

Key Deactivation Study

Assumptions for: Somerset

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Generator Summary

■ Somerset

- Zone A
- Nameplate 675 MW
- Retire

Deactivation Assessment Assumptions

- **The most recent base cases from the reliability planning process are those used for the 2019-2028 Comprehensive Reliability Plan (CRP) (discussed at the March 6, 2019 ESPWG/TPAS)**
 - Major Assumptions from the RNA (discussed at the June 22, 2018 ESPWG/TPAS) and CRP are provided at the end of this presentation for reference
- **Changes from the CRP Case reviewed at Prior Generator Deactivation Key Study Assumptions are provided as a reference**

Deactivation Assessment Assumptions

- **The following updates are included in this assessment:**
 - Local Transmission Plans (presented at the October 23rd and November 18th ESPWG) were reviewed for changes compared to the assumptions used for the 2019-2028 CRP
 - RG&E Station 122 relay upgrade was removed from the model
 - NYPA Niagara 230 kV substation additional circuit breaker was added to the model (5/2020)
 - National Grid project to reconductor the Niagara-Packard #193 and #194 115 kV lines in-service date changed from summer 2020 to summer 2022
 - National Grid projects to reconductor the following lines were added to the model:
 - Niagara-Packard (#192) 115 kV (11/2021)
 - Niagara-Packard (#191) 115 kV (2/2022)
 - Walack-Huntley (#133) 115 kV (6/2023)
 - Packard-Huntley (#130) 115 kV (6/2023)

Deactivation Assessment Information

- **The NYISO is performing the assessment of the BPTF**
- **The assessment of the non-BPTF will be performed by:**
 - NYSEG/RG&E, National Grid, NYPA
- **The Generator Deactivation Assessment for Somerset will be completed by March 11, 2020**

Changes from the CRP Case reviewed at Prior Generator Deactivation Key Study Assumptions

Changes from the CRP Case

- **The following updates are included for this assessment:**
 - Load - updated to match the 2019 Load and Capacity Data Report (“Gold Book”) forecast
 - Transmission
 - All firm Transmission Owner Local Transmission Plans (LTPs) from the 2019 Gold Book are included with the exception of the NYSEG Coopers Corners 345/115 & 115/34.5 kV transformers (due to target I/S outside of the inclusion period)
 - Also included:
 - AC Transmission selected projects NAT/NYPA T027 and National Grid/Transco T019
 - NYPA Moses 230/115 kV AT2 transformer is removed for the 2020 summer peak
 - Generation Removals
 - Q#511 Ogdensburg
 - Generators that have completed their Generator Deactivation Assessments that were in-service in the CRP are provided at the end of this presentation for reference
 - Generation Additions
 - Q#505 Ball Hill Wind

Completed Generator Deactivation Assessments

- **The following Generators have completed their Generator Deactivation Assessments that were in-service in the CRP :**
 - Monroe Livingston (Zone B, Nameplate 2.4 MW) (Retire)
 - Auburn – State St (Zone C, Nameplate 7.4 MW) (Retire)
 - Steuben County LF (Zone C, Nameplate 3.2 MW) (Retire)
 - Hudson Ave 4 (Zone J, Nameplate 16.3 MW) (Retire)
 - Albany LFGE (Zone F, Nameplate 5.6 MW) (Retire)
 - Cayuga 1 (Zone C, Nameplate 155.3 MW) (Mothball)
 - Hudson Ave 3 (Zone J, Nameplate 16.3 MW) (IIFO)

CRP Assumptions

2019-2028 CRP

- The 2019-2028 CRP re-iterates RNA's conclusion that there are no Reliability Needs on the BPTF over the 10-year Study Period
- This conclusion is based on the CRP base case, which was developed by updating the RNA Base Case:

Changes from the 2018 RNA to 2018 CRP Base Case	Zone	Δ MW (DMNC)	Notes
Add back Pilgrim I and II	K	+90	Rescission of GDA Notice (Nov 2018)
Remove Cayuga II	C	-140	ICAP Ineligible Forced Outage as of 7/1/2018
Add back Selkirk I and II	F	+360	Rescission of GDA Notice (Dec 2018)
ConEdison's B3402 & C3403 345 kV cables out of service	J	-	Long-term unavailability
By-pass the Series Reactors on 71, 72, M51, M52 for summer (with Y49, 41, 42, SR in service)	J	-	After Indian Point 2 and 3 Deactivations (2020 and 2021)
J to K (Jamaica ties) emergency limit represented in the MARS topology changed from 235 MW to 320 MW	J to K	+85*	Due to addition of Rainey-Corona 345/138 kV PAR; target I/S summer 2019

RNA Major Assumptions

2018 RNA Summer Peak Load Forecast Assumptions

Topline (former Econometric), Baseline and Adjusted Summer Peak Forecast

Annual MW	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
2018 Topline* Forecast	33,763	34,099	34,367	34,554	34,727	34,946	35,132	35,442	35,750	35,982	36,154
2018 Gold Book Baseline**	32,904	32,857	32,629	32,451	32,339	32,284	32,276	32,299	32,343	32,403	32,469
+ 2018 Solar PV	440	566	689	774	843	889	928	963	989	1,017	1,038
2018 RNA RA Base Case***	33,344	33,423	33,318	33,225	33,182	33,173	33,204	33,262	33,332	33,420	33,507

Comparison of Base Case Peak Forecasts - 2016 & 2018 RNA (MW)

Annual MW	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
2016 RNA RA Base Case***	33,618	33,726	33,825	33,948	34,019	34,120	34,256	34,393	34,515	34,646	34,803		
2018 RNA RA Base Case***			33,344	33,423	33,318	33,225	33,182	33,173	33,204	33,262	33,332	33,420	33,507
Change from 2016 RNA			-481	-525	-701	-895	-1,074	-1,220	-1,311	-1,384	-1,471	NA	NA

* The topline forecast will be used for the resource adequacy scenario

** The transmission security power flow RNA base cases use this Gold Book baseline forecast

***For the resource adequacy (RA) study RNA Base Case, the 2018 Gold Book baseline load forecast was modified by removing the behind-the-meter solar PV impacts in order to model the solar PV explicitly as a generation resource to account for the intermittent nature of its availability

The Gold Book 2018 contains additional details on the load forecast:

http://www.nyiso.com/public/webdocs/markets_operations/services/planning/Documents_and_Resources/Planning_Data_and_Reference_Docs/Data_and_Reference_Docs/2018-Load-Capacity-Data-Report-Gold-Book.pdf

Queue #	Project Name	Zone	CRIS Request	SP MW	Interconnection Status
Proposed Generation Additions					
251	CPV Valley Energy Center	G	680.0	677.6	CY11
349	Taylor Biomass	G	19.0	19.0	CY11
395	Copenhagen Wind	E	79.9	79.9	CY15
403	Bethlehem Energy Center Uprate	F	78.1	72.0	CY15
387	Cassadaga Wind	A	126.0	126.0	CY17
421	Arkwright Summit	A	78.4	78.0	CY17
444	Cricket Valley Energy Center II	G	1020.0	1020.0	CY17
461	East River 1 Uprate	J	n/a	2.0	CY17
462	East River 2 Uprate	J	n/a	2.0	CY17
467	Shoreham Solar	K	24.9	25.0	CY17
510	Bayonne Energy Center II	J	120.4	120.4	CY17
511	Ogdensburg	E	79.0	79.0	CY17
N/A	Nine Mile Point 2	C	63.4	63.4	CY17 (CRIS only)
N/A	East River 6	J	8.0	N/A	CY17 (CRIS only)
MW additions from 2016 RNA			1,598	1,588	
Total MW gen. additions			2,377	2,364	

Proposed Generation Projects Included in the 2018 RNA Base Case

Also included in the
2016 RNA

Proposed Transmission Projects Included in the 2018 RNA Base Case

- All firm LTPs from the Gold Book 2018 were included in the 2018 RNA Base Case
- The Q545A Western NY - Empire State Line is also included

Assumed Generation Deactivations

Owner/Operator	Plant Name	Zone	CRIS	2018 RNA Base Case Status*	2016 RNA Base Case Status
Helix Ravenswood LLC	Ravenswood 04	J	15.2	out	out
	Ravenswood 05	J	15.7	out	out
	Ravenswood 06	J	16.7	out	out
International Paper Company	Ticonderoga	F	7.6	out	in
Niagara Generation LLC	Niagara Bio-Gen	A	50.5	out	out
NRG Power Marketing LLC	Dunkirk 2	A	97.2	out	out
	Huntley 67	A	196.5	out	out
	Huntley 68	A	198.0	out	out
	Astoria GT 05	J	16.0	out	out
	Astoria GT 07	J	15.5	out	out
	Astoria GT 08	J	15.3	out	out
	Astoria GT 10	J	24.9	out	out
	Astoria GT 11	J	23.6	out	out
	Astoria GT 12	J	22.7	out	out
	Astoria GT 13	J	24.0	out	out
ReEnergy Black River LLC	Fort Drum	E	55.6	out	in
	Chateaugay Power	D	18.6	out	out
Binghamton BOP, LLC	Binghamton	C	43.8	out	in
Helix Ravenswood, LLC	Ravenswood 09	J	21.7	out	in
Entergy Nuclear Power Marketing, LLC	Indian Point 2	H	1027.0	out	in
	Indian Point 3	H	1040.0	out	in
Selkirk Cogen Partners, LP	Selkirk 1	F	82.1	out	in
	Selkirk 2	F	291.3	out	in
J- Power USA Generation, LP Edgewood Energy, LLC	PPL Pilgrim ST GT1	K	45.6	out	in
	PPL Pilgrim ST GT2	K	46.2		
Helix Ravenswood, LLC	Ravenswood 2-1	J	40.4	out	in
	Ravenswood 2-2	J	37.6		
	Ravenswood 2-3	J	39.2		
	Ravenswood 2-4	J	39.8		
	Ravenswood 3-1	J	40.5		
	Ravenswood 3-2	J	38.1		
Ravenswood 3-4	J	35.8			
Lyonsdale Biomass, LLC	Lyonsdale (Burrows)	E	20.2	out	in
R.E. Ginna Nuclear Power Plant, LLC	Ginna	B	582.0	in	out
Cayuga Operating Company, LLC	Cayuga 1	C	154.1	in	out
	Cayuga 2	C	154.7	in	out
Entergy Nuclear Power Marketing LLC	Fitzpatrick 1	C	858.9	in	out
change in status	Changes in deactivations since 2016 RPP		1,203		
	Total 2018 RNA MW assumed as deactivated		3,703		

* Consistent with the deactivation dates

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- Maintaining and enhancing regional reliability
- Operating open, fair and competitive wholesale electricity markets
- Planning the power system for the future
- Providing factual information to policymakers, stakeholders and investors in the power system

