PJM – SERTP
Regional Transmission Plan Review

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

May 8th, 2018
Georgia Power Company Headquarters
Atlanta, GA
Agenda

- Final 2017 SERTP Regional Transmission Plan – PJM Seam
- SERTP Modeling Input Assumptions
SERTP Regional Modeling Assumptions

Balancing Authority Areas
- AECI
- DUKE – Carolinas
- DUKE – Progress East
- DUKE – Progress West
- LG&E/KU
- OVEC
- PowerSouth
- Southern
- TVA
DUKE CAROLINAS Balancing Authority Area

SERTP REGIONAL TRANSMISSION EXPANSION PLAN
SADLER TIE – DAN RIVER 100 KV T.L.

DESCRIPTION:
Construct approximately 9.2 miles of new 100 kV transmission line between Dan River Steam Station and Sadler Tie with 954 ACC at 120°C.

SUPPORTING STATEMENT:
Thermal overloads occur around Dan River Steam Station and Dan River Combined Cycle Station under contingency.

Construct 8.2 miles of new 100 kV T.L.
WILKES TIE 230 KV SUBSTATION

**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.
DUKE CAROLINAS Balancing Authority Area

UPCOMING 2018
GENERATION ASSUMPTIONS
The following diagram depicts the location of generation assumptions that change throughout the ten year planning horizon for the 2018 SERTP Process.
The following table depicts the generation assumptions that change throughout the ten year planning horizon for the 2018 SERTP Process. The years shown represent Summer Peak conditions.

<table>
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<tr>
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DUKE PROGRESS EAST Balancing Authority Area

SERTP REGIONAL TRANSMISSION EXPANSION PLAN
RECONDUCTOR 10 MILES OF 230 KV T.L. WITH 6-1590 ACSR

DESCRIPTION:
Reconductor approximately 10 miles of the Durham – RTP 230 kV transmission line with bundled 6-1590 ACSR rated for 1195 MVA.

SUPPORTING STATEMENT:
The Durham – RTP 230 kV transmission line overloads under contingency.
DUKE PROGRESS WEST Balancing Authority Area

SERTP REGIONAL TRANSMISSION EXPANSION PLAN
DESCRIPTION:
Upgrade the two existing 230/115 kV transformers to 400 MVA each, reconductor approximately 1.2 miles of the 115 kV north and south transformer tie lines with 1590 ACSR at 100°C, replace the existing breakers with 3000 A breakers, and install a 72 MVAR 230 kV capacitor bank.

SUPPORTING STATEMENT:
Necessary upgrades to allow for the interconnection of two combined cycle units at Asheville Plant.
DUKE PROGRESS EAST/WEST
Balancing Authority Areas

UPCOMING 2018
GENERATION ASSUMPTIONS
The following diagram depicts the location of generation assumptions that change throughout the ten year planning horizon for the 2018 SERTP Process.
DUKE PROGRESS – Generation Assumptions

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</table>
The following table depicts the generation assumptions that change throughout the ten year planning horizon for the 2018 SERTP Process. The years shown represent Summer Peak conditions.

<table>
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<tr>
<th>SITE</th>
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LG&E/KU Balancing Authority Area

SERTP REGIONAL TRANSMISSION EXPANSION PLAN
DESCRIPTION:
Install a 0.66% 345 kV reactor at Trimble County in the Trimble County – Clifty Creek 345 kV transmission line.

SUPPORTING STATEMENT:
The Trimble County – Clifty Creek 345 kV transmission line overloads under contingency.
UPCOMING 2018 GENERATION ASSUMPTIONS
LG&E/KU Balancing Authority Area

LG&E/KU – Generation Assumptions

The following diagram depicts the location of generation assumptions that change throughout the ten year planning horizon for the 2018 SERTP Process.

Existing Generation

Future Generation

Brown Generation
The following table depicts the generation assumptions that change throughout the ten year planning horizon for the 2018 SERTP Process. The years shown represent Summer Peak conditions.

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OVEC has no transmission projects included in the 2017 SERTP Regional Transmission Expansion Plan. In addition, OVEC has no generation assumptions expected to change throughout the ten year planning horizon for the 2018 SERTP Planning Processes.
TVA Balancing Authority Area

SERTP REGIONAL TRANSMISSION EXPANSION PLAN
DESCRIPTION:
Double circuit approximately 17 miles of the Tusculum - Jonesborough 161 kV transmission line with 954 ACSR at 100°C.

SUPPORTING STATEMENT:
The Tusculum - Jonesborough 161 kV transmission line overloads under contingency.
DESCRIPTION:
Rebuild approximately 15 miles of the Knox - Douglas 161 kV transmission line with 954 ACSS at 125°C.

SUPPORTING STATEMENT:
The Knox - Douglas 161 kV transmission line overloads under contingency.
DESCRIPTION:
Rebuild structures with weathered steel in the Phipps Bend 161 kV yard.

SUPPORTING STATEMENT:
Some steel structures are beginning to show signs of corrosion and will be replaced.
DESCRIPTION:
Install 500 kV breakers on the Pocket and Nagel lines at the Phipps Bend substation.

SUPPORTING STATEMENT:
Bus fault contingencies at Phipps Bend cause elements to overload.
TVA Balancing Authority Area

UPCOMING 2018 GENERATION ASSUMPTIONS
The following diagram depicts the location of generation assumptions that change throughout the ten year planning horizon for the 2018 SERTP Process.
TVA – Generation Assumptions

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QUESTIONS?

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