



# PJM – SERTP

## Regional Transmission Plan Review

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

May 8<sup>th</sup>, 2018

Georgia Power Company Headquarters

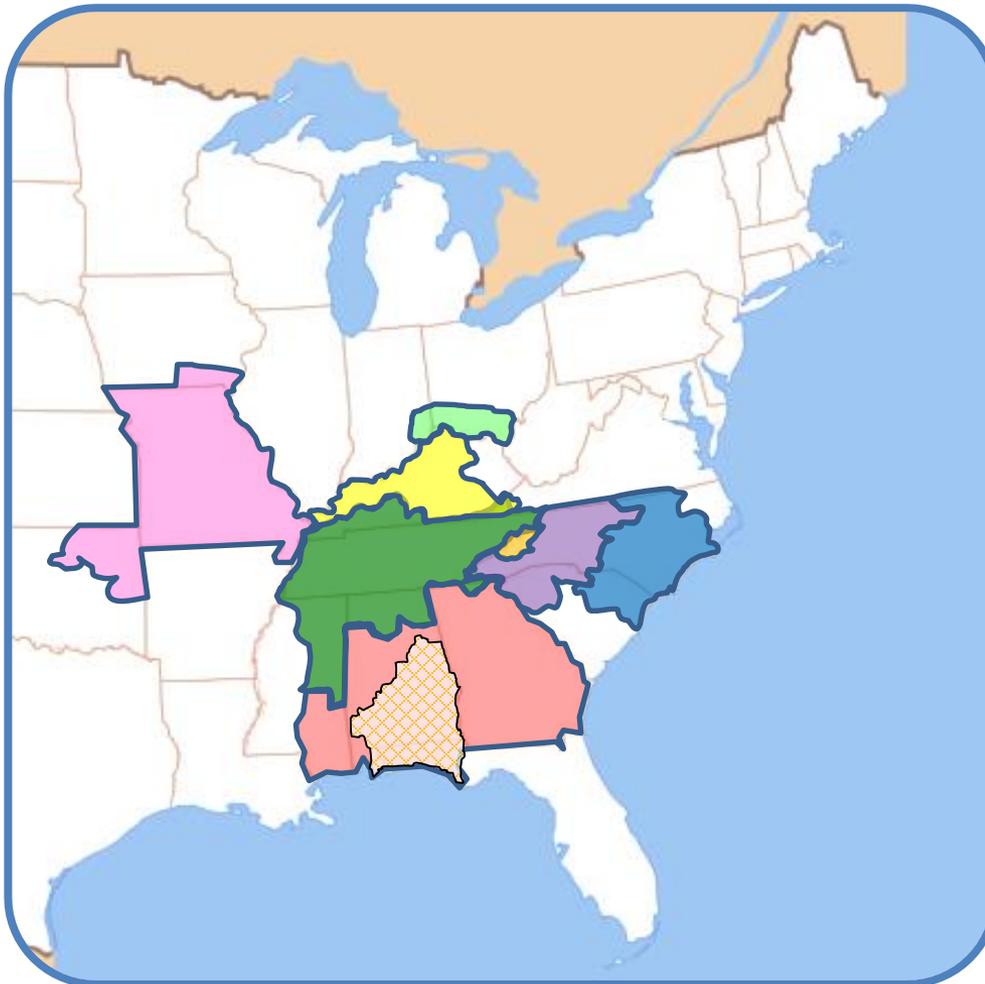
Atlanta, GA

# Agenda

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

## SERTP Regional Modeling Assumptions

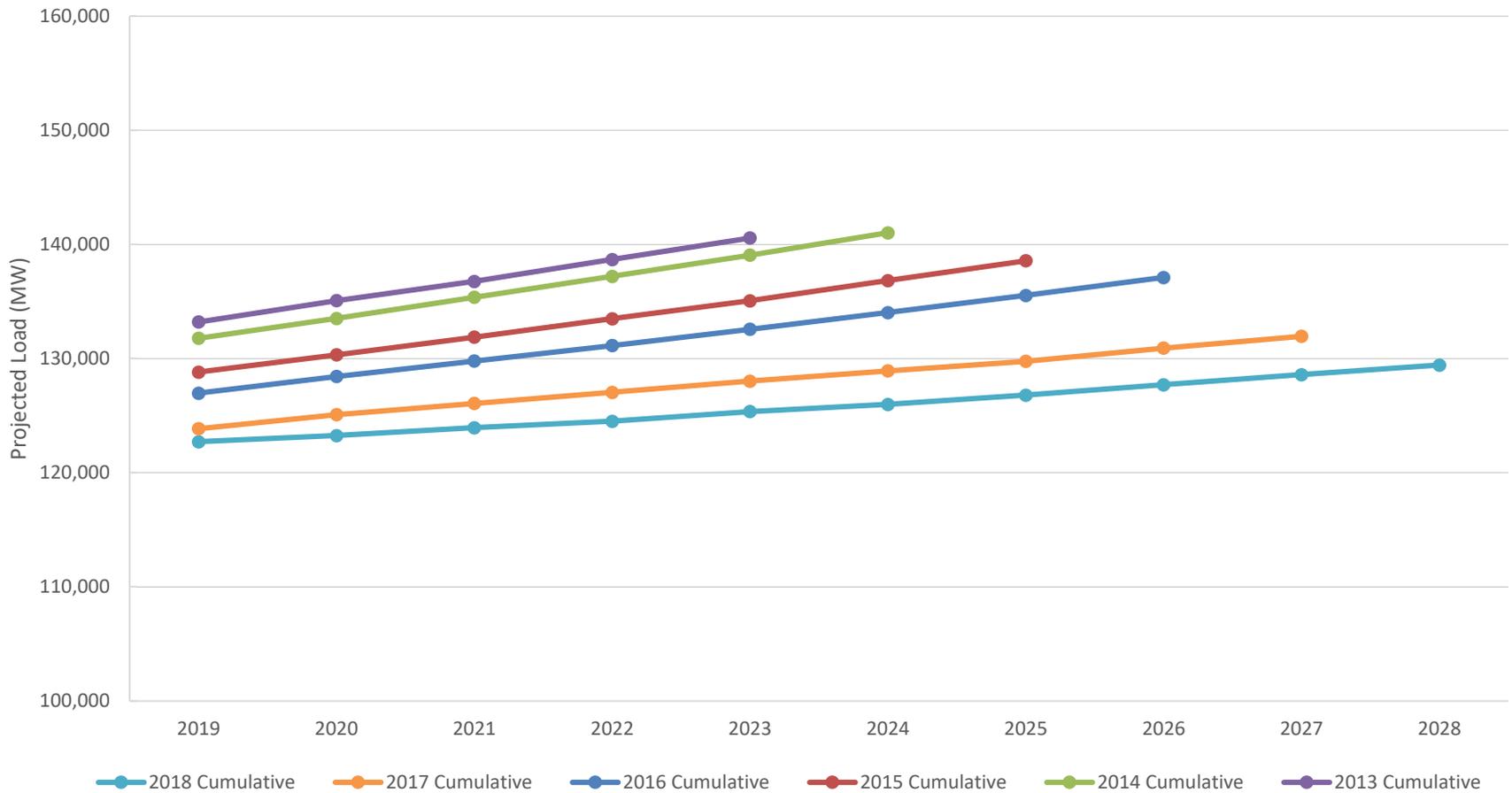


### Balancing Authority Areas

-  AECI
-  DUKE – Carolinas
-  DUKE – Progress East
-  DUKE – Progress West
-  LG&E/KU
-  OVEC
-  PowerSouth
-  Southern
-  TVA

## SERTP Cumulative Summer Peak Load Forecast

SERTP Region - Cumulative Summer Peak Load Forecast

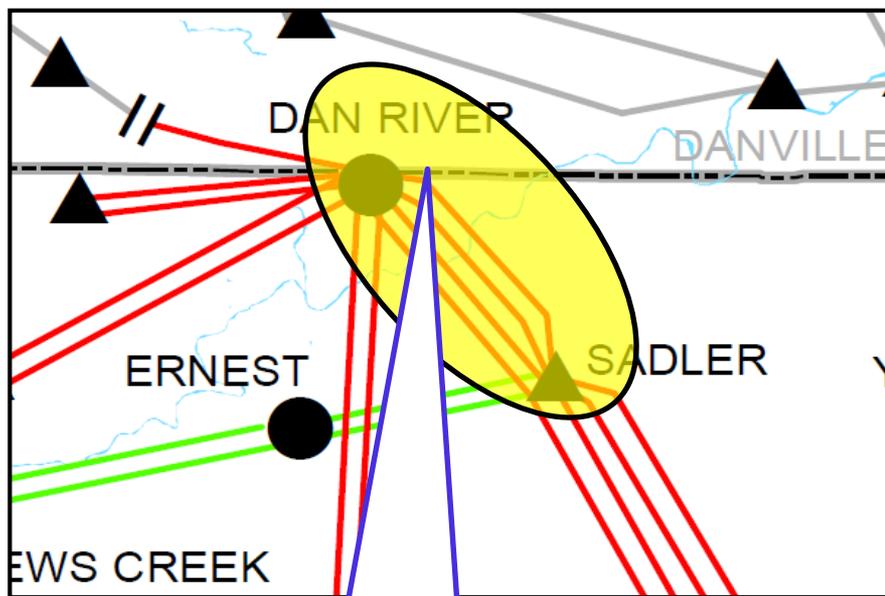


DUKE CAROLINAS Balancing Authority Area  
**SERTP REGIONAL TRANSMISSION  
EXPANSION PLAN**

# DUKE CAROLINAS – 1

2020

## SADLER TIE – DAN RIVER 100 KV T.L.



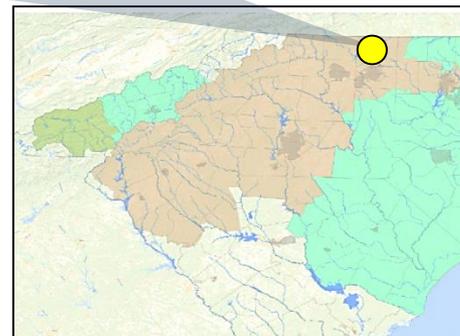
Construct 8.2 miles of new 100  
KV T.L.

### 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.





DUKE CAROLINAS Balancing Authority Area

UPCOMING 2018

GENERATION ASSUMPTIONS

## DUKE CAROLINAS – 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

## DUKE CAROLINAS – Generation Assumptions

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.

SITE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
ALLEN 1	174	174	174	174	174	174	0	--	--	--
ALLEN 2	172	172	172	172	172	172	0	--	--	--
ALLEN 3	271	271	271	271	271	271	0	--	--	--

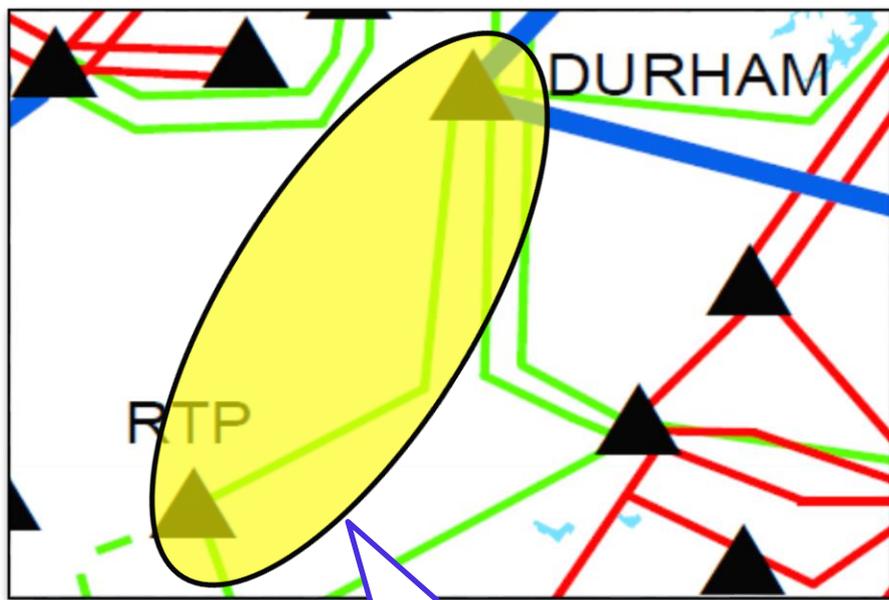
# DUKE PROGRESS EAST Balancing Authority Area

## SERTP REGIONAL TRANSMISSION EXPANSION PLAN

# DUKE PROGRESS EAST – 1

2027

## DURHAM – RTP 230 KV T.L.



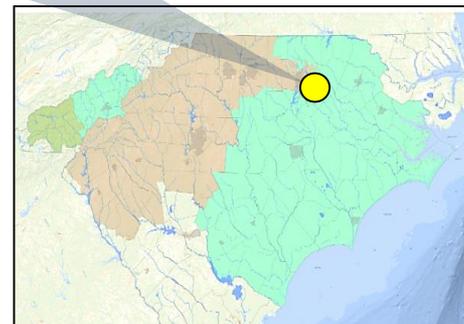
RECONDUCTOR 10 MILES OF 230 KV  
T.L. WITH 6-1590 ACSR

### 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.



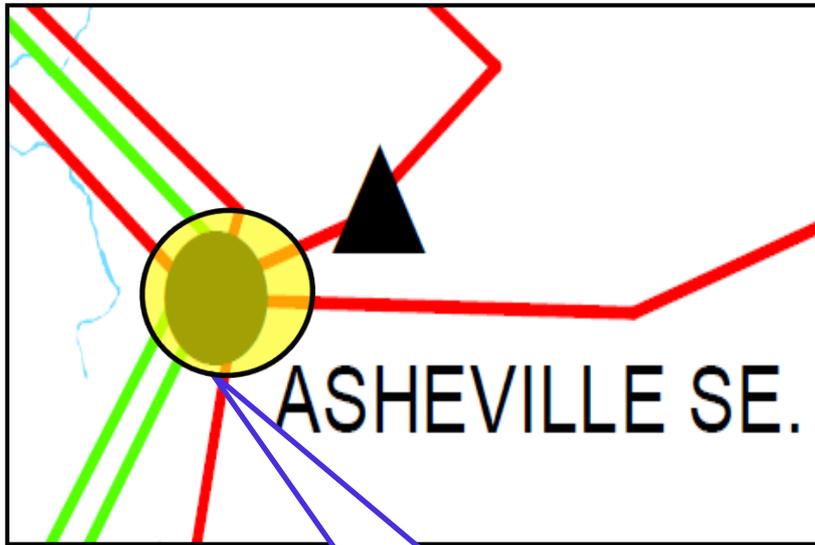
# DUKE PROGRESS WEST Balancing Authority Area

## SERTP REGIONAL TRANSMISSION EXPANSION PLAN

# DUKE PROGRESS WEST – 1

2019

## ASHEVILLE SE PLANT



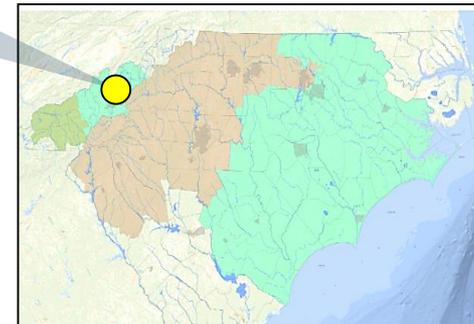
REPLACE TRANSFORMERS. REBUILD 1.2 MILES OF 115 KV TL WITH 1590 ACSR. REPLACE BREAKERS WITH 3000 A BREAKERS. INSTALL 72 MVAR CAPACITOR BANK.

### 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.

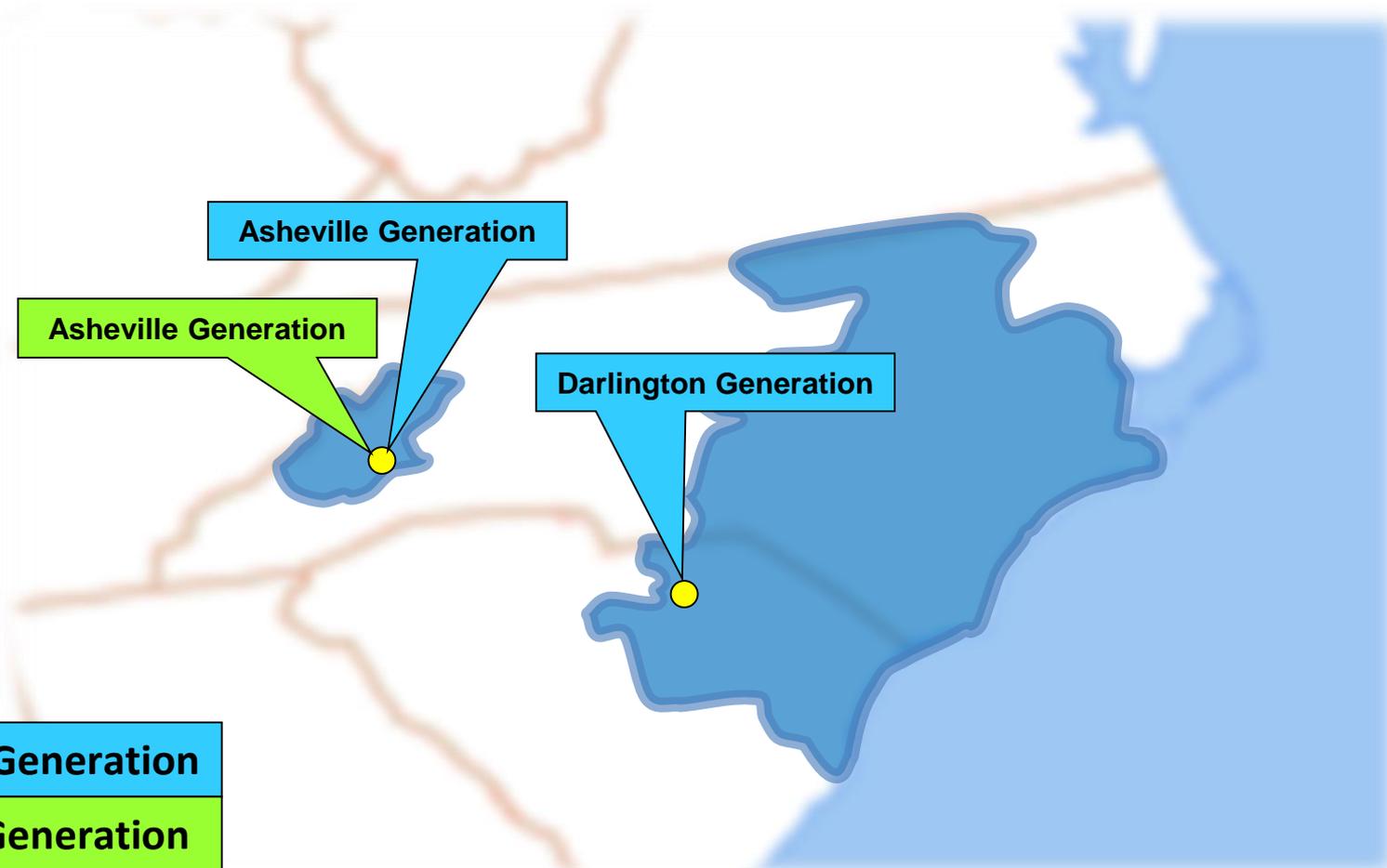


# DUKE PROGRESS EAST/WEST Balancing Authority Areas

## UPCOMING 2018 GENERATION ASSUMPTIONS

## DUKE PROGRESS – 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 (Cont.)

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.

SITE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
DARLINGTON CT #7	51	0	--	--	--	--	--	--	--	--
DARLINGTON CT #8	48	0	--	--	--	--	--	--	--	--
DARLINGTON CT #9	52	0	--	--	--	--	--	--	--	--
DARLINGTON CT #10	51	0	--	--	--	--	--	--	--	--

LG&E/KU Balancing Authority Area

# SERTP REGIONAL TRANSMISSION EXPANSION PLAN

# LG&E/KU - 1

2019

## TRIMBLE COUNTY – CLIFTY CREEK 345 KV T.L.

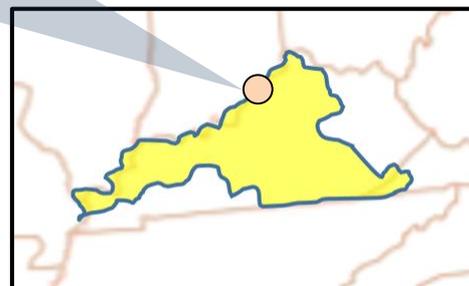


### DESCRIPTION:

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.



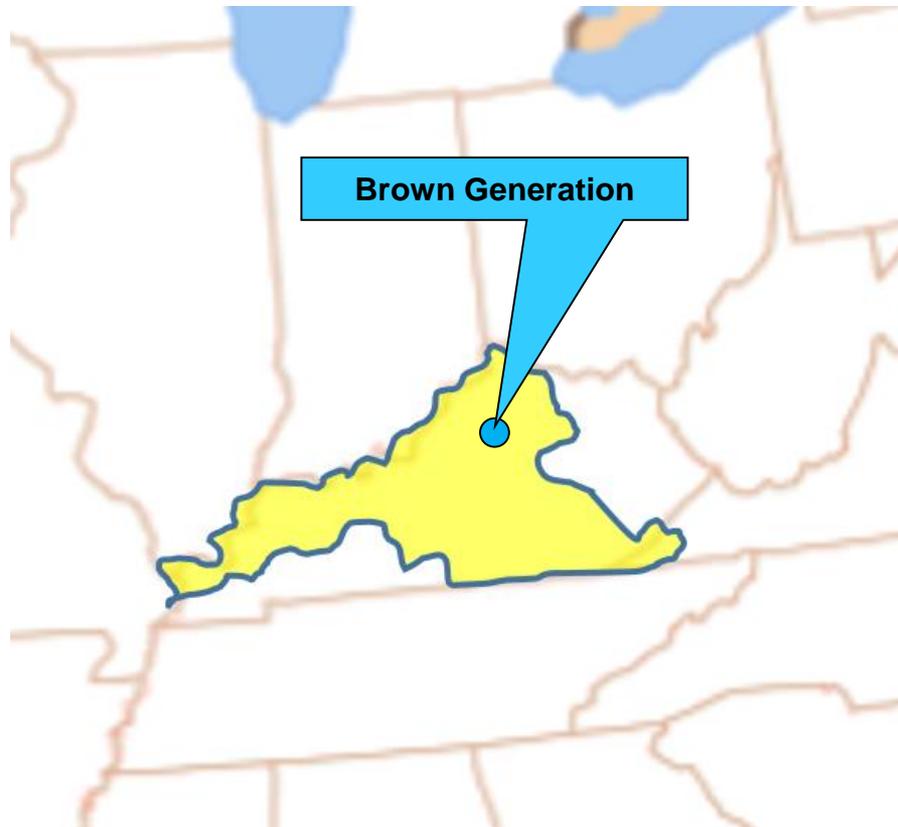
## LG&E/KU Balancing Authority Area

**UPCOMING 2018**

**GENERATION ASSUMPTIONS**

## 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

## LG&E/KU – Generation Assumptions

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.

SITE	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
BROWN 1	112	0	--	--	--	--	--	--	--	--	--
BROWN 2	176	0	--	--	--	--	--	--	--	--	--

## OVEC Balancing Authority Area

# SERTP REGIONAL TRANSMISSION EXPANSION PLAN & UPCOMING 2018 GENERATION ASSUMPTIONS

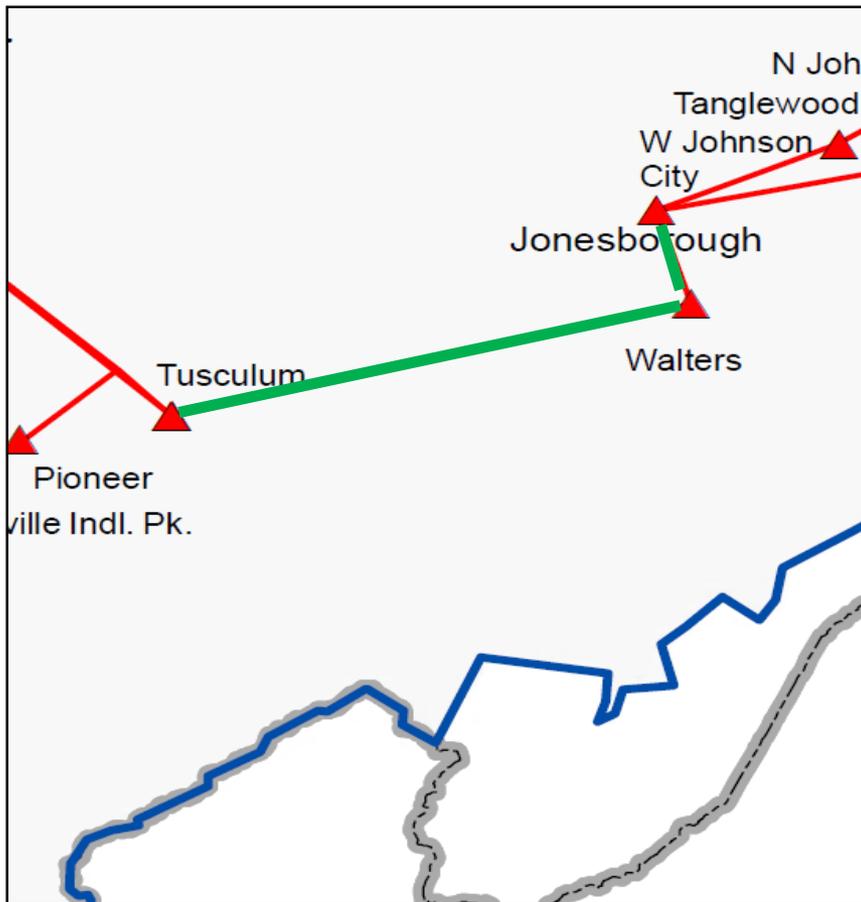
- \* OVEC has no transmission projects included in the 2017 SERTP Regional Transmission Expansion Plan. In addition, OVEC has no generation assumptions expected to change throughout the ten year planning horizon for the 2018 SERTP Planning Processes.

# TVA Balancing Authority Area SERTP REGIONAL TRANSMISSION EXPANSION PLAN

## TVA – 1

2020

### TUSCULUM – JONESBOROUGH 161 KV T.L.

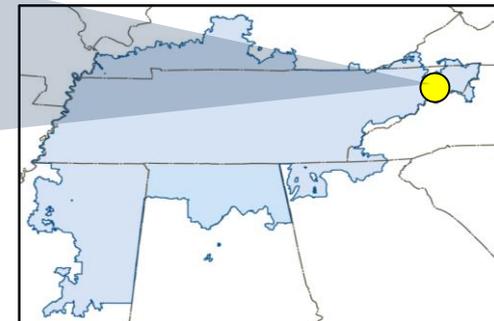


#### DESCRIPTION:

Double circuit approximately 17 miles of the Tusculum - Jonesborough 161 kv transmission line with 954 ACSR at 100°C.

#### SUPPORTING STATEMENT:

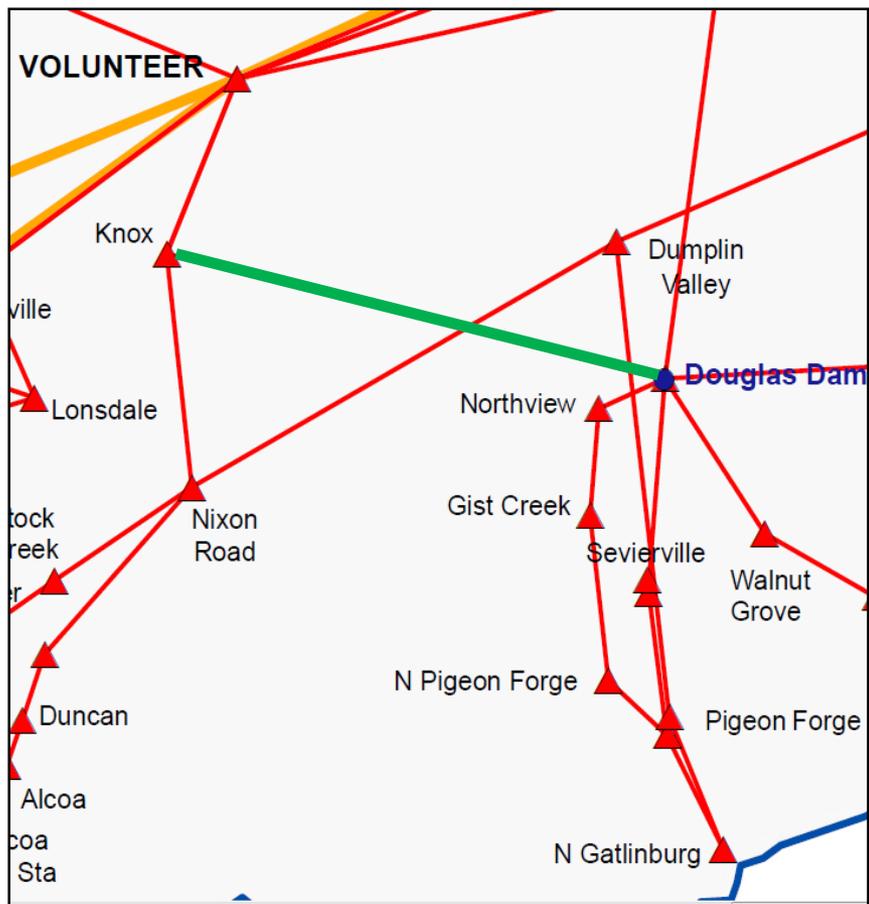
The Tusculum - Jonesborough 161 kv transmission line overloads under contingency.



## TVA – 2

2021

### KNOX – DOUGLAS 161 KV T.L.

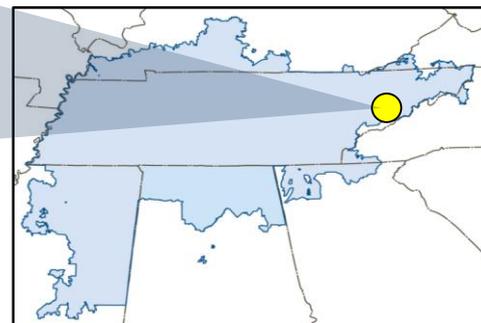


#### DESCRIPTION:

Rebuild approximately 15 miles of the Knox - Douglas 161 kV transmission line with 954 ACSS at 125°C.

#### SUPPORTING STATEMENT:

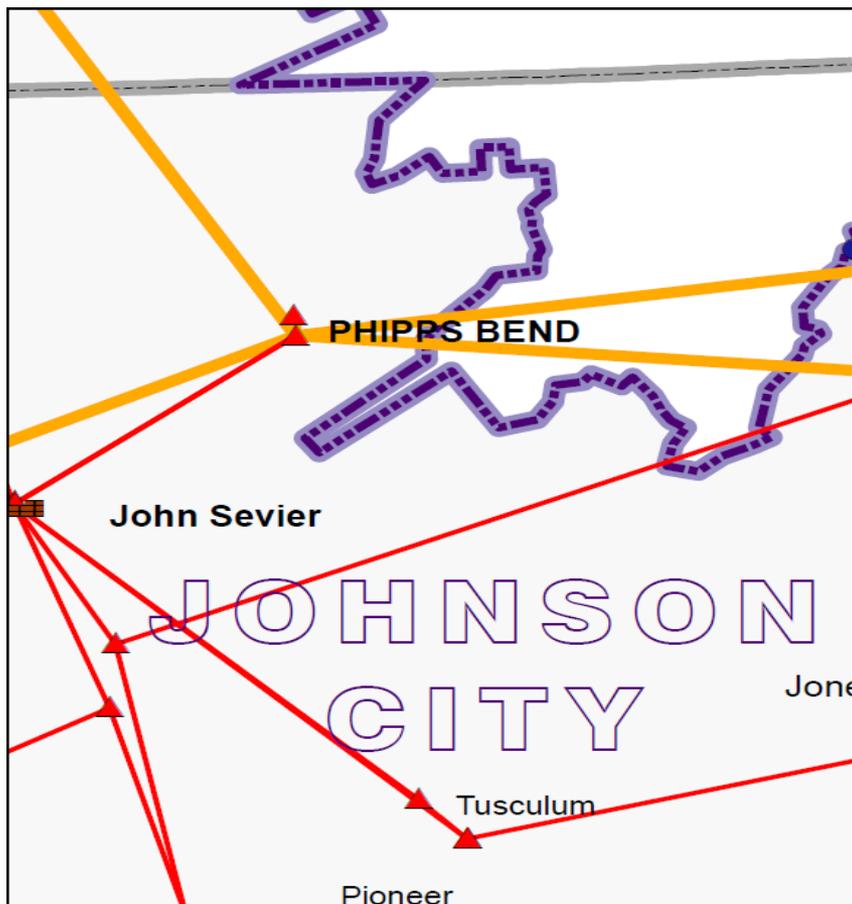
The Knox - Douglas 161 kV transmission line overloads under contingency.



# TVA – 3

2021

## PHIPPS BEND – REPLACE WEATHERED STEEL STRUCTURES

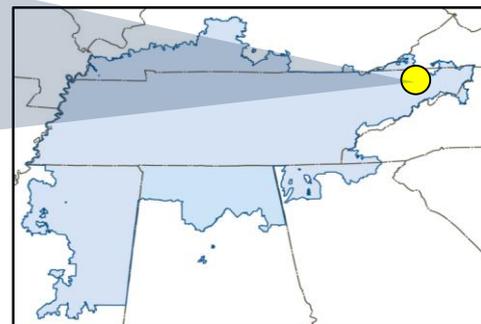


### DESCRIPTION:

Rebuild structures with weathered steel in the Phipps Bend 161 kV yard.

### SUPPORTING STATEMENT:

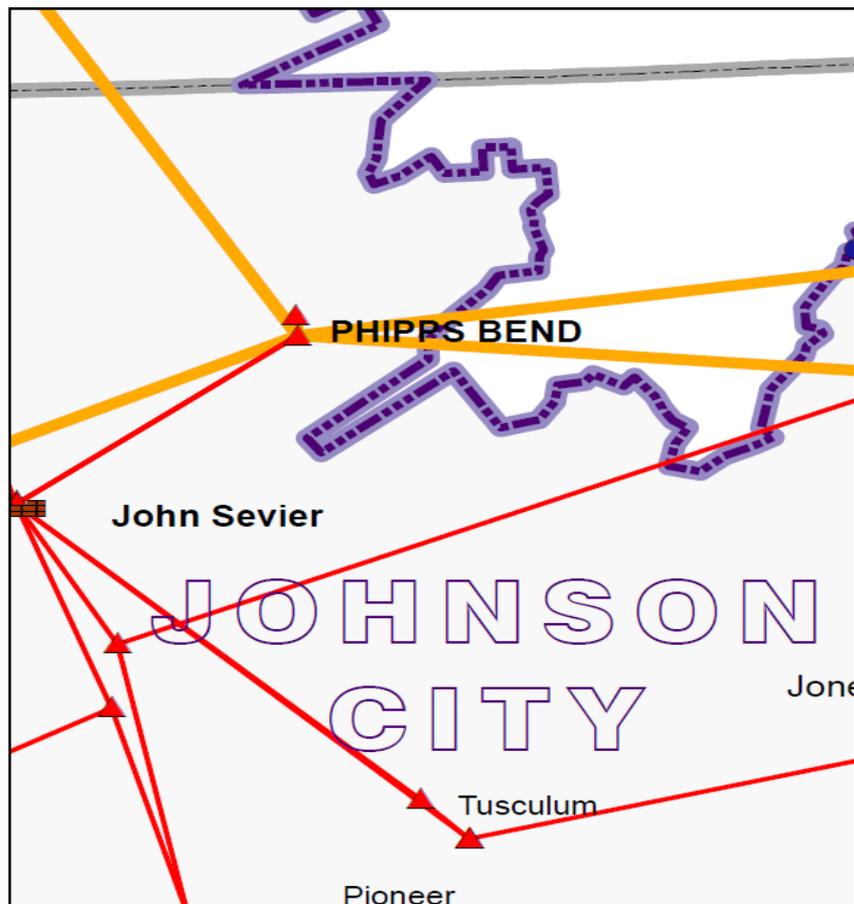
Some steel structures are beginning to show signs of corrosion and will be replaced.



## TVA – 4

2023

### PHIPPS BEND – INSTALL BREAKERS

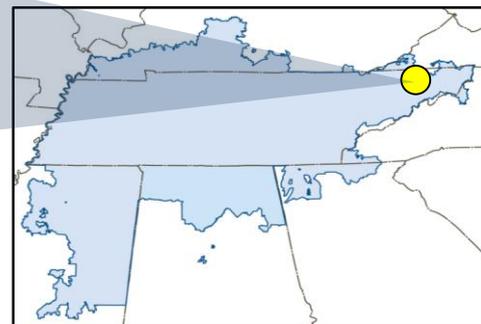


#### DESCRIPTION:

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.



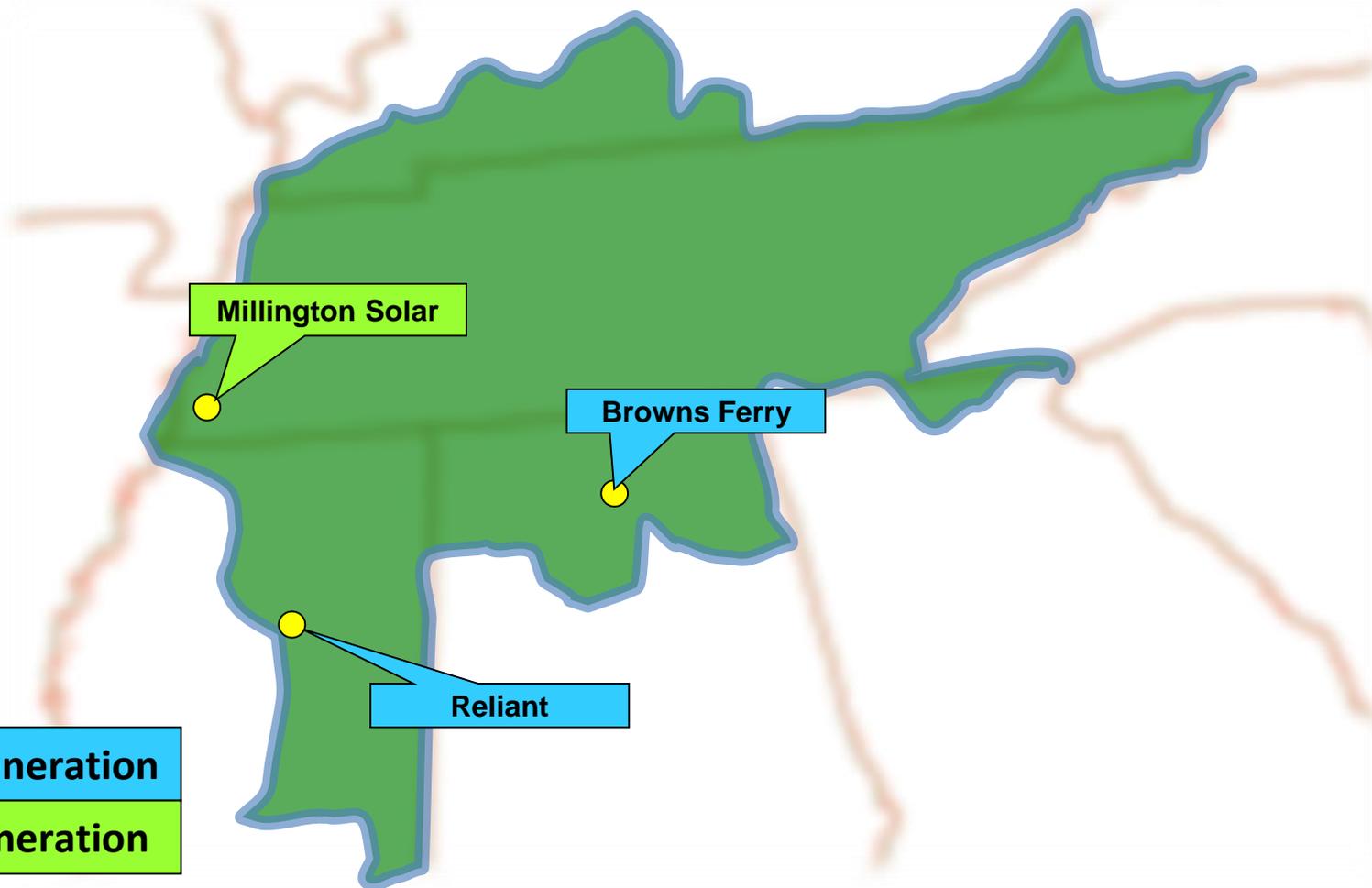
## TVA Balancing Authority Area

**UPCOMING 2018**

**GENERATION ASSUMPTIONS**

# TVA – 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

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.

SITE	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
BROWNS FERRY UNIT 1	1262	1262	1262	1262	1262	1262	1262	1262	1262	1262
BROWNS FERRY UNIT 2	1266	1266	1266	1266	1266	1266	1266	1266	1266	1266
MILLINGTON SOLAR	53	53	53	53	53	53	53	53	53	53

# QUESTIONS?

[WWW.SOUTHEASTERNRTP.COM](http://WWW.SOUTHEASTERNRTP.COM)