

**STATE OF NEW YORK
PUBLIC SERVICE COMMISSION**

**Case 07-E-0088 - In the Matter of the Adoption)
Of an Installed Reserve Margin for the New York)
Control Area.)**

**COMMENTS OF THE NEW YORK STATE RELIABILITY COUNCIL
ON THE INSTALLED RESERVE MARGIN
FOR THE 2019-2020 CAPABILITY YEAR**

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Chairman
NYSRC Executive Committee
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Council**

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COMMENTS OF THE New York STATE RELIABILITY COUNCIL

New York State Reliability Council, LLC (“NYSRC”), through the Chairman of its Executive Committee, respectfully submits these Comments in Case 07-E-0088. The New York State Public Service Commission (“Commission”) has solicited comments on whether the Commission should adopt the NYSRC’s Installed Reserve Margin (“IRM”) of 17.0% for the New York Control Area (“NYCA”) for the Capability Year beginning on May 1, 2019 and ending on April 30, 2020. The NYSRC respectfully requests that the Commission consider these comments in support of the Commission’s adoption of NYSRC’s IRM determination for the 2019-2020 Capability Year.

I. SUMMARY

On December 7, 2018, the NYSRC Executive Committee adopted an IRM of 18.0% for the NYCA for the Capability Year beginning on May 1, 2019 and ending April 30, 2020. The Executive Committee’s decision was based on a technical study, the New York Control Area Installed Capacity Requirements for the Period May 2019 through April 2020, Technical Study Report (“2019 IRM Study” or “Study”) and other relevant factors. The 2019 IRM Study and Study Appendices are attached to these comments as Exhibits 1 and 2. The NYSRC requests that the 2019 IRM Study and Study Appendices be made part of the record in this proceeding. Since the 17.0% IRM for the 2019-2020 Capability Year adopted by the NYSRC represents a change from the 2018-2019 IRM of 18.2%, the NYSRC is required to

obtain Federal Energy Regulatory Commission (“FERC”) approval of the revised IRM, pursuant to Section 3.03 of the NYSRC Agreement.¹ The NYSRC submitted a filing with FERC on December 21, 2018.²

II. BACKGROUND

Formation and Responsibilities of the NYSRC

The NYSRC was approved by FERC in 1998 as part of the comprehensive restructuring of the wholesale electricity market in New York State.³ Under the restructuring, the New York Power Pool (“NYPP”) was replaced by the New York System Independent System Operator (“NYISO”) as the entity with the primary responsibility for the reliable operation of the state’s bulk power system. The NYISO also assumed responsibility for administration of the newly established competitive wholesale electricity markets.

The NYSRC was established to promote and preserve the reliability of the New York State power system by developing, maintaining and, from time to time, updating the reliability rules (“Reliability Rules”)⁴ that govern the NYISO’s operation of the state’s bulk power system. The NYSRC develops Reliability Rules in accordance with standards, criteria and regulations of North American Reliability Corporation (“NERC”), Northeast Power Coordinating Council (“NPCC”), FERC, the Commission, and the Nuclear Regulatory Commission.⁵ The NYISO/NYSRC Agreement provides that the NYISO and all entities engaged in transactions on the New York State power system must comply with the Reliability

¹ The NYSRC Agreement is available on the NYSRC website, www.NYSRC.org, under Documents/Agreements.

² New York State Reliability Council, Docket No. ER 17-613-000 (December 20, 2016).

³ Central Hudson Gas & Electric Corp., et al., 83 FERC ¶ 61,352 (1998).

⁴ The NYSRC Reliability Rules are available on the NYSRC website, www.NYSRC.org, under Documents/Reliability Rules Compliance Monitoring.

⁵ NYISO/NYSRC Agreement, Section 4.1. The NYISO/NYSRC Agreement is available on the NYSRC website, www.NYSRC.org, under Documents/Agreements.

Rules adopted by the NYSRC.⁶ Compliance with NYSRC Reliability Rules, which are incorporated into the NYISO's procedures, are made binding on market participants through the NYISO's tariff.⁷ The NYISO/NYSRC Agreement also assigns to the NYSRC the responsibility to monitor the NYISO's compliance with the Reliability Rules and requires the NYISO to provide the NYSRC the data necessary for it to effectively perform its compliance monitoring responsibility.⁸ Each member of the NYSRC Executive Committee is required to have substantial knowledge and/or expertise in the reliable operation of bulk power electric systems.⁹

At its inception, the NYSRC adopted the pre-existing NYPP reliability rules. These planning and operating rules had been developed by the NYPP and the Commission based on decades of experience in the operation of the New York bulk power system. Revisions to the Reliability Rules are developed by the NYSRC in an open process with direct participation by the NYISO and Department of Public Service staff. If the NYSRC and the NYISO should disagree with respect to a new or modified Reliability Rule, and cannot resolve their differences, the matter is referred to the Commission for resolution, unless the dispute affects not only reliability but also matters subject to FERC's jurisdiction that must be resolved directly by FERC.¹⁰

In addition to consistency with NERC and NPCC reliability criteria, the NYSRC Reliability Rules include criteria that are more specific or more stringent than NERC and NPCC criteria that are necessary to meet the special requirements of the NYCA. These special requirements include the specific electric system characteristics and demographics of New York

⁶ NYISO/NYSRC Agreement, Section 2.1, 3.1.

⁷ NYISO Market Services Tariff, Sections 5.1, 5.6.

⁸ NYISO/NYSRC Agreement, Section 3.6.

⁹ NYSRC Agreement, Section 4.03.

¹⁰ NYISO/NYSRC Agreement, Article 5.

State, the complexities related to the maintenance of reliable transmission in New York State given the configuration of the state's bulk power system, and the severe consequences that result from power interruptions in New York State and, in particular, New York City and Long Island.

PSC Support for NYSRC

As noted, the NYSRC was formed as an integral part of the restructuring of the electricity industry in New York State. It was formed, with the active support of the Commission, to ensure that the more stringent and mandatory reliability standards in New York State would be retained under the new competitive wholesale market structure. In its Supplemental Comments in the FERC proceeding in which the NYSRC Agreement and the NYISO/NYSRC Agreement were approved, the Commission stated:

PSCNY conditioned its support for the State Reliability Council upon amendments that would broaden the governance of the [NY]SRC to include more non-utility board members, and to narrow the responsibilities of the [NY]SRC. The Supplemental Filing appropriately circumscribes the authority of the SRC. As stated by the utilities, the [NY]SRC would be limited to establishing reliability rules that tailor the national North American Reliability Electric Reliability Council ("NERC") and regional Northeast Power Coordinating Council ("NPCC") standards to New York State. Consistent with NERC, NPCC, NYPP and NYPPSC standards, the [NY]SRC would establish a state-wide reserve margin to ensure that adequate generation is available to serve load during normal conditions and system emergencies.

* * *

As proposed, the ISO would implement and enforce the reliability rules, not the [NY]SRC. Moreover, the ISO alone would apply the state-wide resource requirement to set the actual generation resource levels suppliers must meet on different parts of the state grid.¹¹

¹¹ Supplemental Comments, State of New York Department of Public Service, Docket Nos. ER 97-1523, et al, (filed May 23, 1997), at 2.

NYSRC Establishment of Statewide IRM

One of the most important responsibilities assigned to the NYSRC is the establishment of the annual statewide installed capacity for the NYCA.¹² Section 3.03 of the NYSRC Agreement, Installed and Operating Capacity Requirements, states as follows:

The NYSRC shall establish the state-wide annual installed capacity requirements for New York State consistent with NERC and NPCC standards. The NYSRC will initially adopt the installed capacity requirement as set forth in the current NYPP Agreement and currently filed with FERC. Any changes to this requirement will require an appropriate filing and FERC approval. In establishing the state-wide annual installed capacity requirements, consideration will be given to the configuration of the system, generation outage rates, assistance from neighboring systems and Local Reliability Rules.

The installed capacity requirement is described generally in terms of an installed reserve margin or IRM.¹³ The NYISO was assigned the responsibility to determine the installed capacity obligations of load serving entities (“LSEs”) and to establish locational capacity requirements needed to ensure that the statewide IRM is met.¹⁴ The responsibilities assigned by the NYSRC Agreement and the NYISO/NYSRC Agreement are implemented in the NYSRC’s Reliability Rules, the NYSRC’s Policy No. 5-13 and the NYISO’s Market Administration and Control Area Services Tariff (“Market Services Tariff”). The following is a brief description of the relevant portions of those documents.

¹² NYSRC Agreement, § 3.03; NYISO/NYSRC Agreement, § 4.5.

¹³ The annual statewide ICR is established by implementing Reliability Rules for providing the corresponding statewide installed reserve margin (“IRM”) requirements. The IRM requirements relates to ICR through the following equation: $ICR = (1 + IRM \% / 100) \times \text{Forecasted NYCA Peak Load}$ (NYSRC Reliability Rules, A. Resource Adequacy, Introduction).

¹⁴ NYISO/NYSRC Agreement, § 3.4; NYISO Market Services Tariff, §§ 5.10 and 5.11.4.

NYSRC Resource Adequacy Criteria

The Introduction to Section A of the NYSRC Reliability Rules, Resource Adequacy, provides that among the factors to be considered by the NYSRC in setting the annual statewide IRM are the characteristics of the loads, uncertainty in the load forecast, outages and deratings of generating units, the effects of interconnections to other control areas, and transfer capabilities within the NYCA.

Reliability Rule A.1, Establishing NYCA Installed Reserve Margin Requirements, provides as follows:

The NYSRC shall establish the IRM requirement for the NYCA such that the probability (or risk) of disconnecting any firm load due to resource deficiencies shall be, on average, not more than once in ten years. Compliance with this criterion shall be evaluated probabilistically, such that the loss of load expectation (LOLE) of disconnecting firm load due to resource deficiencies shall be on average, no more than 0.1 day per year. This evaluation shall make due allowance for demand uncertainty, scheduled outages and deratings, forced outages and deratings, assistance over interconnections with neighboring control areas, NYS Transmission System emergency transfer capability and capacity and/or load relief from available operating procedures.

Requirement R1 of Reliability Rule A.2, Establishing Load Serving Entity Installed Capacity Requirements and Deliverable Area Installed Capacity, provides that:

LSEs shall be required to procure sufficient resource capacity for the entire NYISO defined obligation procurement period so as to meet the statewide IRM requirement determined from A.1. Further, this LSE capacity obligation shall be distributed so as to meet locational ICAP requirements, considering the availability and capability of the NYS Transmission System to maintain A.1 reliability requirements.

NYSRC Policy No. 5-13 Procedure for Establishing New York Control Area Installed Capacity Requirements

The last paragraph of Section 1.0, Introduction, of NYSRC Policy No. 5-13 provides that:

The final NYCA IRM requirement, as approved by the NYSRC Executive Committee, is the basis for various installed capacity analyses conducted by the NYISO. These NYISO analyses include the determination of the capacity obligation of each Load Serving Entity (LSE) on a Transmission District basis, as well as Locational Installed Capacity Requirements, for the following capability year. These NYISO analyses are conducted in accordance with NYSRC Reliability Rules and Procedures.

Section 2.2 of NYSRC Policy No. 5-13 provides a timeline for establishing the statewide IRM. This timeline is based on the NYSRC's providing the NYISO with the following year's NYCA IRM requirement in December of each year, when the NYISO, under its installed capacity and procurement process, is required to begin its studies for determining the following summer's LSE capacity obligations.

Section 4.4 of NYSRC Policy No. 5-13 sets forth the process for approval of the annual statewide IRM by the NYSRC Executive Committee.

- Review and approve preliminary and final base case assumptions and models for use in IRM Study.
- Review preliminary base case results.
- Approve sensitivity studies to be run and their results.
- Review and approve final IRM Study prepared by ICS [Installed Capacity Subcommittee].
- Establish and approve the final NYCA IRM requirement for the next capability year (See Section 5).
- To the extent practicable, ensure that the schedule for the above approvals allow that the timeline requirements in Section 2.2 are met.
- Notify the NYISO of the NYCA IRM requirements and meet with NYISO management as required to review IRM Study results.
- Make IRM requirement study results available to state and federal regulatory agencies and to the general public by posting the study on the NYSRC Web site.

NYISO Market Services Tariff

Relevant portions of Section 5.10 of the NYISO's Market Services Tariff, NYCA

Minimum Installed Capacity Requirement, read as follows:

The NYCA Minimum Installed Capacity Requirement is derived from the NYCA Installed Reserve Margin, which is established each year by the NYSRC. The NYCA Minimum Installed Capacity Requirement for the Capability Year beginning each May 1 will be established by multiplying the NYCA peak Load forecasted by the ISO by the quantity of one plus the NYCA Installed Reserve Margin. The ISO shall translate the NYCA Installed Reserve Margin, and thus the NYCA Minimum Installed Capacity Requirement, into a NYCA Minimum Unforced Capacity Requirement.

* * *

The NYCA Minimum Unforced Capacity Requirement represents a minimum level of Unforced Capacity that must be secured by LSEs in NYCA for each Obligation Procurement Period. Under the provisions of this Services Tariff and the ISO Procedures, each LSE will be obligated to procure its LSE Unforced Capacity Obligation.

The first paragraph of Section 5.11.4 of the Market Services Tariff, LSE

Locational Minimum Installed Capacity Requirements, reads as follows:

The ISO will determine the Locational Minimum Installed Capacity Requirements, stated as a percentage of the Locality's forecasted Capability Year peak Load and expressed in Unforced Capacity terms, that shall be uniformly applicable to each LSE serving Load within a Locality. In establishing Locational Minimum Installed Capacity Requirements, the ISO will take into account all relevant considerations, including the total NYCA Minimum Installed Capacity Requirement, the NYS Power System transmission Interface Transfer Capability, the election by the holder of rights to UDRs that can provide Capacity from an External Control Area with a capability year start date that is different from the corresponding ISO Capability Year start date ("dissimilar capability year"), the Reliability Rules and any other FERC-approved Locational Minimum Installed Capacity Requirements.

III. Adoption of the IRM For 2019-2020 Capability Year

2019 IRM Study

The 2019 IRM Study was conducted by the NYSRC to determine the statewide IRM necessary to meet NYSRC and NPCC criteria within the NYCA during the period from May 1, 2019 through April 30, 2020. Computer runs for the 2019 IRM Study were performed by NYISO staff at the request and under the guidance of the NYSRC. The 2019 IRM Study uses a state-of-the-art computer model called the General Electric Multi-Area Reliability Simulation Program (“GE-MARS”). The GE-MARS model includes a detailed load, generation and transmission representation of the 11 NYCA zones as well as the four external control areas (“Outside World Areas”) interconnected to the NYCA. The GE-MARS model calculates the probability of outages of generating units, coupled with a model of daily peak-hour loads, thus determining the number of days per year of expected capacity shortages. The resulting measure, termed the “loss-of-load expectation” (“LOLE”) index, provides a measure of system reliability. This technique is commonly used in the electric power industry for determining installed reserve requirements.

This 2019 IRM Study employs two study methodologies, the *Unified* and the *IRM Anchoring Methodologies*. These methodologies are discussed in the Study at pages 6 and 7 under the heading IRM Study Procedures. In addition to calculating NYCA IRM requirement, these methodologies identify corresponding locational capacity requirements (“LCRs”). In its role of setting the appropriate LCRs, the NYISO considers the LCR’s identified in the IRM Study. The 2019 IRM Study uses the NYISO’s preliminary peak load forecast for the following summer period based on the most recent actual summer load conditions. Use of this forecast allows the NYSRC IRM and NYISO LCR studies to use comparable data.

The 2019 IRM Study also evaluated IRM requirement impacts caused by the updating of key study assumptions and various sensitivity cases.¹⁵ The results of the comparison with the IRM for the 2019-2020 Capability Year are depicted in Table 6-1 at page 21 of the Study. The results of the sensitivity cases are depicted in Table 7-1 at page 23 of the Study, and Table B-1 at pages 46 and 47 in Appendix B of the Study. The base case results, the sensitivity cases, and other relevant factors provide the basis for the NYSRC Executive Committee's determination to adopt an 17.0% NYCA IRM requirement for the 2019-2020 Capability Year. Definitions of certain terms in the 2019 IRM Study can be found in the Glossary, Appendix D of the Study.

2019 IRM Study Base Case Results

The base case for 2019 IRM Study calculated the NYCA IRM requirement for the period May 1, 2019 through April 30, 2020 to be 16.8%.¹⁶ For the base case, the 2019 IRM Study also determined LCRs of 82.7% and 101.5% for New York City and Long Island, respectively.

The results of this 2019 IRM Study show that the base case IRM result represents a 1.4% decrease from the 2018 IRM Study base case value. Table 6-1 compares the estimated IRM impacts of updating several key study assumptions and revising models from those used in the 2018 IRM Study. The estimated percent IRM change for each parameter was calculated from the results of a parametric analysis in which a series of IRM studies were conducted to test the IRM impact of individual parameters. The IRM impact of each parameter in this analysis was

¹⁵ The NYSRC Executive Committee approved the assumptions used in the 2019 IRM Study base case at its meeting on July 13, 2018 and approved revised assumptions on October 12, 2018. The sensitivity cases for the 2019 IRM Study were approved by the NYSRC Executive Committee at its meeting on December 7, 2018. The assumptions used in the Study are set forth in Table A.3 in Appendix A on page 10, , Table A.5 on page 12, Table A.7 on page 18, Table A.9 on page 34, and Table A.11 on page 35.

¹⁶ There is a 95% probability that the base case result is within a range of from 16.6% to 17.0% based on a standard error of 0.025 per unit. See Appendix A of the Study, A-1.1 Error Analysis, at page 8.

normalized such that the net sum of the +/- % parameter changes total the 1.4% IRM decrease from the 2018 IRM Study. Table 6-1 also provides the reason for the IRM change for each study parameter from the 2018 IRM Study.

There are three parameter drivers that in combination *increased* the 2019 IRM from the 2018 base case by 0.7%. Of these three drivers, the principal driver is the addition of new wind generation with a total capacity of 158 MW and an updated wind shape model, which increased the IRM by 0.4%.

Ten parameter drivers in combination *decreased* the IRM from the 2018 base case by 2.1%. The largest decreases of 0.4% each are attributed to an updated load forecast and load shapes and a reduction in generation fleet outage rates.

The parameters in Table 6-1 are discussed under *Models and Key Input Assumptions*.

Table 6-1: Parametric IRM Impact Comparison– 2018 IRM Study vs. 2019 IRM Study

Parameter	Estimated IRM Change (%)	IRM (%)	Reasons for IRM Changes
2018 IRM Study – Final Base Case		18.2	
2019 IRM Study Parameters that increased the IRM			
Wind Units and Shapes for 2013-2017	+0.4		Two new wind units with lower than fleet average availability
Updated SCRs	+0.2		Decreased performance and Increased enrollment
NYCA Topology	+0.1		Cumulative effect of topology changes outside of the removal of the B and C lines (see below)
Total IRM Increase	+0.7		
2019 IRM Study Parameters that decreased the IRM			
Updated 2019 Load Forecast & Load Shapes	-0.4		Lower load forecasts especially downstate
Generator Transition Rates (EFORDs) for 2013-2017	-0.4		Improved historic availability
LIPA Cable Transition Rates for 2013-2017	-0.3		Historical performance including the phasing out of a major outage on the Neptune line
Updated non SCR/EDRP EOPs	-0.3		Increase in 5% Voltage Reduction and voluntary load relief
Removal of B & C lines	-0.2		Causes increase in LCRs and slight lowering of IRM
Change Study Year	-0.1		Misalignment of renewable & load shapes
MARS 3.22.6	-0.1		Long term fix of seeding order issue
Use NYBA for LOLE criteria	-0.1		Removal of dummy zones from LOLE calc.
New Thermal Units & Rerates	-0.1		Lower EFORDs on new & incremental units
Run of River Hydro Shapes for 2013-2017	-0.1		Dramatic increase in hydrological conditions for 2017
Run of River Hydro Shapes for 2013-2017	-0.1		Dramatic increase in hydrological conditions for 2017
Total IRM Decrease	-2.1		
2019 IRM Study Parameters that did not change the IRM			
NYPA Sales 2019	0		
2018 Gold Book DMNC	0		
Maintenance 2019	0		
Con Ed Transition Rates (2013-2017)	0		
Net Change from 2018 Study			
		-1.4	
2019 IRM Study – Final Base Case		16.8	

After considering the 2019 IRM Study results, the modeling and assumption changes made to simulate actual operating conditions and system performances, the numerous sensitivities evaluated, and based on its experience and expertise, on December 7, 2018 the NYSRC Executive Committee adopted an 17.0% IRM for the 2019-2020 Capability Year. The NYSRC resolution adopting the IRM is attached to these comments as Exhibit 3.

IV. CONCLUSION

Each year since its inception, the NYSRC has established a statewide annual IRM requirement that has been implemented by the NYISO. The IRM established by the NYSRC is used by the NYISO to establish installed capacity requirements for load serving entities in the NYCA, including LCRs. The IRM is a necessary component of the NYISO's installed capacity auctions. The NYISO installed capacity auction for the summer Capability Period is scheduled for March 28, 2019. The IRM also is used to establish installed capacity prices under the NYISO installed capacity demand curves. Given the importance of the IRM to the NYISO, load serving entities, and other NYISO market participants, it is crucial that there be no ambiguity concerning its level and effectiveness. The 2019 IRM Study is a very thorough and professional analysis and provides a very sound basis for the Commission's adoption of the IRM determined by the NYSRC for the 2019-2020 Capability Year.

In its order issued in the proceeding concerning the IRM for the 2018-2019 Capability Year, the Commission stated that "Given its NYSRC's experience and expertise in developing the IRM, the Commission gives considerable weight to its findings, conclusions and recommendations."¹⁷ It also should be noted that the Commission has regularly adopted the NYSRC's Reliability Rules as state requirements. It is respectfully submitted that the NYSRC's

¹⁷ Commission Order Adopting Installed Reserve Margin for the New York Control Area for the 2018-2019 Capability Year, Case 07-E-0088, Case 05-E-1180, March 6, 2018, at page 9 .

IRM policies and procedures and the 2019 IRM Study warrant the Commission's continued confidence and support.

The NYSRC respectfully recommends, therefore, that the Commission adopt the NYSRC's determination that a 17.0% IRM is the appropriate IRM for the New York Control Area for the Capability Year of May 1, 2019 to April 30, 2020.

EXHIBIT 1

2019 IRM REPORT

EXHIBIT 2

2019 IRM REPORT APPENDICES

EXHIBIT 3

NYSRC RESOLUTION ADOPTING

THE IRM FOR THE 2019-2020 CAPABILITY YEAR