PJM – SERTP
Regional Transmission Plan Review

Order 1000 Biennial Regional Transmission Plan Review Meeting – Presentation 2 of 2

May 7th, 2020
Agenda

• Final 2020 SERTP Regional Transmission Plan – PJM Seam

• SERTP Modeling Input Assumptions
SERTP Regional Modeling Assumptions

SERTP

- Associated Electric Cooperative Inc.
- Dalton Electric Cooperative
- Duke Energy
- Georgia Transmission
- Gulf Power
- LCE
- KU
- MIEAG Power
- PowerSouth Energy Cooperative
- Southern Company
- TVA
SERTP Cumulative Summer Peak Load Forecast

Projected Load (MW)

SERTP Region - Cumulative Summer Peak Load Forecast

2020 Cumulative
2019 Cumulative
2018 Cumulative
2017 Cumulative
2016 Cumulative

2021 2022 2023 2024 2025 2026 2027 2028 2029 2030
LG&E/KU Balancing Authority

SERTP REGIONAL TRANSMISSION EXPANSION PLAN
BLUE LICK 345/161 KV TRANSFORMER

• DESCRIPTION:
  – Replace the Blue Lick 345/161 kV, 240 MVA transformer with a 345/161 KV, 450 MVA transformer, reset/replace any CTs less than 2000A and increase the loadability of relays.

• SUPPORTING STATEMENT:
  – The existing Blue Lick 345/161 kV transformer overloads under contingency.
HARDIN CO SUBSTATION ADDITIONS

• DESCRIPTION:
  – Install a second 345/138 kV, transformer at Hardin County.
  – Install a second 138/69 kV, transformer at Hardin County
  – Install a second 69 kV line Elizabethtown – Hardin County

• SUPPORTING STATEMENT:
  – Additional voltage support in needed in the Hardin Co/Elizabethtown area under contingency.
LEBANON TO LEBANON SOUTH 69KV LINE

• DESCRIPTION:
  – Construct 4.07 mile 69kV line from Lebanon to Lebanon South using 556.5 MCM ACSR.
  – Construct 4 breaker ring bus at Lebanon South.

• SUPPORTING STATEMENT:
  – Additional voltage support in needed in the Lebanon area under contingency.
  – The Campbellsville Tap to Taylor County 69kV line overloads under contingency.
**DESCRIPTION:**
- Install a second West Lexington 450 MVA, 345/138 kV transformer.
- Create 345kV ring bus, configured such that the two transformers do not share a single breaker.

**SUPPORTING STATEMENT:**
- The West Lexington 345/138 kV Transformer #1 overloads under contingency.
- Additional voltage support needed in the Lexington area under contingency.
LG&E/KU Balancing Authority

UPCOMING 2020
GENERATION ASSUMPTIONS
LG&E/KU - Generation Assumptions

The following table depicts the generation assumptions that change throughout the ten year planning horizon for the 2020 SERTP Process. The years shown represent Summer Peak conditions.

<table>
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<th>SITE</th>
<th>FUEL TYPE</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
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LG&E/KU Balancing Authority
• DESCRIPTION:
  – Construct approximately 9.2 miles of new 100 kV transmission line between Dan River Steam Station and Sadler Tie with 954 AAC at 120°C.

• SUPPORTING STATEMENT:
  – Thermal overloads occur around Dan River Steam Station and Dan River Combined Cycle Station under contingency.
• DESCRIPTION:
  – Install a new 230/100 kV, 448 MVA transformer at Wilkes Tie.

• SUPPORTING STATEMENT:
  – Thermal overloads occur near North Wilkesboro Tie and additional voltage support is needed in the area under contingency.
QUESTIONS?

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