrett Units 1 & 2				
Units Available	IRM 2021		IRM 2020	
	I-J to K	K to I-J	I-J to K	K to I-J
2	1613	220	1593	104
1	1613	200	1593	74
0	1613	130	1593	0

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

