

2020 RNA: External Areas Modeling

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Agenda

- **Overview of Past Modeling Practices**
- **Changes for 2020 RNA**
 - In the Base Case
 - For the Simplified External Scenario

NOTE:

All topology diagrams in this presentation are based on the 2018 RNA study, Certain interfaces may have different limits for the 2020 RNA study.

Background: 2018 RNA External Areas Topology

- **Based on information received through NPCC CP-8 WG**
- **Continued to apply historic changes:**
 - Consolidate 11 IESO (Ontario) areas into a single area
 - Consolidate 8 HQ (Quebec) areas into a single area
- **New changes introduced in the 2018 RNA:**
 - Reduce ISONE (New England) model from 14 to 8 areas
 - Described at the June 1, 2018 ESPWG meeting [[link](#)]

2020 RNA Consolidated External Model Proposals:

- 1) 2020 RNA Base Case: Simplified External Areas**
- 2) 2020 RNA Scenario: Further Simplification**

2020 RNA Base Case Proposed Changes

- **Initially discussed at Feb 27, 2020 ESPWG**
- **Proposed Changes:**
 - Consolidate 5 PJM (mid-Atlantic) areas into a single area
 - Consolidate 8 ISONE areas into a single area

Benefits of the Changes

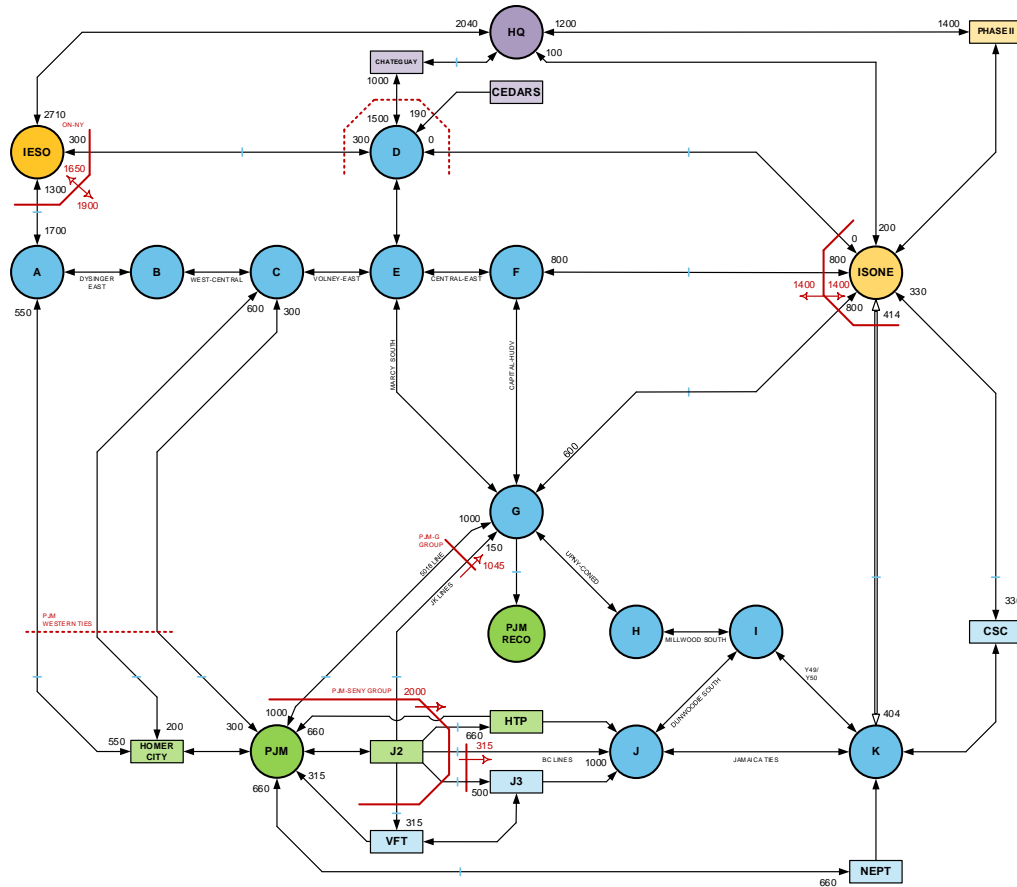
■ Increased Performance

- Reducing the size of the model reduces the overall complexity, reducing runtime
- The described changes reduce runtime ~15%

■ Simplified application of assumptions

- Current practice is to adjust the LOLE of external areas to be between 0.100 and 0.150 dy/yr
- Reducing the number of external areas to adjust simplifies the procedure

Draft External Topology for 2020 RNA Base Case



NOTE: Internal NY Model Simplified for Illustrative Purposes

Notes

1. PJM to NY emergency assistance (EA) assumption for calculating the PJM-NY Western ties, PJM-G Group, and ABC Line Group flow distribution limit: 1500MW
2. NYCA EA simultaneous import limit: 3,500 MW
3. External areas representation based upon information received from the NPCC CP-8 WG

Legend

| | |
|--|------------------------------------|
| | Interface |
| | Unidirectional Interface |
| | Interface w/ Dynamic Ratings |
| | Interface Group |
| | Interface Group w/ Dynamic Ratings |
| | Monitoring Interface Group |
| | NYCA EA Interface Group Marker |
| | "Dummy Bubble" |

NOTE: An interface is considered to not have a MW limitation if no number is specified

2020 RNA Scenario: Further Simplification of the External Model

2020 RNA Scenario

- RNA scenarios are for information only
- Initially discussed at Feb 27, 2020 ESPWG
- This scenario will evaluate the effect of:
 - Starting with the simplified external model described above, removing all load and generation from external areas
 - Removing interfaces between external areas
 - Inserting fixed amounts of capacity in each external area
 - The amount of capacity can be varied based upon feedback

Benefits of Change

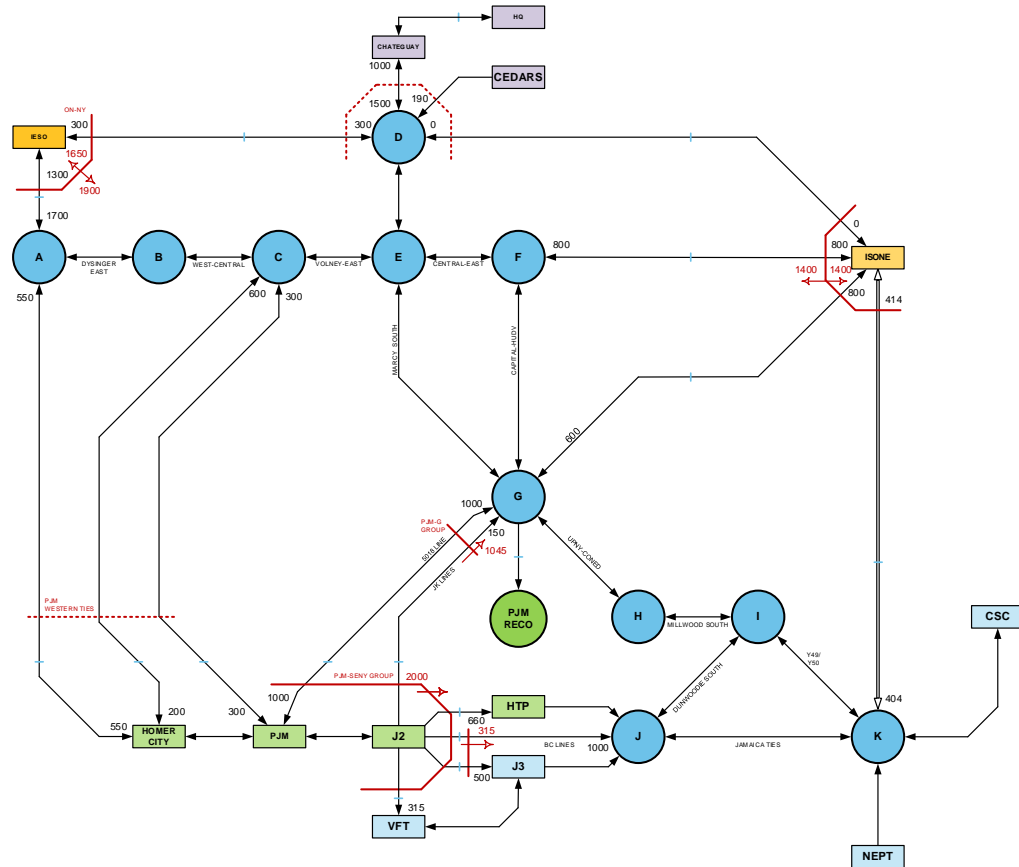
■ Increased Performance

- Reducing the size of the model reduces the overall complexity, reducing runtime
 - The 2018 RNA modeled approximately 1,600 generators in the externals
- This change reduces runtime by an additional ~10%

■ Increased Confidence

- The amount of available external control area assistance in any hour is known

Draft External Topology for 2020 RNA Simplified External Scenario



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NOTE: Internal NY Model Simplified for Illustrative Purposes

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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



Questions?