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Independent System Operator

# 2022 RNA Base Case Preliminary MARS Topology

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# Agenda

- **Preliminary MARS topology changes, compared with the 2021-2030 Comprehensive Reliability Plan (CRP) base case assumptions**
  - This is a preliminary overview of known major changes, and before application of the 2022 RNA 1st pass Base Case inclusion rules

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# GE MARS and System Topology Background

- The NYISO uses the GE MARS program for assessing the resource adequacy of the NY bulk power system
- The GE MARS program is a probabilistic analysis tool used for calculating expected values of reliability indices such as Loss of Load Expectation (LOLE, days/year) and includes load, generation, and transmission representation. The four external Control Areas interconnected to the NYCA are also modeled
- The transmission system is modeled through transfer limits on the interfaces between pairs of interconnected areas;
  - aka “the topology”
- A graphical representation of the topology is developed and provided as a communication tool

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# Summary of Changes (compared with the 2021-2032 CRP Base Case and for the 2022 RNA Study Period of 2026-2032)

1. M51, M52, 71 and 72 series reactors assumed in-service starting 2023 and delta impact re-alignment with the 2021 Operations UPNY-ConEd Voltage Study
2. Large loads projects inclusion

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# M51, M52, 71, 72 Series Reactors Assumptions and UPNY-ConEd Interface Limits Impacts

- **2020 RNA to CRP ("post-2020RNA")**
  - M51, 52, 71, 72 series reactors assumption changed from bypassed to I/S starting 2023 (ConEd's regulated backstop solution to 2020 Q3 STAR needs)
  - The assumed impact on UPNY-ConEd was -750MW (associated delta from the 2020 Operations UPNY-ConEd Voltage Study):
    - UPNY-ConEd pre-AC PPTPs (SY 2021-2023): 7000 – 750 = 6,250 MW,
    - UPNY-ConEd post-AC PPTPs (SY2024-2030): 7375-750=6,625 MW
- **CRP to 2021 Planning Models and the 2022 RNA**
  - An associating smaller delta (-325MW) when the series reactors on M51, M52, 71, 72 are assumed I/S (and 41, 42, Y49 O/S) starting 2023, aligning with the 2021 Operations Voltage Study UPNY-ConEd [link]
    - UPNY-ConEd pre-AC PPTPs (SY 2022-2023): 7000 – 325 = 6,675 MW,
    - UPNY-ConEd post-AC PPTPs (SY2024-2030): 7375- 325=7,050 MW

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# Large Loads Impacts

- **The following Large Loads were included in the resource adequacy base cases assumptions starting with the 2021 Q3 STAR databases**
  - Q0580 – WNY STAMP
  - Q0776 – Greenidge Load
  - Q0849 – Somerset Load
  - Q0850 – Cayuga Load
  - Q0979 – North Country Data Center (load increase)
- **The MW impact of the large loads will be modeled consistent with the 2022 Gold Book (in progress).**
  - For example, the Dysinger East and Group A MARS interfaces were impacted as shown below, and as modeled for the 2022 Q1 STAR:
    - Dysinger East and Zone A group interfaces MARS limits were reduced in 2026 (and beyond) by 400 MW and 500 MW respectively, to reflect impacts of the forecasted large loads located in Zones A and C
      - Dysinger East 2200-400=1,800MW; Group A 2650-500=2,150MW
      - To be confirmed based on the 2022 RNA models
- **A preliminary MARS topology is in the assumption matrix document posted for this meeting**

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# Questions?

# Our Mission & Vision

## Mission

Ensure power system reliability and competitive markets for New York in a clean energy future

## Vision

Working together with stakeholders to build the cleanest, most reliable electric system in the nation

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