Key Deactivation Study Assumptions for: Hudson Ave 3 IIFO

Keith Burrell

Manager, Transmission Studies

ESPWG/TPAS

November 18, 2019

Generator Summary

- **Hudson Ave 3**
  - Zone J
  - Nameplate 16.3 MW
  - IIFO

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 Information

- The NYISO is performing the assessment of the BPTF
- The assessment of the non-BPTF will be performed by:
  - Con Edison
- The Generator Deactivation Assessment for Hudson Ave 3 will be completed by January 30, 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)

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	ΔMW *(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

Proposed Generation Projects Included in the 2018 RNA Base Case

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**	

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		
	Ravenswood 2-2	J	37.6		
	Ravenswood 2-3	J	39.2		
	Ravenswood 2-4	J	39.8	out	in
	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

Our mission, in collaboration with our stakeholders, is to serve the public interest and provide benefit to consumers by:

- 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