NPCC 2020 2nd (of 2) Interim New York Area Review of Resource Adequacy

Covering the New York Control Area for the Study Period 2021 – 2023

Final

Approved by the RCC – December 1, 2020 Prepared by the NYISO for the NPCC

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Executive Summary

The New York Independent System Operator (NYISO) conducts an annual Area Review of Resource Adequacy of New York's Bulk Power System (BPS) as required by the Northeast Power Coordinating Council (NPCC). As described in the NPCC's Directory 1, a Comprehensive Review of Resource Adequacy is required every three years and analyzes a time period of five years. In the two interim years between comprehensive reviews, each Planning Coordinator conducts an Annual Interim Review of Resource Adequacy that will cover, at a minimum, the remaining years of the five-year period studied in the Comprehensive Review of Resource Adequacy.

The purpose of this assessment is to demonstrate conformance with the applicable NPCC resource adequacy planning requirements.

The 2018 Comprehensive Review of Resource Adequacy (2018 Comprehensive Review) covered the five-year study period of 2019-2023. This 2020 Interim Review of Resource Adequacy (2020 Interim Review) report provides the second Interim Assessment of the NYISO's 2018 Comprehensive Review covering the remaining three years of the study period, *i.e.*, from 2021-2023.

This report demonstrates that New York will meet the NPCC resource adequacy criterion that the probability of an unplanned disconnection of firm load due to resource deficiencies (*i.e.,* Loss of Load Expectation, LOLE) shall be, on average, no more than one occurrence in ten years (0.1 days per year) for the baseline system covering the study period from 2021 to 2023.

1. Introduction

The 2020 Interim Review provides the second (of two) update of the 2018 Comprehensive Review, which was based on NYISO's 2018 Reliability Needs Assessment (RNA) assumptions (such as information from the 2018 Gold Book) and was approved by NPCC in December 4, 2018. Since the approval of the 2018 NPCC Comprehensive Review, the NYISO has conducted additional resource adequacy assessments as part of the 2018-2019, and also of the current 2020-2021, Reliability Planning Process (RPP). The NYISO has also conducted annual studies to determine the Installed Capacity Requirements¹ for New York. The major assumptions of this 2020 Interim Review are consistent with the 2020-2021 RPP process² and the 2020 planning models.

¹ <u>http://www.nysrc.org/reports3.html</u>

² <u>https://www.nyiso.com/library</u>

2. Assumption Changes

2.1. Load Model

Figure 1 and Figure 3 compare the baseline and high load (topline) peak demand forecasts from the 2018 Comprehensive Review with the 2020 Load and Capacity Data Report (2020 Gold Book³) for this Interim Review.

Figure 2 details the amounts of energy efficiency and codes and standards (EE), Behind-the-Meter (BtM) Solar Photovoltaic (Solar PV), BtM energy storage, electric vehicles, and BtM non-solar Distributed Generation (DG) represented in the baseline forecast at the time of summer peak demand.

The 2020 Gold Book baseline forecast reflects the expected impacts of energy efficiency, distributed energy resources, and behind-the-meter solar PV on annual energy use and peak loads. The high load scenario forecast reflects faster adoption of electric vehicles and other electrification, and slower adoption of behind-the-meter solar PV and energy efficiency measures.

The baseline peak load forecast represents an annual average growth rate of -0.09% over the horizon of the Gold Book's ten-year forecast. This compares to a growth rate of -0.13% from the rate of growth reported in the 2018 Comprehensive Review. There were no changes to the multiple load shape models from the 2018 Comprehensive Review. The NYISO used the same historical years (2002, 2006, and 2007), scaled up to forecasted seasonal peaks from the 2020 Gold Book, with Load Forecast Uncertainty (LFU) applied equally to all hours.

The BtM Solar PV forecast is discretely modeled with an hourly production data by zone, and the hourly shapes are applied during the load adjustment to account for the impact of the BtM generation on both on-peak and off-peak hours.

³ https://www.nyiso.com/documents/20142/2226333/2020-Gold-Book-Final-Public.pdf

	Baseline Fore		
Year	2018 Comprehensive Review	2020 Interim Review	Delta
2021	32,451	32,129	-322
2022	32,339	32,128	-211
2023	32,284	31,918	-366

Figure 1: Comparison of Baseline Summer Peak Demand Forecasts

Figure 2: Energy Efficiency, BtM Solar, Distributed Generation and Energy Storage Summer Peak Reductions along with Electric Vehicle Summer Peak Usage reflected in the Baseline Forecast

Year	Values included in Baseline Forecast (MW Values at the time of Peak Demand)				
Tear	Energy Efficiency	BTM Solar PV	Distributed Generation	Electric Vehicle	Energy Storage
2021	591	707	251	68	14
2022	943	841	189	103	26
2023	1,322	986	169	147	44

Figure 3: Comparison of High Load (Topline) Summer Peak Demand Forecasts

	High Load Fo		
Year	2018 Comprehensive Review	2020 Interim Review	Delta
2021	34,554	32,502	-2,052
2022	34,727	32,743	-1,984
2023	34,946	32,611	-2,335

Year	2020 Interim Review (MW)		Delta
rear	Baseline	High Load	(High-Base)
2021	32,129	32,502	373
2022	32,128	32,743	615
2023	31,918	32,611	693

*2018 Gold Book High Load forecast was baseline load with medium EE and medium BtM added back. 2020 Gold Book High Load forecast was baseline load with lower EE, lower BtM and higher non-EV electrification added back.

2.2. Resources

For this review, resource assumptions are based upon the 2020 summer capability ratings of generation resources in the New York as reported in the 2020 Gold Book. Capacity values in Figure 4 include resources electrically internal to New York, additions, re-ratings, retirements, purchases, sales, UCAP Deliverability Rights (UDRs) with firm capacity, and SCRs (Special Case Resources).

The 2020 Interim Review assumes 3,522 MW (summer capability) of generation deactivations (*e.g.*, retired, mothballed, or in an ICAP-Ineligible Forced Outage (IIFO), or proposed to retire or

mothball), as compared with 3,650 MW assumed for the 2018 Comprehensive Review. This Interim list of deactivations include 1,027 MW Indian Point Unit 2 deactivated on April 30, 2020 and 1,040 MW Indian Point 3 that NYISO anticipates to deactivate by April 30, 2021. An additional 1,626 MW⁴ (out of which 970 MW are impacted starting in year 2023 and the rest starting in 2025) are operationally impacted (as noted in Figure 7 below) by the DEC peaker rule.⁵

A total of 668 MW of proposed wind and solar generation, was added over the study period. The 680 MW CPV Valley and the 1,020 MW Cricket Valley projects are in-service.

The NYSRC annually sets the Installed Reliability Margin (IRM) for the New York Control Area (NYCA) for the upcoming capability year. The current IRM⁶ is set at 18.9% of the forecasted NYCA peak load for the 2020 – 2021 Capability Year (May 1, 2020 through April 30, 2021). The IRM meets NPCC's and NYSRC's resource adequacy criterion to plan for a Loss of Load Expectation ("LOLE") of no greater than 0.1 days/year.

Additionally, the NYISO sets the Locational Minimum Installed Capacity Requirements (LCRs) for three New York Localities. The LCRs for the 2020–2021 Capability Year are: 86.6% for the New York City Locality, 103.4% for the Long Island Locality, and 90.0% for the G-J Locality.

	Capacity Res	ources (MW)*	
Year	2018 Comprehensive Review	2020 Interim Review	Delta
2021	41,358	40,429	-929
2022	41,500	41,001	-500
2023	41,500	40,231	-1,269

Figure 4: Comparison of Total Resource Assumptions (Summer MW Ratings)

*Projected resources includes NYCA Capacity, net purchases and sales from the 2018 Gold Book and 2020 Gold Book, respectively, and SCR. NYCA Capacity values are resources electrically internal to the NYCA, additions, re-ratings, and retirements (including proposed retirements and mothballs). Capacity values reflect the lesser of CRIS and DMNC values.

⁴ Some of the units will be out of service during ozone season only

⁵ In 2020, the New York State Department of Environmental Conservation adopted a regulation to limit nitrogen oxides (NOx) emissions from simple-cycle combustion turbines ("Peaking Units") (referred to as the "Peaker Rule"). The Peaker Rule required all impacted plant owners to file compliance plans by March 2, 2020. NYISO considered the affected Generators' compliance plans in the development of the 2020 Reliability Needs Assessment Base Case, on which this Interim is also based.

⁶ All values in the IRM calculation are based upon full installed capacity values of resources.

Queue #	Project Name	Zone	CRIS	Interconnection	2020 RNA
			Request	Status	COD
Proposed	I Generation Additions				
387	Cassadaga Wind	А	126.0	CY17	12/2021
396	Baron Winds	С	238.4	CY17	12/2021
422	Eight Point Wind Energy Center	В	101.2	CY17	12/2021
505	Ball Hill Wind	А	100.0	CY17	12/2022
546	Roaring Brook Wind	E	79.7	CY19	12/2021
678	Calverton Solar Energy Center	K	22.9	CY19	12/2021
	Total MW additions		668.2		

Figure 5: Generation Additions Assumed in the NYISO's 2020 RNA Case and 2020 Interim Review

2020 GB Table	Owner/ Operator	Plant Name	Zone	CRIS
	International Paper Company	Ticonderoga	F	7.6
	Helix Ravenswood, LLC	Ravenswood 09	J	21.7
	Binghamton BOP, LLC	Binghamton	С	43.8
	Helix Ravenswood, LLC	Ravenswood 2-1	J	40.4
		Ravenswood 2-2	J	37.6
Table IV-3: Deactivated Units with		Ravenswood 2-3	J	39.2
Unexpired CRIS Rights Not Listed in Existing Capacity Table III-2		Ravenswood 2-4	J	39.8
		Ravenswood 3-1	J	40.5
		Ravenswood 3-2	J	38.1
		Ravenswood 3-4	J	35.8
	Cayuga Operating Company, LLC	Cayuga 2	С	154.7
	Lyonsdale Biomass, LLC	Lyonsdale	E	20.2
	Exelon Generation Company LLC	Monroe Livingston	В	2.4
	Innovative Energy Systems, Inc.	Steuben County LF	С	3.2
Table IV-4: Deactivated Units Listed	Consolidated Edison Co. of NY, Inc	Hudson Ave 4	J	13.9
in Existing Capacity Table III-2	New York State Elec. & Gas Corp.	Auburn - State St	С	5.8
	Cayuga Operating Company, LLC	Cayuga 1	С	154.1
	Consolidated Edison Co. of NY, Inc	Hudson Ave 3	J	16.0
Table IV-5: Notices of Proposed Deactivations as of March 15,	Albany Energy, LLC	Albany LFGE	F	4.5
	Somerset Operating Company, LLC	Somerset	A	686.5
	National Grid	West Babylon 4	К	49.0
2020	Entergy Nuclear Power Marketing, LLC	Indian Point 2	Н	1,026.5
		Indian Point 3		1,040.4
	Total	2020 RNA MW assumed as dead	ctivated**	3,522

Figure 6: Generation Deactivations Assumed in the NYISO's 2020 Planning Case and 2020 Interim Review

*Consistent with deactivation dates

** Does not include peaker retirements

Figure 7: Peaker Rule Compliance

2020 GB Table	Owner/ Operator	Plant Name	Zone	CRIS
	Central Hudson Gas & Elec. Corp.	Coxsackie GT ¹	G	19.9
		South Cairo ¹	G	19.8
	Consolidated Edison Co. of NY, Inc.	74 St. GT 1 & 2 ¹	J	39.1
		Hudson Ave 5 ¹] [15.1
		59 St. GT 1		15.4
	Helix Ravenswood, LLC	Ravenswood 01 ¹	J	8.8
		Ravenswood 10 ¹		21.2
		Ravenswood 11 ¹		20.2
	National Grid	Glenwood GT 1 ¹	К	14.6
Table IV/ & Drangood Stave Change		Northport GT ¹		13.8
Table IV-6: Proposed Staus Change to Comply with DEC Peaker Rule		Port Jefferson GT 01 ¹		14.1
	NRG Power Marketing, LLC	Astoria GT 2-1, 2-2, 2-3, 2-4 ¹	J	165.8
		Astoria GT 3-1, 3-2, 3-3, 3-4 ¹		170.7
		Astoria GT 4-1, 4-2, 4-3, 4-4 ¹		167.9
		Arthur Kill GT1		16.5
	Astoria Generating Company, L.P.	Gowanus 1-1 through 1-8 ^{1, 2}	J	138.7
		Gowanus 4-1 through 4-8 ^{1, 2}		140.1
		Astoria GT 01 ²] [15.7
		Gowanus 2-1 through 2-8 ²] [152.8
		Gowanus 3-1 through 3-8 ²] [146.8
		Narrows 1-1 through 2-8 ²		309.1
	Additional tota	al 2020 RNA MW assumed out	of service	1,626

change in status

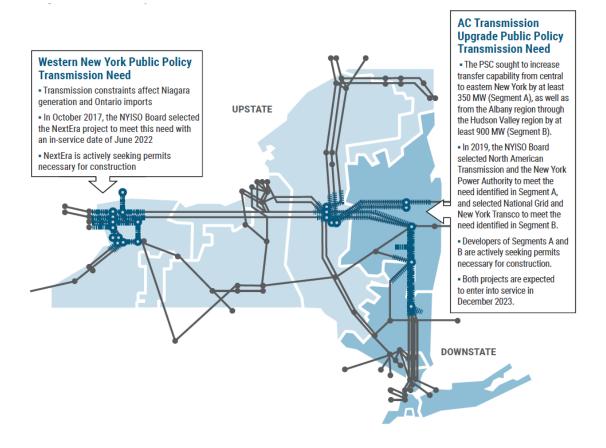
¹These units' status are proposed to be effective starting in 2023; all others are proposed to be effective starting in 2025. ² Units will be out of service in the summer ozone season only.

2.3. Transmission

Highlights of changes since the 2018 NPCC Comprehensive Review:

- On April, 2019, the NYISO Board of Directors announced its selection of two transmission projects with an in-service date of December 2023 to meet public policy needs identified in the Public Policy Transmission Planning Process (PPTPP) to increase the transfer capability of the Central East Interface by at least 350 MW and the transfer capability of the UPNY/SENY interface by at least 900 MW. The AC Transmission projects will add the largest amount of free-flowing transmission capacity to the state's grid in more than 30 years.
- In October 2017, the NYISO's Board of Directors selected a transmission project with an in-service date in June 2022 to increase transfer capability from Western New York and Ontario to central and eastern New York. This project includes a new 345 kV circuit and phase angle regulator (PAR) that will alleviate constraints in the Niagara area.
 - The Western NY Public Policy Transmission Project (the Empire State Line Proposal 1), to be developed by NextEra Energy Transmission New York, Inc., was included in the 2018 RNA/Comprehensive Reliability Plan (CRP) Base Case and the 2018 Comprehensive Review of Resource Adequacy.
- Con Edison's cables B and C are assumed out-of-service throughout the study period due to long term unavailability.
- Following deactivation of Indian Point Unit Nos. 2 and 3, the series reactors on lines 71, 72, M51, and M52 will be by-passed each summer.
- L33 PAR is out of service until its 2022-targeted replacement.

Figure 8: Public Policy Planning- Selected Transmission



Source: NYISO's 2020 Power Trends

Figure 9: Transmission Additions Assumed in the NYISO's 2020 RNA and 2020 Interim Review

Queue #	Project Name	Zone	CRIS	SP MW	Interconnection	2020 RNA COD
			Request		Status	
	Proposed Transn	nission Additions	s, other than L	ocal Transmissio	on Owner Plans (LTPs)	
Q545A	Empire State Line	Regulated Transmission Solutions	n/a	n/a	completed TIP Facility Study (Western NY PPTPP)	6/2022
556	Segment A Double Circuit				TIP Facility Study in progress (AC PPTPP)	12/2023
543	Segment B Knickerbocker- Pleasant Valley 345 kV				TIP Facility Study in progress (AC PPTPP)	12/2023
SDU	Leeds-Hurley SDU	System Deliverability Upgrades (SDU)	n/a	n/a	SDU triggered for construction in CY11	summer 2021
			CRIS Reque	est		
430	Cedar Rapids Transmission Upgrade	D	80	80	CY17	10/2021

2.4. Unit Availability

Figure 10 compares the five-year weighted average EFORd (Equivalent Demand Forced Outage Rate) values for generation units in the NYCA, which were included in this Interim Review, to the EFORd values used in the 2018 Comprehensive Review. The EFORd values for thermal units and large hydro units are calculated from NERC GADS data submitted by the generator owners.

Production data for wind, solar and run-of-river hydro units are used to determine the summer and winter capacity factors for these resources:

- Wind capacity factors are ~17% summer and ~31% winter
- Run-of-river capacity factors are ~44% summer and ~58% winter
- Solar capacity factors are ~50% summer and ~ 1% winter

The performance factor for SCRs is determined based upon those resources' actual load reductions in either required system tests of their capability to reduce load or in actual demand response activation calls.

	5-Year Weighted EFORd Values*			
Unit Type	2018 Comprehensive Review	2020 Interim Review		
Petroleum	16.6%	12.9%		
Gas	5.8%	6.1%		
Nuclear	3.1%	2.2%		
Conventional Hydro	1.0%	1.3%		
Pumped Storage	4.1%	5.1%		
Biomass	4.5%	4.4%		

Figure 10: 5-year Weighted Average EFORd Values

3.Gas Infrastructure

New York's reliance on natural gas as the primary fuel for electric generation justifies continued vigilance regarding the status of the natural gas system. The NYISO is actively involved in natural gas/electric coordination efforts with New York State and federal regulators, pipeline owners, generator owners, local distribution companies, and neighboring ISOs and Regional Transmission Operators (RTOs).

The NYISO's efforts with respect to gas supply assurance focus on: (i) improving communication and coordination between the gas and electric sectors; (ii) annual, weekly and, when conditions warrant, *ad hoc* generator surveys of fuel supplies to enhance awareness in the control room and provide electric system reliability benefits; and (iii) addressing the electric system reliability impact of the sudden catastrophic loss of gas.

4. Environmental Initiatives and Other Regulatory Activities

Federal, state and local government regulatory programs may impact the operation and reliability of the New York bulk electric grid. Compliance with regulatory initiatives and permitting requirements may require investment by the owners of New York's existing thermal power plants. If the owners of those plants have to make considerable investments, the cost of such investments could impact whether they remain available in the NYISO's markets and therefore potentially affect the reliability⁷ of the bulk system.

The Climate Leadership and Community Protection Act (CLCPA) is one of the primary public policy initiatives shaping how energy will be supplied in New York State in the future. The New York State Department of Environmental Conservation (NYSDEC) "Peaker Rule" requires significant emission reductions from older high-emitting gas turbines, which will result in some decisions to deactivate affected units in 2023 and 2025. These two initiative will lead to large changes in the type of resources available to serve the demand in New York.

To support the development of clean energy in this competitive environment, contracts for Renewable Energy Credits (RECs) between the New York State and developers were established. The CLCPA calls for growing the portion of load served by renewable resources to 70% by 2030.

⁷ For instance, the 2020 RNA reflected in the Base Cases (baseline system) the compliance plans filed with DEC in 2020 by the impacted generator owners, related with the proposed DEC rulemaking to control oxides of nitrogen (NOx) emissions from simple cycle and regenerative combustion turbines (Peaker Rule).

Looking beyond 2030, the CLCPA requires a zero-emission grid by 2040. The RNA 70x30 Scenario in conjunction with other studies being performed by the NYISO, such as the *Phase 2 Climate Change Impact & Resilience Study*, takes an initial review of the reliability implications of the CLCPA targets.

At the federal, state, and local levels, public policy initiatives are shaping the grid of the future. How the grid is operated to maintain reliability and economic efficiency while achieving these policies requires careful and informed operations, market design, and planning. From this perspective, the NYISO is examining a number of public policy initiatives, and engaging stakeholders and policymakers to identify the challenges and opportunities these initiatives may present to bulk power system reliability and efficiency.

The regulatory programs with the largest potential impacts on the availability of resources needed to maintain reliability are summarized below:

PUBLIC POLICY INITIATIVE	POLICYMAKING Entities	PUBLIC POLICY Goals	PUBLIC POLICY IMPLICATIONS
Climate Leadership and Community Protection Act	New York State Public Service Commission, New York State Energy Research and Development Authority, New York State Department of Environmental Conservation, Climate Action Council	6,000 MW of distributed solar installed by 2025, 185 trillion BTU reduction in total energy consumption, including electrification to reduce fossil fuel use in buildings by 2025, 3,000 MW of storage installed by 2030, 70% of load supplied by renewable resources by 2030, 9,000 MW of Offshore Wind Installed by 2035, 100% of load supplied by zero- emissions resources by 2040	Transformation of the power grid, necessitating examination of market structures, planning processes, flexible load, and investment in bulk power system infrastructure
Indian Point Deactivation	Agreement between New York State and Entergy	Deactivate Indian Point units 2 and 3 by 2020 and 2021, respectively	The NYISO issued a deactivation assessment finding no reliability need associated with loss of Indian Point's 2,311 MW assuming the addition of certain expected resources.Subsequently, unit 2 deactivated on April 30, 2020. Unit 3 is scheduled to deactivate in April 2021
New York City Residual Oil Elimination	City of New York	Eliminate combustion of fuel oil numbers 6 and 4 in New York City by 2020 and 2025 , respectively	2,946 MW of installed capacity affected by rule
CO ₂ Performance Standards for Major Electric Generating Facilities	New York State Department of Environmental Conservation (DEC)	Establish restrictions on carbon dioxide emissions for fossil fuel- fired facilities in New York by 2020	As of April 2020 , all coal-fired generation facilities supplying the bulk power system deactivated. NYISO generator deactivation assessments found no reliability needs associated with these deactivations
Regional Greenhouse Gas Initiative (RGGI)	New York and other RGGI states	Reduce carbon dioxide emissions cap by 30% from 2020 to 2030 and expand applicability to currently exempt "peaking units" below current 25 MW threshold	The NYS DEC proposed to expand applicability in NYS to generators of 15 MW or greater, whereas current rules do not apply to generators less than 25 MW
"Peaker Rule" Ozone Season Oxides of Nitrogen (NOx) Emissions Limits for simple cycle and regenerative combustion turbines	New York State Department of Environmental Conservation (DEC)	Reduce ozone-contributing pollutants associated with New York State-based peaking unit generation. Compliance obligations phased in between 2023 and 2025	DEC rule impacts approximately 3,300 MWs of peaking unit capacity in New York State. The NYISO is analyzing compliance plans through its Reliability Needs Assessment (RNA) to determine whether they give rise to reliability needs

Source: https://www.nyiso.com/documents/20142/2223020/2020-Power-Trends-Report.pdf

5. Results

General Electric's Multi-Area Reliability Simulation (GE-MARS) is the computer software program used for probabilistic analysis by the NYISO. Figure 11 summarizes the Loss of Load Expectation (LOLE) results comparing the 2018 Comprehensive Review results with the 2020 Interim Review for the base case and the high load forecast case results.

Figure 11: LOLE Results (day/year): Comparison with the Prior Study	//year): Comparison with the Prior Study
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Year	Baseline Load Forecast		High Load Forecast	
	2018 Comprehensive Review	2020 Interim Review	2018 Comprehensive Review	2020 Interim Review
2021	0.01	0.02	0.06	0.02
2022	0.01	0.02	0.07	0.03
2023	0.01	0.04	0.09	0.07

Baseline Load and Resources Totals and LOLE Results					
Year	2021	2022	2023		
Baseline Load Forecast (MW)	32,129	32,128	31,918		
Projected Resources (MW)	40,429	41,001	40,231		
Projected Resources/	125.8%	127.6%	126.0%		
Baseline Load*					
LOLE Results (days/year)	0.02	0.02	0.04		

Figure 12: Summary of 2020 Interim Review LOLE Results, Load, and Resources

*2020-2021 capability year IRM is 18.9%.

6. Conclusion

This 2020 Interim Review finds that the NYCA will comply with the NPCC resource adequacy criterion under the Base Case peak demand forecast. The results are based on the current cycle of the RPP, which began in 2020, and will continue through 2021. The 2020 RNA provides a new reliability assessment of the New York Bulk Power Transmission Facilities over its Study Period.

As compared with the 2018 Comprehensive Review results, the NYCA LOLE baseline results from this study are similar in the study years 2021 and 2022, and higher in study year 2023. The 2023 higher NYCA LOLE is mainly due impacts of planned generator deactivations in response to the DEC's Peaker Rule impacts in 2023.

It is important to note that the NYISO continuously plans its system to address potential reliability needs, in its Reliability Planning Process, as well as in its newly – defined Short Term

Reliability Process, which includes the Generator Deactivation Process. This process was approved by the FERC in 2020 and its requirements are contained in Attachments Y and FF of the NYISO's OATT. With this process in place, the RPP's Study Period changes from a year 1 to year 10 analysis, into a year 4 to year 10 look ahead. At the same time, the STRP evaluates year 1 through year 5 from the Short Term Assessment of Reliability (STAR) Start Date, with a focus on Short-Term Reliability Needs arising in years 1 through 3 of the Study Period. Each quarterly STRP concludes if the STAR or Generator Deactivation Assessment does not identify a STRP Need, and states whether a STRP Need will be addressed in the RPP or in the STRP. The NYISO commenced its first quarterly STAR on July 15, 2020 and will report results on October 15, 2020.

In the event that there is a potential loss of resources due to a proposed generator retirement or mothballing, the NYISO will administer its Short-Term Reliability Process for Generator Deactivation Notices that it receives. If necessary, the NYISO will seek market-based and regulated solutions to address any Generator Deactivation Reliability Needs identified through that process. As a last resort, the NYISO may enter into Reliability Must Run agreements with specific generators to continue to operate until market-based projects or permanent transmission solutions are built. Moreover, the NYISO continuously monitors all planned projects and any changes to the New York State transmission system, and may request solutions outside of its normal planning cycles if there appears to be an imminent threat to the reliability of the bulk power transmission system arising from causes other than deactivating generation.