AC Transmission and Peaker Retirements in IRM Study

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Overview

- Review assumptions and cases

- Results

- Next Steps

Background

- ICS request to run Tan 45 cases with AC Transmission in service and DEC NOx Rule Peakers retired

- To be completed prior to the Preliminary Base Case

- High level summary of changes
  - 2023 – Topology changes for ConEd series reactors, Generator (Peaker) retirements based on DEC compliance plans
  - 2024 – AC Transmission topology updates
  - 2025 – Generator (Peaker) retirements

- These assumptions are a projection of future conditions which may and likely will change between now and the time when actual IRM and LCR values are calculated for future market years.
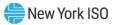
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Assumptions

- **Start with 2022 IRM Study Final Base Case**
- **Return Neptune line rating to fully available for LCR runs**
  - Tan 45 cases were <u>not</u> run with this assumption
- **Transmission Security Limits (TSL) are the same as 2022 LCR Report**
  - Zones G-J: 80.7%
  - Zone J: 77.2%
  - Zone K: 94.4%
  - TSLs are likely to change in the years studied
- **Final IRM and LCRs from 2022**
  - IRM: 19.6%
  - J LCR: 81.2%
  - K LCR: 99.5%
  - G-J LCR: 89.2%

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Disclaimer

- The IRM and LCR values that result from this analysis are based on a set of assumptions that may and likely will not represent future conditions when actual IRM and LCRs are calculated for future market years.

- These results are provided for study purposes only, and the NYISO disclaims their use for purposes of making any financial or procurement decisions associated with the NYISO's installed capacity markets.

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Case 1 – Y2023

- **Start with 2022 FBC**
  - Neptune remained derated for Tan 45 values
  - Neptune reinstated to full value for LCR results
  - EFORd
    - NYCA: 12.1%
    - Zones G-J: 9.6%

- **Retire 2023 Peakers**
  - 37.7 MW in G
  - 745.9 MW in J
  - 24.6 MW in K

- **Updated Topology due to change in series reactors**
  - G to H 325 MW decrease (6,675 MW)
  - I to J 50 MW increase (4,400 MW)
  - I to J and K grouping 50 MW increase (5,693 MW)

- **Tan 45 Results**
  - IRM: 19.0%
  - Zone J: 79.7%
  - Zone K: 102.2%
  - Zones G-J: 89.8%

- **EFORd Values**
  - NYCA: 11.8%
  - Zones G-J: 8.6%

- **Optimized LCRs**
  - Zone J: 80.2% (-1.0% from 2022 LCRs)
  - Zone K: 96.2% (-3.3% from 2022 LCRs)
  - Zones G-J: 87.4% (-2.2% from 2022 LCRs)

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Case 2 – Y2024

- **Start with Case 1**
  - Neptune remained derated for Tan 45 values
  - Neptune reinstated to full value for LCR results

- **Updated Topology due to AC Upgrade**
  - E to F increase of 1,125 MW (3,925 MW)
  - E to F and G (grouping) increase of 1,134 MW (5,650 MW)
  - E to G increase of 550 MW (2,300 MW)
  - F to G increase of 1,925 MW (5,400 MW)
  - G to H increase of 375 MW from previous case (7,050 MW)
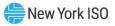 - UPNYSENY increase of 1,900 MW (7,150 MW)

- **EFORd values remained the same**

- **Tan 45 Results**
  - IRM: 19.3%
  - Zone J: 78.6%
  - Zone K: 100.3%
  - Zones G-J: 89.0%

- **Optimized LCRs**
  - Zone J: 78.9% (-1.3% from Y2023)
  - Zone K: 94.8% (-1.4% from Y2023)
  - Zones G-J: 80.7%* (-6.7% from Y2023)
    - G-J Optimized LCR is at its TSL

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Case 3 – Y2025

- **Start with Case 2**
  - Neptune remained derated for Tan 45 values
  - Neptune reinstated to full value for LCR results
- **Retire 2025 Peakers**
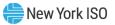 - 626 MWs in Zone J
  - 111.5 MWs in Zone K
- **EFORd Values**
  - NYCA: 11.7%
  - Zones G-J: 8.4%

- **Tan 45 Results**
  - IRM: 19.3%
  - Zone J: 76.7%
  - Zone K: 100.8%
  - Zones G-J: 87.6%
- **LCR Results**
  - Zone J: 77.6% (-1.3% from Y2024)
  - Zone K: 94.4%* (-0.4% from Y2024)
  - Zones G-J: 80.7%* (No change from Y2024)
    - Zones G-J and Zone J Optimized LCRs are at TSL floor levels

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Summary of Results

		Final LCR Case	Y2023	Y2024	Y2025		2022 Final TSL
Tan 45 Analysis	IRM	19.6%	19.0%	19.3%	19.3%		-
	Zone J	80.7%	79.7%	78.6%	76.7%		-
	Zone K	99.8%	102.2%	100.3%	100.8%		-
	Zones G-J	90.7%	89.8%	89.0%	87.6%		-
Optimized LCRs	Zone J	81.2%	80.2%	78.9%	77.6%		77.2%
	Zone K	99.5%	96.2%	94.8%	94.4%*		94.4%
	Zones G-J	89.2%	87.4%	80.7%*	80.7%*		80.7%
	* Value at TSL Floor						

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Next Steps

- **Begin the Parametric Study for 2023 IRM**
  - The 2023 case assumptions to be wrapped into this study
- **Run Tan 45 analysis and develop Preliminary Base Case**

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Additional Results - Assumptions

- **Lowering of the G-J TSL by 10%**
  - Limit set at 70.7%

- **IRM reduced 0.5% through all cases**
  - This value is the IRM difference from the Final Base Case when compared to the case where the Neptune cable was modeled as fully available
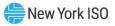
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Additional Results

	IRM	Zone J	Zone K	Zones G-J
Case 1	18.5%	81.0%	96.6%	88.0%
Case 2	18.8%	80.1%	95.1%	77.1%
Case 3	18.8%	78.5%	95.0%	75.3%
Notes: IRM Values Lowered by 0.5% (delta between Tan45 with Neptune in and the FBC), G-J TSL Value was lowered to 70.7%				

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Questions?

Email IRM@nyiso.com with further questions

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