NEW YORK INDEPENDENT SYSTEM OPERATOR

Roger Clayton, Chairman
Reliability Compliance Monitoring Subcommittee (RCMS)
New York State Reliability Council

March 28, 2019

Subject: Request for information regarding the NYISO's optimized Locational Minimum Installed Capacity Requirement (LCR) process

Dear Mr. Clayton:

Thank you for the RCMS' questions concerning the LCR optimization process.

The objective of the process is to select locational capacity requirements that maintain the adopted IRM, meet the LOLE criterion of 0.100 days/year, respect the Locality Transmission Security Limits, and minimize consumer costs for the procurement of that capacity. While the IRM's tan 45 process sought to create cost equity between upstate and downstate regions of New York, the LCR optimization process uses economic optimization to minimize the cost of locational capacity while meeting reliability criteria and other constraints (e.g., Transmission Security Limits). The 2019 LCR report and the 2019 LCR presentation to the NYISO Operating Committee provide additional context and are attached.

The optimizer is a linear program that minimizes capacity costs based on already determined Cost of New Entry (CONE) curves. These curves show the relationship between the magnitude of the requirement versus the cost in each of the localities. Once a potential total cost solution is achieved in the program, it is tested by running the MARS software at the adopted statewide IRM to determine the resulting LOLE. The least cost solution that satisfies all constraints is selected. Since the program could select LCR requirements that are too low to be feasible from an Operations perspective, floors in the requirements are set to limit this exposure. These floors, called Transmission Security Limits (TSLs), are based on the ability of each locality to import capacity as determined by load flow analysis. The LCR Determination Process and 2019 Transmission Security Limit reports provide additional context and are attached.

The only other assumption changes from the IRM study to the LCR study are those that have previously been described by the LCR process; for your convenience, the 2019 IRM Report and Appendices are attached. They consist of updating the load forecast and incorporating any material changes in generation or transfer capability that occur after the IRM study but before the LCR study and are on the order of 200 MW or greater. A recent presentation to the NYSRC ICS that describes the IRM and LCR alignment process provides additional context and is attached.

Table-1 below shows the results of the IRM technical study results and the adopted IRM and LCRs

Table-1[1]
IRM Versus LCR optimizer results

	IRM	NYC	LI	G-J
FBC IRM Tan 45	16.8%	82.7%	101.5%	98.0%[2]
LCR optimized	17.0%	82.8%	104.1%	92.3%

The NYISO looks forward to discussing your questions at the April 4, 2019 RCMS meeting.

Sincerely,

Joshua Boles
Senior Manager, ICAP Market Operations
New York Independent System Operator, Inc.

Attachment 1: 2019 LCR Report (LCR2019-Report-2-clean.pdf)
Attachment 2: 2019 LCR presentation (04-OperatingCommittee-LCRs-2019-Presentation.pdf)
Attachment 3: LCR Determination Process (LCR-determination-process.pdf)
Attachment 4: 2019 TSL Report (2019-Transmission-Security-Limit-TSL-Report.pdf)
Attachment 5: 2019 IRM Report (2019 IRM Study Body-Final Report.pdf)
Attachment 6: 2019 IRM Appendices (2019 IRM Study Appendices –Final Report.pdf)
Attachment 7: IRM Alignment Process (AI 5 - Appendix C Alignment report.pdf)

[1] FBC IRM and indicative LCRs were based on the IRM Final Base Case, while the optimized LCRs were based on the LCR case. These two cases differ in that the LCR case uses the December ICAP Load forecast, includes Selkirk in the case, solves to an LOLE slightly below 0.100 to reflect the adoption of a 17.0% IRM which is 0.2 % higher than the technical study results of 16.8%.

[2] This estimate of the G-J locality margin was provided verbally to the ICS when the tan 45 results were discussed.