Policy 5 Proposed Changes
Interface Transition Rate Methodology

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Prepared by PSEG LI
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Background

The current Policy 5 procedure for establishing the NYCA IRM includes modeling interface transition rates based on the previous 5 years of forced outage data

- The 5 year historical forced outage data used in the model has a large impact on the LCR
  - A tan 45 sensitivity performed by the NYISO showed that using the Y49 forced outage rate prior to the recent extended outages (2015 – 2019 data as opposed to 2017 – 2021 data) resulted in a 3.86 % decrease (from 107.4 % to 103.54 %) in the preliminary Zone K LCR
  - The sensitivity results show the significance of properly representing not only a decline in cable reliability, but also capturing possible improvements to cable reliability

NYCA cable / circuit interfaces are aging just like all other transmission assets

- Improvements to system reliability through the reconductoring of cables should be recognized and encouraged
  - In order to appropriately capture changes to system reliability via improvements to cable reliability, PSEG Long Island suggests updating the Policy 5 Interface Transition Rate Methodology

Proposal

The reconductoring of a section of the cable that remediates historical forced outage issues associated with that section of the cable will have the following changes:

- The 5 year historical forced outage events associated with the section remediated will be removed or replaced (removal vs. replacement and possible replacement value to be determined through stakeholder discussion)
- The 5 year historical forced outage events not associated with the reconductoring will remain included in the overall transition rate calculation
- Normal procedure for including forced outage events associated with the reconductored cable section in the transition rate calculation will resume for the following IRM Study
- Example with partial reconductoring eliminating all hours of events associated with 2,000 hours of forced outage on a circuit

EXAMPLE STATE MODEL (2017 - 2021)

Outage	State	MW	PU	Rate	Hours in State
None	1	1000	1.000	83.8427%	36,324.00
Circuit A	2	500	0.500	9.2328%	4,000.00
Circuit B	3	500	0.500	4.6164%	2,000.00
Circuit A & B	4	0	0.000	2.3082%	1,000.00
				100.0%	**43,324.00**
				EFOR	**9.23%**

EXAMPLE STATE MODEL (2017 - 2021)

Outage	State	MW	PU	Rate	Hours in State
None	1	1000	1.000	88.4591%	38,324.00
Circuit A	2	500	0.500	4.6164%	2,000.00
Circuit B	3	500	0.500	4.6164%	2,000.00
Circuit A & B	4	0	0.000	2.3082%	1,000.00
				100.0%	**43,324.00**
				EFOR	**6.92%**

Proposal

- Example with partial reconductoring eliminating a prorated amount (50 % in this instance) of all hours of events associated with 2,000 hours of forced outage on a circuit

EXAMPLE STATE MODEL (2017 - 2021)

Outage	State	MW	PU	Rate	Hours in State
None	1	1000	1.000	83.8427%	36,324.00
Circuit A	2	500	0.500	9.2328%	4,000.00
Circuit B	3	500	0.500	4.6164%	2,000.00
Circuit A & B	4	0	0.000	2.3082%	1,000.00
				100.0%	**43,324.00**
				EFOR	**9.23%**

EXAMPLE STATE MODEL (2017 - 2021)

Outage	State	MW	PU	Rate	Hours in State
None	1	1000	1.000	86.1509%	37,324.00
Circuit A	2	500	0.500	6.9246%	3,000.00
Circuit B	3	500	0.500	4.6164%	2,000.00
Circuit A & B	4	0	0.000	2.3082%	1,000.00
				100.0%	**43,324.00**
				EFOR	**8.08%**

The reconductoring of the entire cable that remediates all historical forced outage issues associated with the cable will have the following changes:

- The 5 year historical forced outage rate will be replaced with the class average forced outage rate for a new cable in the NYISO

POLICY 5 – CABLE TRANSITION RATE MODIFICATION

Proposal

- Example with full reconductoring of a circuit resulting in the implementation of the class average forced outage rate for a new cable in the NYISO (2 % in this instance)

EXAMPLE STATE MODEL (2017 - 2021)

Outage	State	MW	PU	Rate	Hours in State
None	1	1000	1.000	83.8427%	36,324.00
Circuit A	2	500	0.500	9.2328%	4,000.00
Circuit B	3	500	0.500	4.6164%	2,000.00
Circuit A & B	4	0	0.000	2.3082%	1,000.00
				100.0%	**43,324.00**
				EFOR	**9.23%**

EXAMPLE STATE MODEL (2017 - 2021)

Outage	State	MW	PU	Rate	Hours in State
None	1	1000	1.000	91.0754%	39,457.50
Circuit A	2	500	0.500	2.0000%	866.50
Circuit B	3	500	0.500	4.6164%	2,000.00
Circuit A & B	4	0	0.000	2.3082%	1,000.00
				100.0%	**43,324.00**
				EFOR	**5.62%**

Pros / Cons

Existing Methodology

(+) Established process that stakeholders are familiar with and understand

(-) Does not fully recognize improvements to cable reliability

Proposed Change

(+) Captures cable reliability improvements while still acknowledging potential future failures (i.e. use of class average forced outage of a new cable for full reconductoring)

(+) Encourages reliability improvements

(-) Adds minor additional complexity to the transition rate calculation