LOCATIONAL MINIMUM INSTALLED CAPACITY REQUIREMENTS STUDY

For the 2019–2020 Capability Year

January 17, 2019

I. Recommendation

This report documents a study conducted by the New York Independent System Operator ("NYISO") to determine Locational Minimum Installed Capacity Requirements ("LCRs") for the Localities of New York City (Load Zone J), Long Island (Load Zone K), and the G-J Locality (Load Zones G, H, I, and J) for the 2019–2020 Capability Year beginning May 1, 2019.

The New York State Reliability Council ("NYSRC") approved the 2019–2020 Installed Reserve Margin ("IRM") at 17.0% on December 7, 2018. The NYISO then determined the LCRs taking into consideration changes that have occurred since the NYSRC approved the IRM base case. The changes include adjusting the IRM from its preliminary value (16.8%) to its approved value (17.0%), the completion of the final 2019 ICAP/LCR load forecast, and the withdrawal of Selkirk 1 and Selkirk 2's Mothball Notice (*i.e.*, continued operation of Selkirk 1 and Selkirk 2).

Based on the NYSRC IRM base case for the 2019–2020 Capability Year and the changes identified above, the NYISO's calculations result in effective New York City LCR of 82.8%, a Long Island LCR of 104.1%, and a G-J Locality LCR of 92.3%.

II. LCR Values

As its starting point, the NYISO LCR study utilized the New York Control Area ("NYCA") IRM study directed by the NYSRC. The IRM study information is available on the NYSRC web site.[1] The final 2019 IRM Study base case maintains the Loss of Load Expectation ("LOLE") criterion at not more than 0.1 days/year with a statewide reserve margin of 17.0% and corresponding preliminary locational requirements of 82.7% and 101.5% for NYC and LI, respectively.

The NYISO follows the Locational Minimum Installed Capacity Requirements Determination Process to develop the LCRs for Zone J, Zone K, and the G-J Locality.[2] Pursuant to that procedure the NYISO adjusts the final IRM Study base case to reflect the final 2019 ICAP/LCR load forecast. This forecast updated the October 2018 load forecast used in the IRM study. The forecast NYCA system peak and Zone K peak decreased by 59.7 MW and 66.5 MW, respectively, while Zone J and the G-J Locality increased by 21.9 MW and 14.5 MW, respectively.

1 http://www.nysrc.org/NYSRC_NYCA_ICR_Reports.html

2 https://www.nyiso.com/documents/20142/1408199/LCR_determination_process.pdf/62be259b-dd63-9e6e-ec6c-334f269b90ff

Area	Final 2019 IRM Study Load Forecast (MW) (10/2018)	Final 2019 ICAP/LCR Load Forecast (MW) (12/2018)	Change (MW)
Zone J (NYC)	11,585.0	11,606.9	+21.9
Zone K (LI)	5,345.6	5,279.1	-66.5
The G-J Locality	15,831.0	15,845.5	+14.5
NYCA	32,488.2	32,428.5	-59.7

Another adjustment the NYISO made to the final IRM Study base case is the Selkirk 1 and Selkirk 2 generating facilities were added in because they withdrew their Notice of Intent to Mothball, while maintaining an IRM of 17.0%.[3]

III. Changes from Previous (1/18/2018) LCR report

On October 5, 2018, FERC accepted proposed revisions to Section 5.11.4 of the NYISO's Market Administration and Control Area Services Tariff ("Services Tariff") that provides the methodology that the NYISO uses for determining LCRs. This methodology utilizes an economic optimization algorithm to minimize the total cost of capacity for the NYCA, taking into account the cost curves established with the results of net Energy and Ancillary Services revenue offset[4] , as shown in the cost curve table below.

[3] As a result of the NYSRC adopting a 17.0% IRM and the NYISO modeling the Selkirk generating facilities in-service for the LCRs the target LOLE was slightly lower than 0.100 days per year. This process is described in the NYISO's "Locational Minimum Installed Capacity Requirements Determination Process" document.

4 The term 'offset' is defined in Section 5.14.1.2.2 of the NYISO Tariff

2019-2020 Capability Year LCRs: Net CONE Curves		
Location	LCR	Net CONE
NYCA	111.5	95.92
	114.5	96.98
	117.5	97.56
	120.5	98.10
	123.5	98.62
G-J	84.0	145.27
	87.0	145.93
	90.0	146.66
	93.0	147.90
	96.0	148.71
Zone J	74.5	169.85
	77.5	173.83
	80.5	178.34
	83.5	180.82
	86.5	182.34
Zone K	96.5	121.26
	99.5	127.06
	102.5	132.36
	105.5	136.07
	108.5	138.21

Under this methodology, the NYSRC's 0.1 days/year LOLE reliability standard will be met while respecting the NYSRC-approved IRM and maintaining capacity requirements greater than or equal to the applicable Transmission Security Limits, as shown in the TSL table below.

Transmission Security Limit Calculation	Formula	G-J	NYC	LI	Source
Load Forecast (MW)	[A] = Given	15845.5	11606.9	5279.1	[1]
Bulk Power Transmission Capability (MW)	[B] = Given	3200.0	3200.0	350.0	[2]
UCAP Requirement (MW)	[C] = [A]-[B]	12645.5	8406.9	4929.1	
UCAP Requirement Floor	[D] = [C]/[A]	79.80%	72.43%	93.37%	
5-Year derating factor	[E] = Given	9.63%	9.67%	9.74%	[3]
ICAP Requirement (MW)	[F] = [C]/(1-[E])	13,993.0	9,306.9	5,461.0	
Transmission Security Limit	[G] = ROUND([F]/[A],1)	**88.3%**	**80.2%**	**103.4%**	

Source:

[1] 2019 Final ICAP Forecast (https://www.nyiso.com/documents/20142/4085420/2019_ICAP_V8_Final.pdf/a03551f6-3a43-6bfd-d671-f1a3f9f54730)

[2] 2019 Transmission Security Limit (TSL) Report (https://www.nyiso.com/documents/20142/3679493/2019-Transmission-Security-Limit-TSL-Report.pdf/ed398aee-675c-19b4-7d7d-bc26b20cae7b)

[3] New York Control Area Installed Capacity Requirement Appendices, Figure A.5

(http://nysrc.org/pdf/MeetingMaterial/ICSMeetingMaterial/ICS%20Agenda%20214/2019%20IRM%20Study%20Appendices%20Clean%20Final%20Draft%2011_27_18[6681].pdf)

IV. Summary of Study

The calculations and analysis in this study utilize the NYISO process for setting the LCRs. With the NYSRC-approved statewide IRM of 17.0%, the NYISO's LCR study examined the effects of the final 2019 ICAP/LCR load forecast and generator re-activations to determine the final LCRs for the three Localities.

Based on the NYSRC's final IRM base case for the 2019–2020 Capability Year and inclusion of ICAP load forecast updates and resource changes identified, the LOLE criterion of 0.1 days/year is met with an LCR of 82.8% for the New York City Locality, an LCR of 104.1% for the Long Island Locality, and an LCR of 92.3% for the G-J Locality. The Transmission Security Limits did not set any of the Locality LCRs.