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CHG&E Peaker Retirement

June 19, 2020

Central Hudson Combustion Turbines

- 25 MVA, 20 MW each
- Located at Westerlo Loop Substations
  - Coxsackie 13.8 kV
  - South Cairo 13.8 kV
- Other Westerlo Loop Substations: New Baltimore; Westerlo; Freehold; Lawrenceville; Hunter

- Current Local Reliability Needs addressed by CTs
  - Local Substation reserve capacity for transformer outages
  - Post-Contingency voltage support for transmission loop

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Westerlo Loop Peak Loads

Year	Summer Peak (MW)	Winter Peak (MW)
2019	61	59
2018	57	63
2017	48	56
2016	55	52
2015	51	50

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Post-Contingency Conditions – Worst Case

- Loss of North Catskill – Lawrenceville CL Line
- Loss of North Catskill 69 kV Bus #1
  - Close Normally Open Breaker at Westerlo to Pick Up loads at:
    - Freehold
    - South Cairo
    - Lawrenceville
- Loss of North Catskill – Coxsackie NC Line
- Loss of North Catskill 69 kV Bus #2
  - Close Normally Open Breaker at Westerlo to Pick Up loads at:
    - Westerlo
    - New Baltimore
    - Coxsackie

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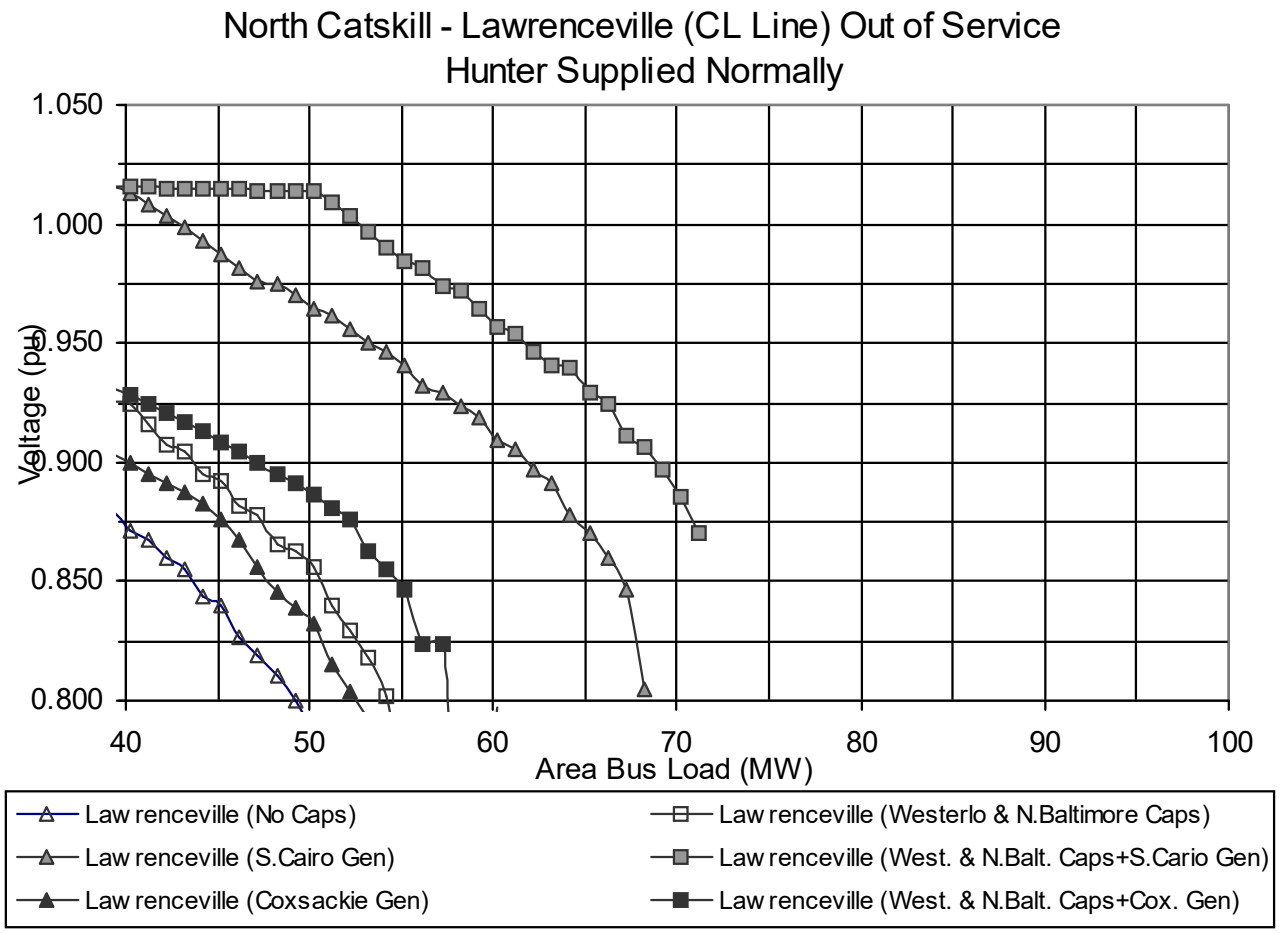
Post-Contingency Conditions – Loss of CL Line



Hunter load supplied normally (from Lawrenceville)

Without the Combustion Turbines, and using only the existing capacitor banks, acceptable voltage ($\geq$ 0.9 pu) can be maintained for load levels up to approximately 43 MW.

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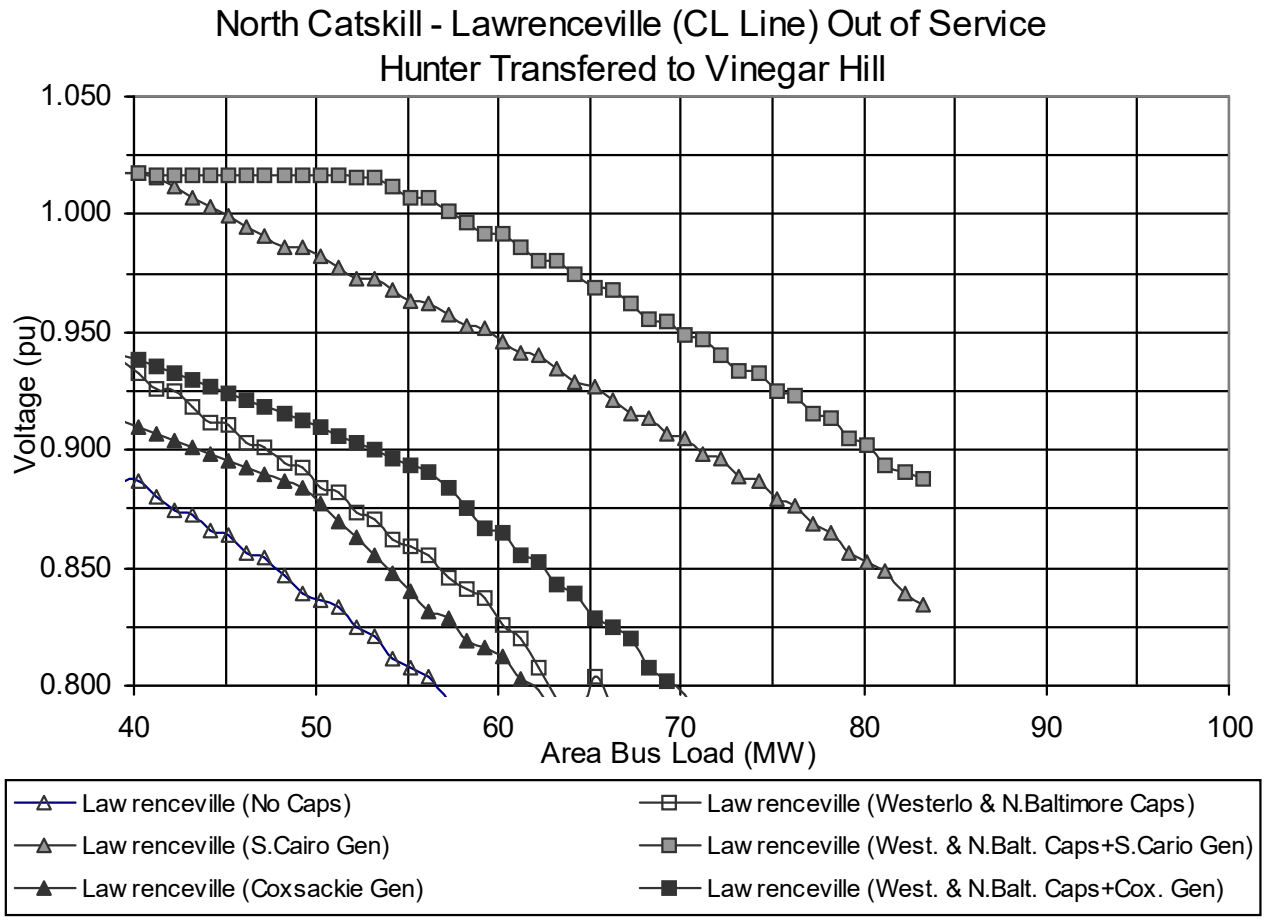
Post-Contingency Conditions – Loss of CL Line



Hunter Load Transferred to Vinegar Hill.

Without the Combustion Turbines, and using only the existing capacitor banks, acceptable voltage ($\geq$ 0.9 pu) can be maintained for load levels up to approximately 47 MW.

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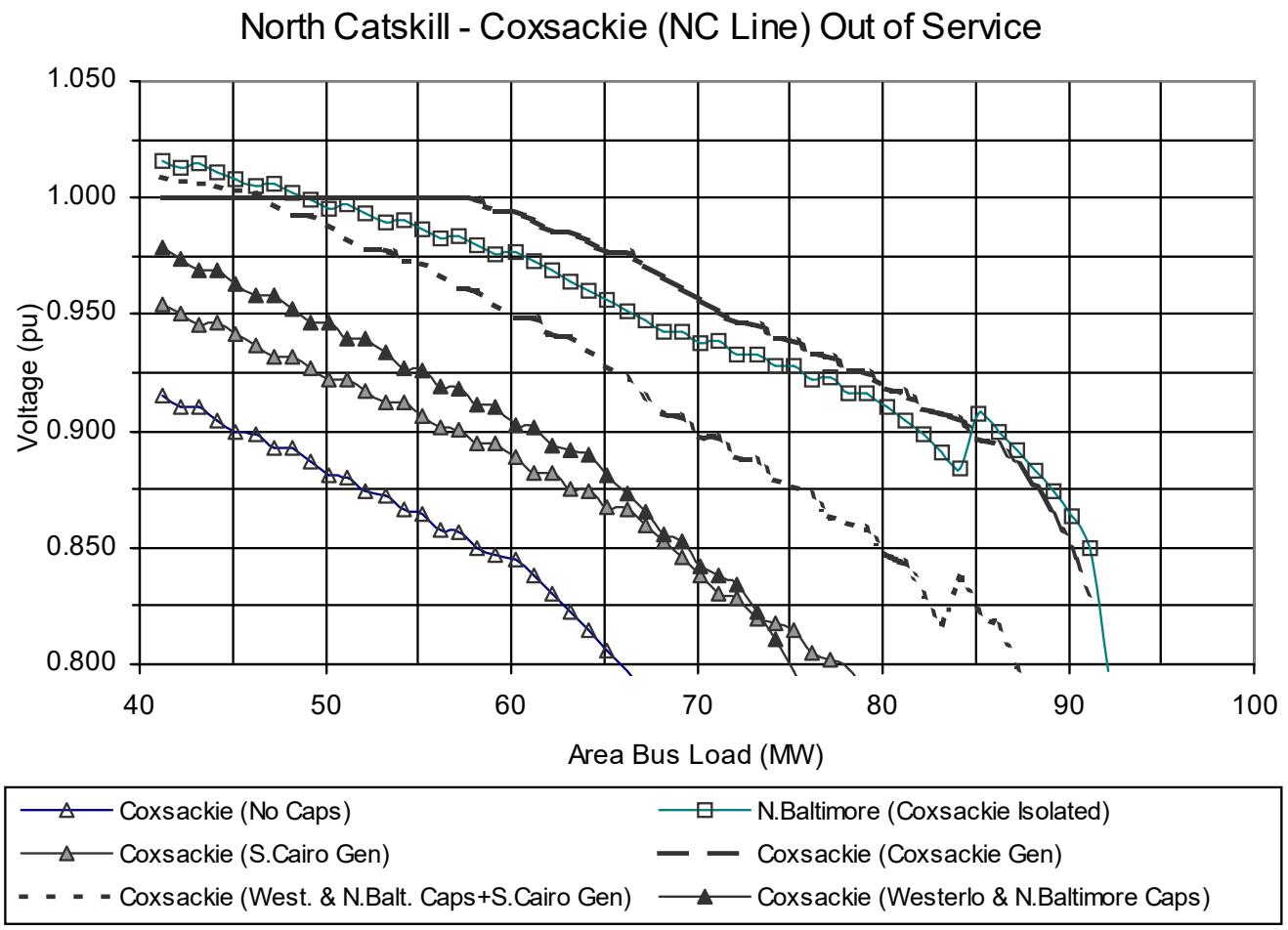
Post-Contingency Conditions – Loss of NC Line



Without the Combustion Turbines, and using only the existing capacitor banks, acceptable voltage (≥ 0.9 pu) can be maintained for load levels up to approximately 61 MW.

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Conclusions

- Without the Coxsackie and South Cairo CTs, there is no reserve capability for local transformer outages.
- Without the Coxsackie and/or South Cairo combustion turbines, the Westerlo Loop is voltage constrained at approximately:
  - 47 MW for loss of the CL line
  - 61 MW for loss of the NC line
- Recent peak loads have exceeded 47 MW for at least 5 years and equaled or exceeded 61 MW for 2 of the last 5 years.
- Analyses are underway to identify solutions.

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