AC Transmission Public Policy Transmission Planning Report Addendum

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Topics

- Responses to Comments, Questions, and Data Requests
- ICAP Benefit Follow-up
- Next Steps

Operability: Operation of the T019 Series Capacitor

- **The T019 transmission project can provide operational benefits since the NYISO will have the ability to direct the operational status of the series compensation.**
  - This would only be likely for a few single 345 kV outages or combination of 345 kV outages and only for the duration of the transmission maintenance.
  - The NYISO does not expect to by-pass the series compensation for long time periods nor entire seasonal capability periods.

Operability: Resilience from Structure Design

- All projects meet National Electric Safety Code standards.
- T019 utilizes heavier duty structures mounted on drilled-shaft concrete foundations, and also uses more dead-end structures.
- T019 structures are designed to withstand 1.5” ice and 2 pounds per square foot wind with an overload factor of 1.1, while other projects cannot withstand this level of loading.
- T019 demonstrates better resilience in the comparative evaluation.

Interconnection Studies

- **T019 System Impact Study shows a fault current of 80.94 kA for a fault at KNICK_SC bus.**
  - KNICK_SC is a dummy bus between Knickerbocker and Pleasant Valley in the power flow database to model the series capacitor.
  - There is no single breaker in series with the series capacitor.
  - No breaker ratings would be exceeded at Knickerbocker and Pleasant Valley substations.

Interconnection Studies

- **System Impact Studies identified potential Network Upgrade Facilities to mitigate the NY to NE transfer limit degradation.**
  - All Segment B projects result in NY to NE transfer limit degradation.
  - System Impact Studies identified multiple options of Network Upgrade Facilities (NUFs) to restore the NY to NE transfer capability.
  - The NUFs will be further studied and finalized in the Facilities Studies.

Property Rights

- **T019 proposed two 135 MVAR shunt capacitor banks at Pleasant Valley 345 kV substation, which require additional property.**
  - System Impact Study for T019 indicates that the two capacitor banks will be installed outside of the Con Edison's property and interconnected to the Pleasant Valley substation.
  - The SECO evaluation includes 1.4 acres of utility property to expand the Pleasant Valley substation for T019 to accommodate the two shunt capacitor banks.
  - The public policy evaluation also includes $7 million associated with the two shunt capacitor banks, associated equipment, and additional property.

Facilities Study

- Selected Segment A and Segment B projects will be studied together.
- More detailed studies, including Subsynchronous Resonance and Transient Recovery Voltage, will be performed.
- Network Upgrade Facilities will be finalized to mitigate identified issues.

Impedance Correction

- Following the initial stakeholder review of the Revised Report, the NYISO was informed of a modeling error introduced by National Grid/Transco for their T019 proposal and by NAT/NYPA in their T029 and T030 proposals.
- Specifically, the impedance data submitted for the New Scotland – Knickerbocker 345 kV line and the Knickerbocker – Alps 345 kV line was transposed for each project.
- National Grid/Transco and NAT/NYPA each provided corrected data for the respective projects.
- The NYISO assessed the impact of the impedance data correction on the calculated transfer limits and on affected metrics, as reflected in the following slides.

Transfer Limit Analysis

- UPNY-SENY N-1 NTC Limits : used in Cost per MW

Project	Original	w/ Impedance Correction	Delta
T027+T019	7150	7150	0
T027+T029	6525	6600	75
T027+T030	6650	6750	100

Cost Per MW: Synergies Incorporated

Project	Segment B Independent Cost Estimate w/ Synergies (2018 $M)	Incremental UPNY/SENY (MW)	Cost per MW
T027+T019	$479	2,100	0.228
T027+T022	$373	1,600	0.233
T027+T023	$424	1,550	0.274
T027+T029	$401	1,550	0.259
T027+T030	$419	1,700	0.246
T027+T032	$536	1,525	0.351

Transfer Limit Analysis

- UPNY-SENY N-1-1 NTC Limits : used to establish LCR floor

Project	Original	w/ Impedance Correction	Delta
T027+T019	4725	4725	0
T027+T029	4650	4700	50
T027+T030	4725	4725	0

Production Cost Savings in 2018 $M

- CES + Retirement Scenario with RGGI

Project	Original	w/ Impedance Correction	Delta
T027+T019	1179	1080	-99
T027+T029	1129	1076	-53
T027+T030	1108	1012	-96

- CES + Retirement Scenario with social cost of carbon

Project	Original	w/ Impedance Correction	Delta
T027+T019	1303	1191	-112
T027+T029	1250	1147	-103

Annual Production Cost Savings for Addendum Table A-7

Annual Production Cost Change in 2018 M$ for Original RGGI Program Only:

CES+ Retirement Scenario	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
T027+T019	-23	-36	-27	-28	-35	-44	-56	-71	-76	-77	-76	-69	-69	-61	-61	-58	-56	-54	-53	-48
T027+T022	-21	-33	-24	-28	-34	-44	-56	-77	-76	-76	-75	-69	-70	-63	-61	-58	-56	-54	-54	-47
T027+T023	-21	-33	-24	-28	-34	-44	-56	-77	-76	-76	-75	-69	-70	-63	-61	-58	-56	-54	-54	-47
T027+T029	-21	-33	-24	-28	-34	-44	-56	-77	-76	-76	-75	-69	-70	-63	-61	-58	-56	-54	-54	-47
T027+T030	-20	-32	-25	-26	-33	-40	-52	-73	-70	-71	-71	-65	-65	-60	-58	-54	-53	-50	-50	-45
T027+T032	-21	-33	-24	-28	-34	-44	-56	-77	-76	-76	-75	-69	-70	-63	-61	-58	-56	-54	-54	-47

Annual Production Cost Change in 2018 M$ for Social Cost of Carbon Sensitivity:

CES+ Retirement Scenario	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
T027+T019	-30	-45	-22	-33	-47	-55	-65	-80	-83	-84	-83	-73	-74	-64	-65	-59	-61	-57	-59	-53
T027+T022	-28	-36	-21	-33	-44	-54	-64	-77	-79	-80	-84	-64	-73	-66	-65	-61	-60	-58	-52	-49
T027+T023	-28	-36	-21	-33	-44	-54	-64	-77	-79	-80	-84	-64	-73	-66	-65	-61	-60	-58	-52	-49
T027+T029	-28	-36	-21	-33	-44	-54	-64	-77	-79	-80	-84	-64	-73	-66	-65	-61	-60	-58	-52	-49
T027+T030	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
T027+T032	-28	-36	-21	-33	-44	-54	-64	-77	-79	-80	-84	-64	-73	-66	-65	-61	-60	-58	-52	-49

Demand Congestion

Annual Demand Congestion in 2018 M$ for New Scotland - Knickerbocker:

CES+ Retirement Scenario	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Pre-Project*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
T027+T019	5	10	17	26	50	97	127	199	175	161	174	165	173	160	159	128	138	115	129	114
T027+T029	2	7	11	14	32	54	76	119	104	93	107	101	105	91	92	72	84	69	79	68
T027+T030	7	12	18	27	52	94	126	191	170	158	172	164	171	153	146	123	133	114	126	109

*: Pre-Project does not model New Scotland - Knickerbocker; however, New Scotland - Alps exists and is reflected in the numbers above.

MARS Topology

- Incremental UPNY-SENY ETC Limits: used in resource adequacy and ICAP benefits

Project	Original	w/ Impedance Correction	Delta
T027+T019	2100	1850	-250
T027+T029	1150	1300	150

Operability: SENY Reserve Requirement

Project	Original	w/ Impedance Correction	Delta
T027+T019	1725	1725	0
T027+T029	1275	1250	-25
T027+T030	1250	1325	75

Operability: Impacts on SENY 30-Minute Reserve Requirement

- The NYCA 30-minute reserve requirement of 2,620 MW would not change as a result of the transmission projects. Given that reserve suppliers located in SENY typically provide the majority of the 30-minute NYCA reserve requirement of 2,620 MW, the 475 MW increase in the SENY locational reserve requirement associated with the T019 project is not expected to be impactful.

Operability: Impacts on SENY 30-Minute Reserve Requirement

- The NYISO has received questions regarding impacts to reserve requirements for the “CES+ Retirement” scenario:
  - It is difficult to project future reserves clearing prices reflective of future generator retirements, generator additions, increased renewables, increased energy efficiency initiatives, increased transmission capability, possible carbon pricing.
- The additional 475 MW 30-minute SENY reserve requirement will be offset by a 475 MW reduction in Rest of State.
- Increased transmission capability will increase energy transfers into SENY.

Operability: Ability to Accommodate Generator Deactivation

Maximum Capacity Removal from Zone G in 2030

Project	Baseline	CES + Retirement
T027+T019	1,400	2,750
T027+T029	1,400	2,250

Capacity Benefit Follow-Up

Capacity Benefit: Impact of Impedance Correction

- In the previous analysis, T019 provides 950 MW of additional UPNY-SENY emergency transfer capability compared to other Segment B projects. With the impedance data corrected, the additional transfer capability is now 550 MW.
- This reduced differential would have a corollary effect on the ICAP savings differential between the projects. Nevertheless, an additional increase of 550 MW to the interface that defines the G-J Locality is significant, and therefore T019 still offers significantly greater capacity savings than the other Segment B projects.
- The MMU assessment (which is not impacted by the impedance data correction) confirms that there are material capacity benefits for the construction of AC transmission and that the capacity benefits for T019 exceed those of T029.

Scenarios Studied

- Two scenarios were studied: baseline case ("Existing Localities"), and a second case ("G-J elimination") in which the capacity zones are reconstituted due to pending changes to the resource mix and the construction of the AC Transmission projects.
- It is important to understand that the assumptions and findings of the "G-J elimination" sensitivity should not be construed as advocating for or against the elimination of the G-J locality nor a commentary on potential ICAP market rules for eliminating localities.
- This sensitivity simply reports the estimated capacity benefits for all Segment B projects under a defined set of assumptions if the locality were to be eliminated once a proposed AC Transmission project enters into service.

Derivation of Transmission Security Floors (2025)

	G-J			H-J		
	Base	T27-T19	T27-T29	Base	T27-T19	T27-T29
Load Forecast (MW)	16,055	16,055	16,055	13,665	13,665	13,665
Transmission Security Import Limit (MW)	3,450	4,725	4,650	5,150	6,150	6,275
Transmission Security UCAP Requirement (MW)	12,605	11,330	11,405	8,515	7,515	7,390
Transmission Security UCAP Requirement (%)	78.5%	70.6%	71.0%	62.3%	55.0%	54.1%
5 Year EFORd (%)	9.63%	9.63%	9.63%	9.63%	9.63%	9.63%
Transmission Security ICAP Requirement (MW)	13,948	12,537	12,620	9,422	8,316	8,177
Transmission Security LCR Floor (%)	86.88%	78.09%	78.61%	68.95%	60.85%	59.84%

	J			K		
	Base	T27-T19	T27-T29	Base	T27-T19	T27-T29
Load Forecast (MW)	11,844	11,844	11,844	5,384	5,384	5,384
Transmission Security Import Limit (MW)	3,200	3,200	3,200	350	350	350
Transmission Security UCAP Requirement (MW)	8,644	8,644	8,644	5,034	5,034	5,034
Transmission Security UCAP Requirement (%)	73.0%	73.0%	73.0%	93.5%	93.5%	93.5%
5 Year EFORd (%)	9.67%	9.67%	9.67%	9.79%	9.79%	9.79%
Transmission Security ICAP Requirement (MW)	9,569	9,569	9,569	5,580	5,580	5,580
Transmission Security LCR Floor (%)	80.79%	80.79%	80.79%	103.65%	103.65%	103.65%

Derivation of Transmission Security Floors (2030)

	G-J			H-J		
	Base	T27-T19	T27-T29	Base	T27-T19	T27-T29
Load Forecast (MW)	16,447	16,447	16,447	14,025	14,025	14,025
Transmission Security Import Limit (MW)	3,450	4,725	4,650	5,150	6,150	6,275
Transmission Security UCAP Requirement (MW)	12,997	11,722	11,797	8,875	7,875	7,750
Transmission Security UCAP Requirement (%)	79.0%	71.3%	71.7%	63.3%	56.1%	55.3%
5 Year EFORd (%)	9.55%	9.55%	9.55%	9.63%	9.63%	9.63%
Transmission Security ICAP Requirement (MW)	14,369	12,960	13,043	9,821	8,714	8,576
Transmission Security LCR Floor (%)	87.37%	78.80%	79.30%	70.02%	62.13%	61.15%

	J			K		
	Base	T27-T19	T27-T29	Base	T27-T19	T27-T29
Load Forecast (MW)	12,153	12,153	12,153	5,549	5,549	5,549
Transmission Security Import Limit (MW)	3,200	3,200	3,200	350	350	350
Transmission Security UCAP Requirement (MW)	8,953	8,953	8,953	5,199	5,199	5,199
Transmission Security UCAP Requirement (%)	73.7%	73.7%	73.7%	93.7%	93.7%	93.7%
5 Year EFORd (%)	9.05%	9.05%	9.05%	9.79%	9.79%	9.79%
Transmission Security ICAP Requirement (MW)	9,844	9,844	9,844	5,763	5,763	5,763
Transmission Security LCR Floor (%)	81.00%	81.00%	81.00%	103.86%	103.86%	103.86%

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Derivation of Transmission Security Floors

- **An inconsistency was identified in the EFORd values used in the calculation of the Transmission Security Floors for G-J and J in years 2030, 2035 and 2040 resulting in slightly higher floors.**
  - The inconsistency for J in the "Existing Localities" case did not impact the overall capacity benefit metric evaluation since the revised floors would not have been binding. The inconsistency for G-J in the "Existing Localities" case did not impact the overall capacity benefit metric evaluation as the revised savings values savings for T019 and T029 were impacted minimally resulting in approximately $4M less incremental savings (<2% of the total incremental savings) for T029 relative to T019 over the 20-year evaluation period.
  - The inconsistencies for G-J and J in the "G-J Elimination" case did not impact the overall capacity benefit metric evaluation as the revised savings values savings for T019 and T029 were impacted only minimally, resulting in approximately $0.7M more incremental savings (<1% of the total incremental savings) for T029 relative to T019 over the 20-year evaluation period.
- **An inconsistency was identified in the load values used in the calculation of the Transmission Security Floors for K resulting in slightly lower floor for all years.**
  - This inconsistency for K was not impactful since the original floor did not bind in any case.
- **The EFORds and Loads utilized in the MARS/Optimization tool were unaffected.**

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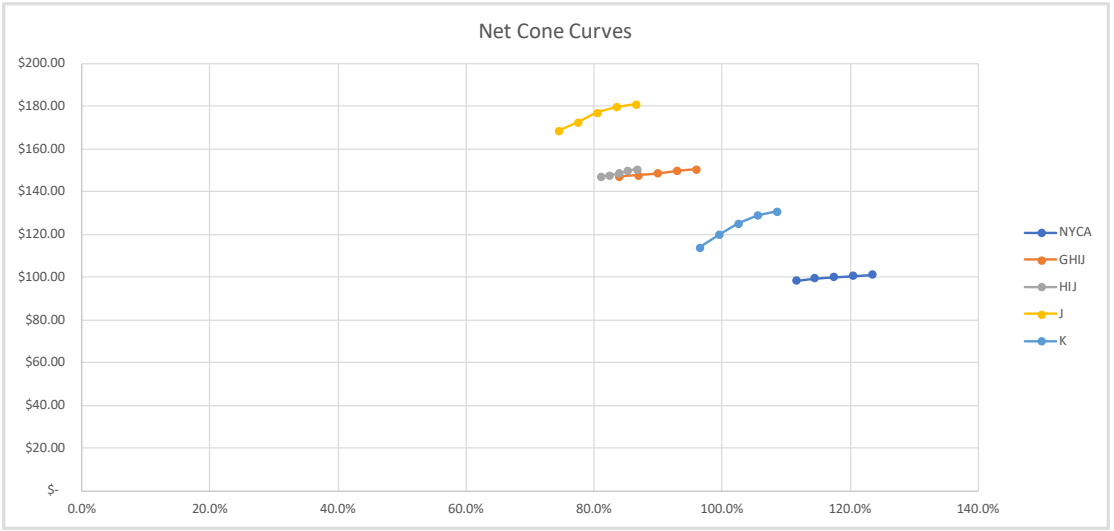
Capacity Additions Assumed in H and I

- The Optimizer tool minimizes procurement costs in establishing the minimum capacity requirements by locality and for the NYCA while meeting reliability requirements and honoring transfer limitations and transmission security limits.
- The Optimizer tool does not assume any capacity build-outs in any specific zones or localities.

Net Cone Curves Utilized in Optimization

Capacity Zone	Requirement	Net CONE
NYCA	111.5%	$ 98.44
NYCA	114.5%	$ 99.50
NYCA	117.5%	$ 100.08
NYCA	120.5%	$ 100.62
NYCA	123.5%	$ 101.14
GHIJ	84.0%	$ 147.13
GHIJ	87.0%	$ 147.79
GHIJ	90.0%	$ 148.52
GHIJ	93.0%	$ 149.76
GHIJ	96.0%	$ 150.57
HIJ	81.1%	$ 147.13
HIJ	82.5%	$ 147.79
HIJ	83.9%	$ 148.52
HIJ	85.3%	$ 149.76
HIJ	86.7%	$ 150.57
J	74.5%	$ 168.55
J	77.5%	$ 172.53
J	80.5%	$ 177.04
J	83.5%	$ 179.52
J	86.5%	$ 181.04
K	96.5%	$ 113.84
K	99.5%	$ 119.64
K	102.5%	$ 124.94
K	105.5%	$ 128.65
K	108.5%	$ 130.79



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Derate Factors Utilized

- As a proxy for a gradual convergence of the Clearing Price towards the Net Cone from current levels, a derating factor was applied to the annual savings:

Year	Factor		Year	Factor
2023	48%		2033	78%
2024	51%		2034	81%
2025	54%		2035	84%
2026	57%		2036	87%
2027	60%		2037	90%
2028	63%		2038	93%
2029	66%		2039	96%
2030	69%		2040	99%
2031	72%		2041	100%
2032	75%		2042	100%

Retirement of Zone G Capacity in "G-J Elimination" case

- NYISO Staff did not adjust the capacity in any Zone or Locality in either the "Existing Localities" or "G-J Elimination" case.
- The NYISO did not perform any analyses such as a revenue-adequacy or a resource contraction study to identify whether or what quantity of resources might be expected to retire under modeled conditions.
- This was a static analysis and did not account for potential dynamic and second-order effects of the transmission expansion or scenario assumptions.

Results from Optimization Runs

Year	Load (MW)				
	J	K	GHIJ	HIJ	NYCA
2025	11,844	5,122	16,055	13,665	32,925
2030	12,153	5,258	16,447	14,025	33,693
2035	12,532	5,421	16,959	14,462	34,746
2040	12,921	5,588	17,481	14,905	35,815

Results from Optimization Runs

Case	Year	Original					w/ HIJ						w/ HIJ w/out GHIJ				
		Cost	J	K	GHIJ	NYCA	Cost	J	K	GHIJ	HIJ	NYCA	Cost	J	K	HIJ	NYCA
Base	2025	$ 5,222.4	86.89%	111.03%	87.04%	120.46%	$ 5,143.6	80.79%	107.80%	86.90%	92.25%	120.06%					
	2030	$ 5,378.9	87.51%	111.71%	88.56%	120.73%	$ 5,294.8	81.00%	109.90%	87.66%	87.05%	120.61%					
	2035	$ 5,523.0	88.07%	113.48%	88.07%	119.83%	$ 5,440.3	81.97%	108.57%	88.40%	89.82%	119.74%					
	2040	$ 5,685.3	89.69%	112.05%	88.94%	119.28%	$ 5,598.4	82.72%	109.45%	88.74%	88.89%	119.15%					
T19	2025	$ 5,114.5	83.68%	108.75%	78.09%	120.66%	$ 5,050.6	80.81%	104.70%	78.09%	85.15%	120.31%	$ 4,956.2	80.84%	108.38%	73.92%	120.35%
	2030	$ 5,265.5	85.48%	109.93%	78.80%	120.68%	$ 5,201.0	81.55%	107.10%	78.80%	85.08%	120.36%	$ 5,101.8	81.17%	109.45%	76.25%	120.43%
	2035	$ 5,439.9	88.48%	107.36%	79.76%	120.40%	$ 5,367.0	81.88%	108.38%	79.76%	87.88%	119.85%	$ 5,261.4	81.88%	110.77%	75.57%	120.16%
	2040	$ 5,585.1	87.63%	111.29%	80.68%	119.29%	$ 5,518.7	83.41%	108.15%	80.68%	83.48%	119.11%	$ 5,404.7	82.72%	109.56%	77.90%	119.24%
T29	2025	$ 5,142.5	84.50%	110.41%	78.77%	120.81%	$ 5,081.3	80.79%	108.35%	78.61%	88.78%	120.23%	$ 4,971.3	80.79%	108.39%	73.72%	120.81%
	2030	$ 5,300.3	85.80%	110.10%	80.83%	121.06%	$ 5,228.2	81.16%	110.20%	79.34%	88.10%	120.45%	$ 5,114.5	81.00%	107.73%	76.51%	121.04%
	2035	$ 5,445.6	86.78%	111.97%	80.35%	120.13%	$ 5,379.3	81.88%	108.81%	80.24%	88.66%	119.66%	$ 5,259.1	81.99%	107.07%	78.26%	120.16%
	2040	$ 5,603.7	87.76%	111.68%	81.63%	119.45%	$ 5,537.5	83.66%	108.98%	81.18%	88.55%	119.05%	$ 5,410.5	82.74%	108.65%	79.62%	119.21%

Rationale for H-J Net Cone

- An H-J Net Cone was not available for use in this analysis.
- The G-J Net Cone was used as representative of the H-J Net Cone and was viewed as reasonable for purpose of this comparative analysis.

Zonal Impacts for the Capacity Metrics

- For illustrative purposes, the table below presents the change in procurement costs for the "Existing Localities" case with capacity priced at Net Cone:

		Locality			
		NYCA	G-J	J	K
T19	Average Annual Change ($M)	($101.08)	($192.21)	($47.51)	($31.27)
	Average % Change	-5.1%	-33.6%	-2.4%	-3.8%
T29	Average Annual Change ($M)	($79.47)	($163.44)	($51.03)	($11.80)
	Average % Change	-4.0%	-28.5%	-2.5%	-1.4%

Annual Capacity Benefit Savings

T19	Existing Localities		G-J Elimination	
Year	Net Cone ($M)	Glide Path ($M)	Net Cone ($M)	Glide Path ($M)
2023	$79	$38	$148	$71
2024	$76	$39	$141	$72
2025	$72	$39	$134	$72
2026	$69	$39	$128	$73
2027	$65	$39	$122	$73
2028	$62	$39	$116	$73
2029	$59	$39	$110	$73
2030	$56	$39	$105	$73
2031	$54	$39	$100	$72
2032	$51	$38	$95	$72
2033	$49	$38	$91	$71
2034	$47	$38	$87	$70
2035	$44	$37	$82	$69
2036	$42	$37	$79	$68
2037	$40	$36	$75	$67
2038	$38	$36	$71	$66
2039	$36	$35	$68	$65
2040	$35	$34	$65	$64
2041	$33	$33	$62	$62
2042	$32	$32	$59	$59

T29	Existing Localities		G-J Elimination	
Year	Net Cone ($M)	Glide Path ($M)	Net Cone ($M)	Glide Path ($M)
2023	$62	$30	$142	$68
2024	$59	$30	$135	$69
2025	$57	$31	$128	$69
2026	$54	$31	$122	$70
2027	$51	$31	$117	$70
2028	$49	$31	$111	$70
2029	$47	$31	$106	$70
2030	$44	$31	$101	$70
2031	$42	$30	$96	$69
2032	$40	$30	$91	$69
2033	$38	$30	$87	$68
2034	$37	$30	$83	$67
2035	$35	$29	$79	$66
2036	$33	$29	$75	$66
2037	$32	$28	$72	$65
2038	$30	$28	$68	$64
2039	$29	$27	$65	$62
2040	$27	$27	$62	$61
2041	$26	$26	$59	$59
2042	$25	$25	$56	$56

Next Steps

- **The NYISO anticipates presenting a revised Addendum to the Management Committee on February 27, 2019.**
  - Comments from the independent Market Monitoring Unit will be available prior to this meeting.
  - The revised Addendum along with comments from the MMU and interested parties will be submitted to the Board for final review and action after the Management Committee meeting.

Next Steps

- **Interested parties may provide additional written comments to the NYISO on the revised Addendum any time prior to March 1, 2019.**
  - Parties submitting comments should indicate whether they agree to posting of their comments on the NYISO website.
  - These comments may be sent to PublicPolicyPlanningMailbox@nyiso.com.

Appendix

Derivation of Transmission Security Floors (2035)

	G-J			H-J		
	Base	T27-T19	T27-T29	Base	T27-T19	T27-T29
Load Forecast (MW)	16,959	16,959	16,959	14,462	14,462	14,462
Transmission Security Import Limit (MW)	3,450	4,725	4,650	5,150	6,150	6,275
Transmission Security UCAP Requirement (MW)	13,509	12,234	12,309	9,312	8,312	8,187
Transmission Security UCAP Requirement (%)	79.7%	72.1%	72.6%	64.4%	57.5%	56.6%
5 Year EFORd (%)	9.55%	9.55%	9.55%	9.63%	9.63%	9.63%
Transmission Security ICAP Requirement (MW)	14,935	13,526	13,609	10,304	9,198	9,059
Transmission Security LCR Floor (%)	88.07%	79.76%	80.24%	71.25%	63.60%	62.64%

	J			K		
	Base	T27-T19	T27-T29	Base	T27-T19	T27-T29
Load Forecast (MW)	12,532	12,532	12,532	5,730	5,730	5,730
Transmission Security Import Limit (MW)	3,200	3,200	3,200	350	350	350
Transmission Security UCAP Requirement (MW)	9,332	9,332	9,332	5,380	5,380	5,380
Transmission Security UCAP Requirement (%)	74.5%	74.5%	74.5%	93.9%	93.9%	93.9%
5 Year EFORd (%)	9.05%	9.05%	9.05%	9.79%	9.79%	9.79%
Transmission Security ICAP Requirement (MW)	10,261	10,261	10,261	5,964	5,964	5,964
Transmission Security LCR Floor (%)	81.88%	81.88%	81.88%	104.08%	104.08%	104.08%

Derivation of Transmission Security Floors (2040)

	G-J			H-J		
	Base	T27-T19	T27-T29	Base	T27-T19	T27-T29
Load Forecast (MW)	17,481	17,481	17,481	14,905	14,905	14,905
Transmission Security Import Limit (MW)	3,450	4,725	4,650	5,150	6,150	6,275
Transmission Security UCAP Requirement (MW)	14,031	12,756	12,831	9,755	8,755	8,630
Transmission Security UCAP Requirement (%)	80.3%	73.0%	73.4%	65.4%	58.7%	57.9%
5 Year EFORd (%)	9.55%	9.55%	9.55%	9.63%	9.63%	9.63%
Transmission Security ICAP Requirement (MW)	15,512	14,103	14,186	10,795	9,688	9,550
Transmission Security LCR Floor (%)	88.74%	80.68%	81.15%	72.42%	65.00%	64.07%

	J			K		
	Base	T27-T19	T27-T29	Base	T27-T19	T27-T29
Load Forecast (MW)	12,921	12,921	12,921	5,899	5,899	5,899
Transmission Security Import Limit (MW)	3,200	3,200	3,200	350	350	350
Transmission Security UCAP Requirement (MW)	9,721	9,721	9,721	5,549	5,549	5,549
Transmission Security UCAP Requirement (%)	75.2%	75.2%	75.2%	94.1%	94.1%	94.1%
5 Year EFORd (%)	9.05%	9.05%	9.05%	9.79%	9.79%	9.79%
Transmission Security ICAP Requirement (MW)	10,688	10,688	10,688	6,151	6,151	6,151
Transmission Security LCR Floor (%)	82.72%	82.72%	82.72%	104.28%	104.28%	104.28%

Questions?

The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefits 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 policy makers, stakeholders and investors in the power system

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