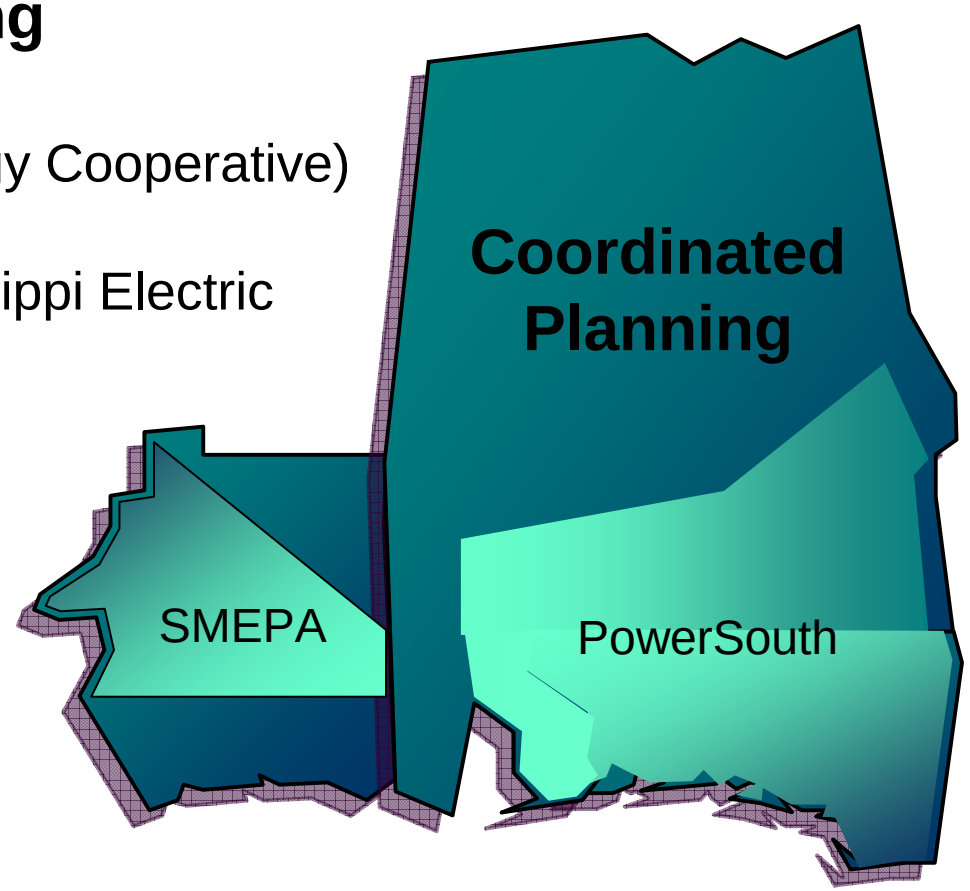
Southeastern Region Transmission Planning

West Region

Coordinated Planning

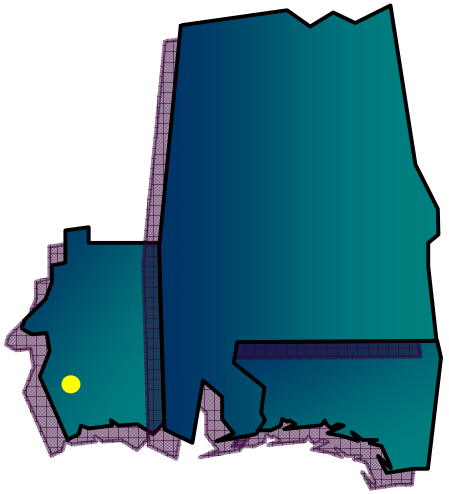
- PS (PowerSouth Energy Cooperative)
- SMEPA (South Mississippi Electric Power Association)
- Southern Company Transmission



Southeastern Region Transmission Planning

Expansion Item W-1

2011 W-1

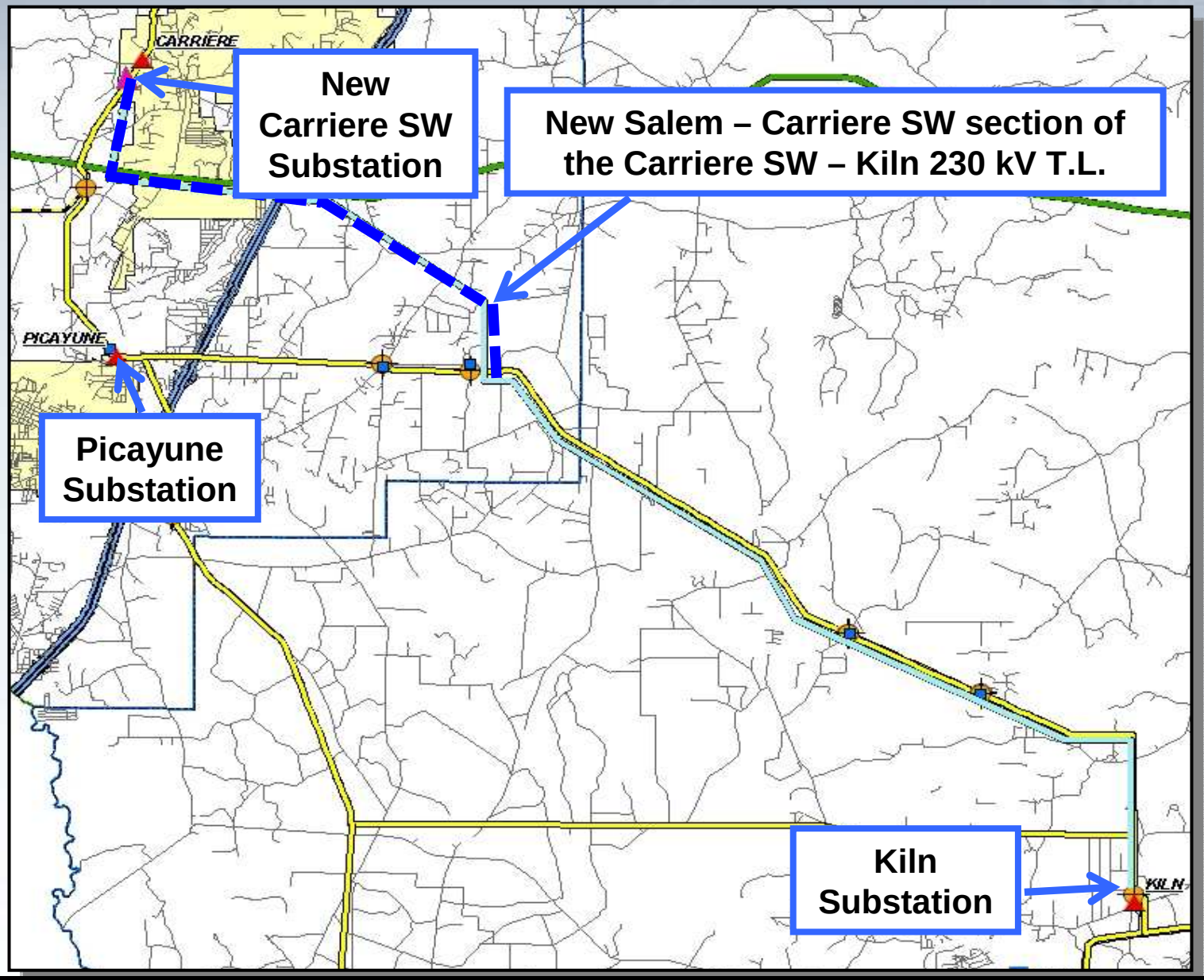


Carriere SW 230 / 115 kV Substation Project

- Construct a new 230 / 115 kV Carriere SW Substation approximately 5 miles north of Picayune 115 kV Substation
- Complete the 230 kV Ring Bus at Kiln
- Construct the 230 kV T.L section from Salem to Carrier SW to complete the 18.4 miles of 230 kV line from Kiln to Carriere SW.
- The loss of the Necaise – Spence 115 kV T.L overloads the Kiln – Nicholson Tap 115 kV T.L. and vice versa.

Carriere Southwest 230/115 kV Project

2011 W-1



Southeastern Region Transmission Planning

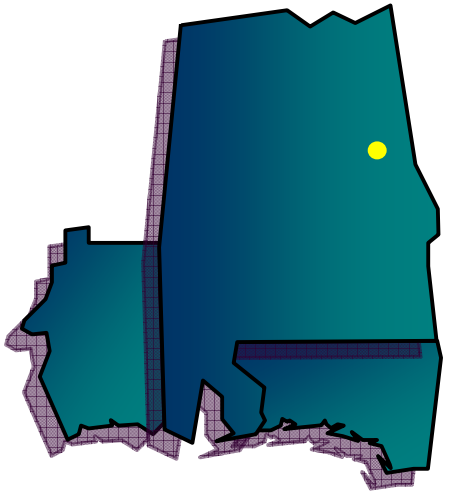
Expansion Item W-2

2011 W-2

Hillabee – North Opelika 230 kV T.L.

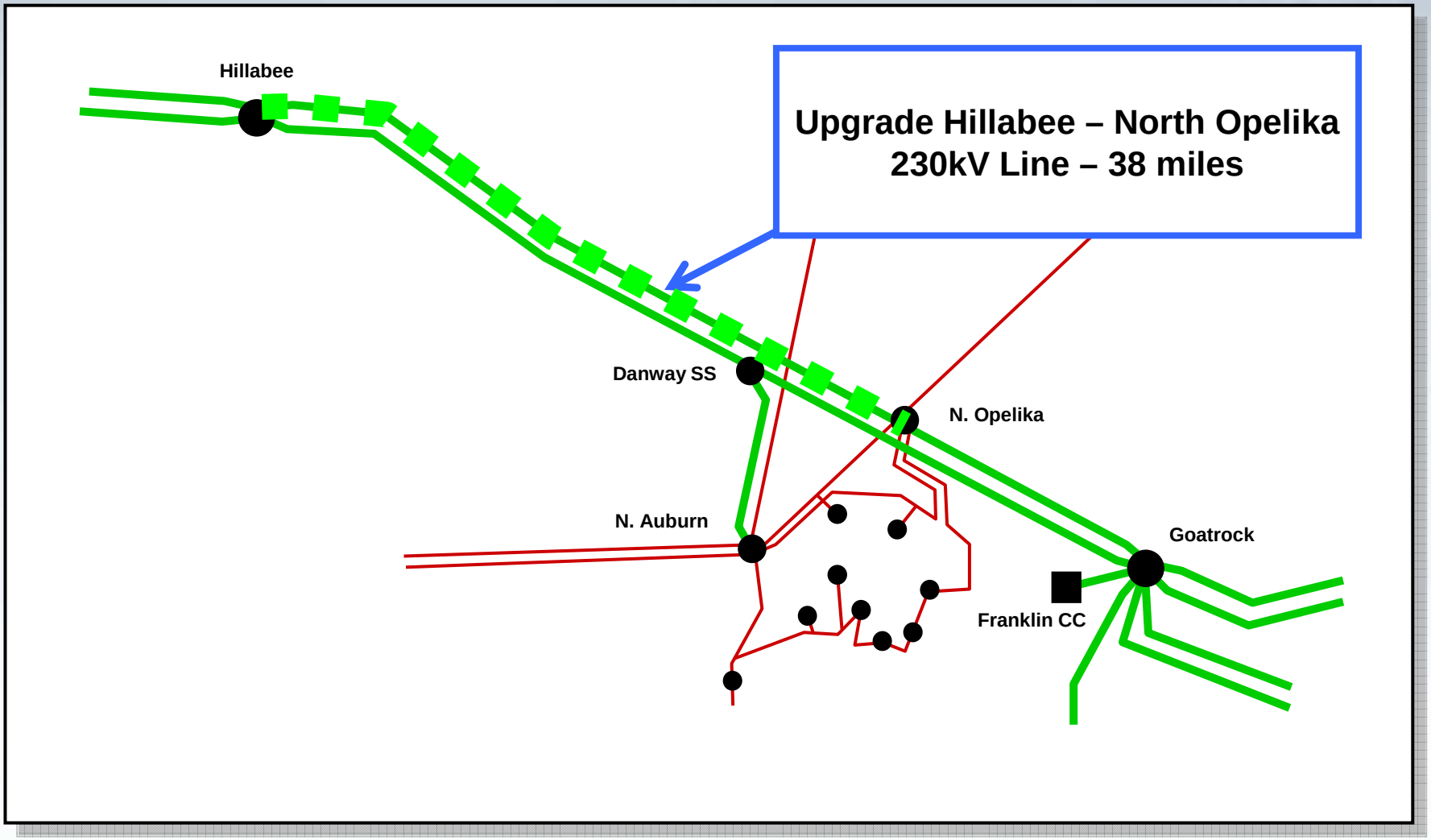
- Upgrade approximately 37.6 miles of 230 kV T.L. from Hillabee to North Opelika to 100°C operation.

- The loading on this line exceeds its thermal rating under contingency conditions.



2011 W-2

Hillabee – North Opelika 230 kV T.L. Upgrade



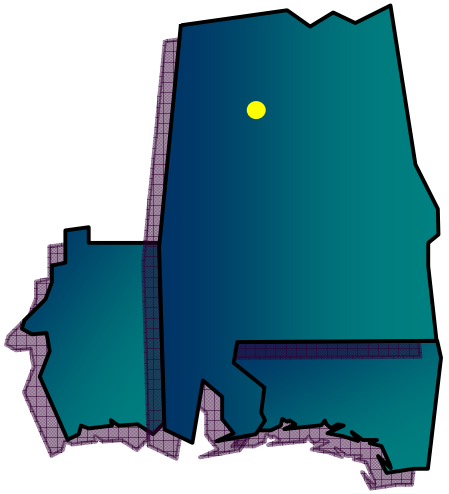
Southeastern Region Transmission Planning

Expansion Item W-3

Holt – Tuscaloosa 230 kV T.L.

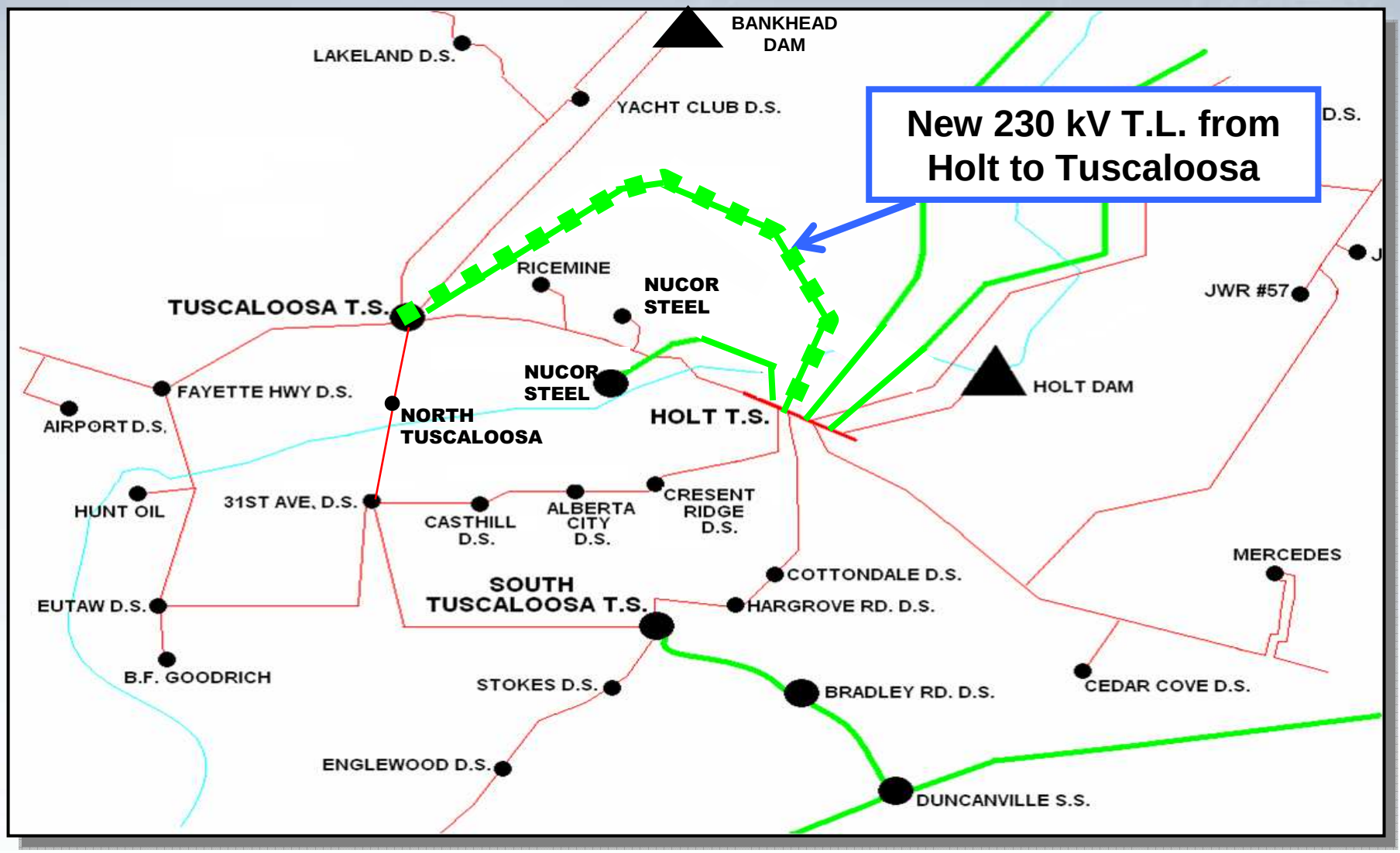
- Construct 6.9 miles of 230 kV T.L. from Holt to Tuscaloosa.
- The loss of the Holt – NUCOR Steel 115 kV T.L., with Greene County Unit #1 offline, causes thermal overloads in the Tuscaloosa area.

2011 W-3



2011 W-3

Holt – Tuscaloosa 230 kV T.L.



Southeastern Region Transmission Planning

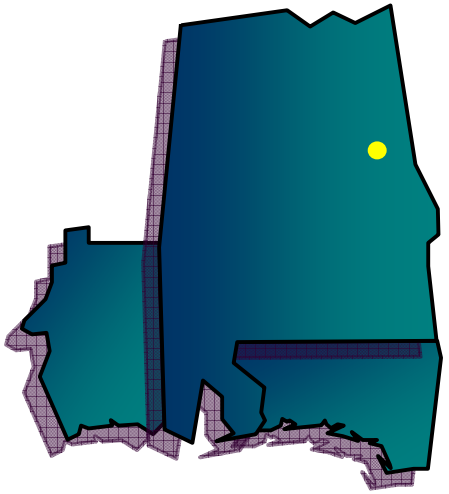
Expansion Item W-4

Hillabee – Danway 230 kV T.L.

- Upgrade approximately 32 miles of 230 kV T.L. from Hillabee to Danway S.S. to 110°C operation.

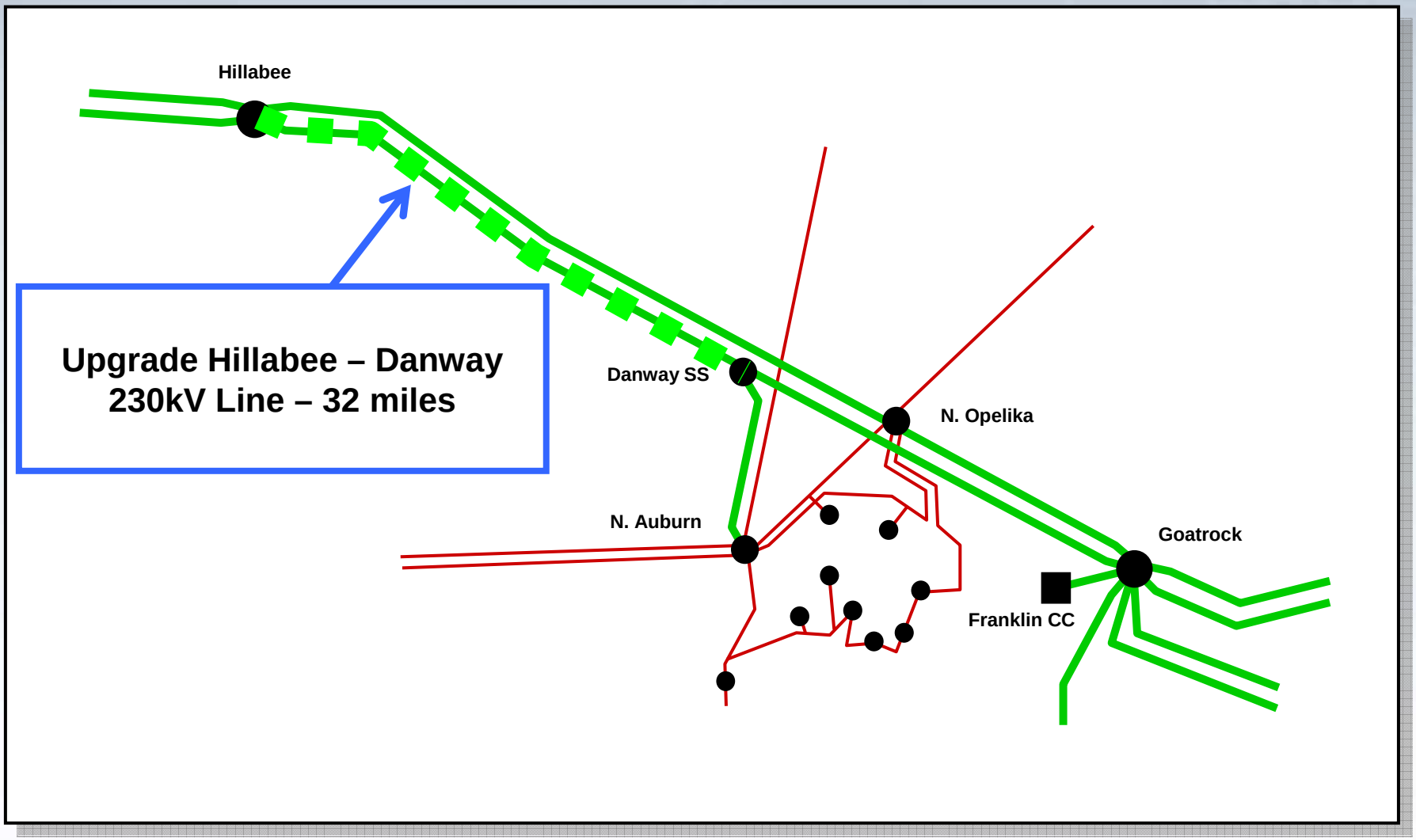
- The loading on this line exceeds its thermal rating under contingency conditions.

2012 W-4



2012 W-4

Hillabee – Danway S.S. 230 kV T.L. Upgrade



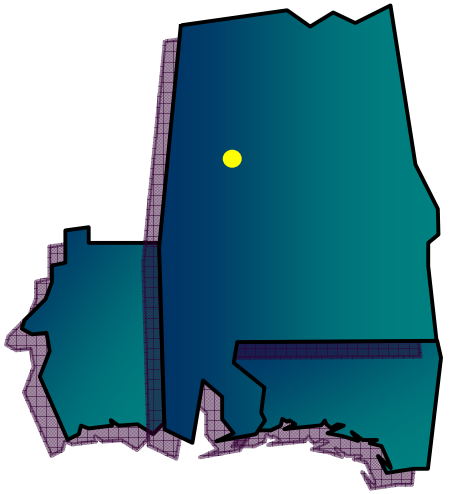
Southeastern Region Transmission Planning

Expansion Item W-5

Greene County Substation

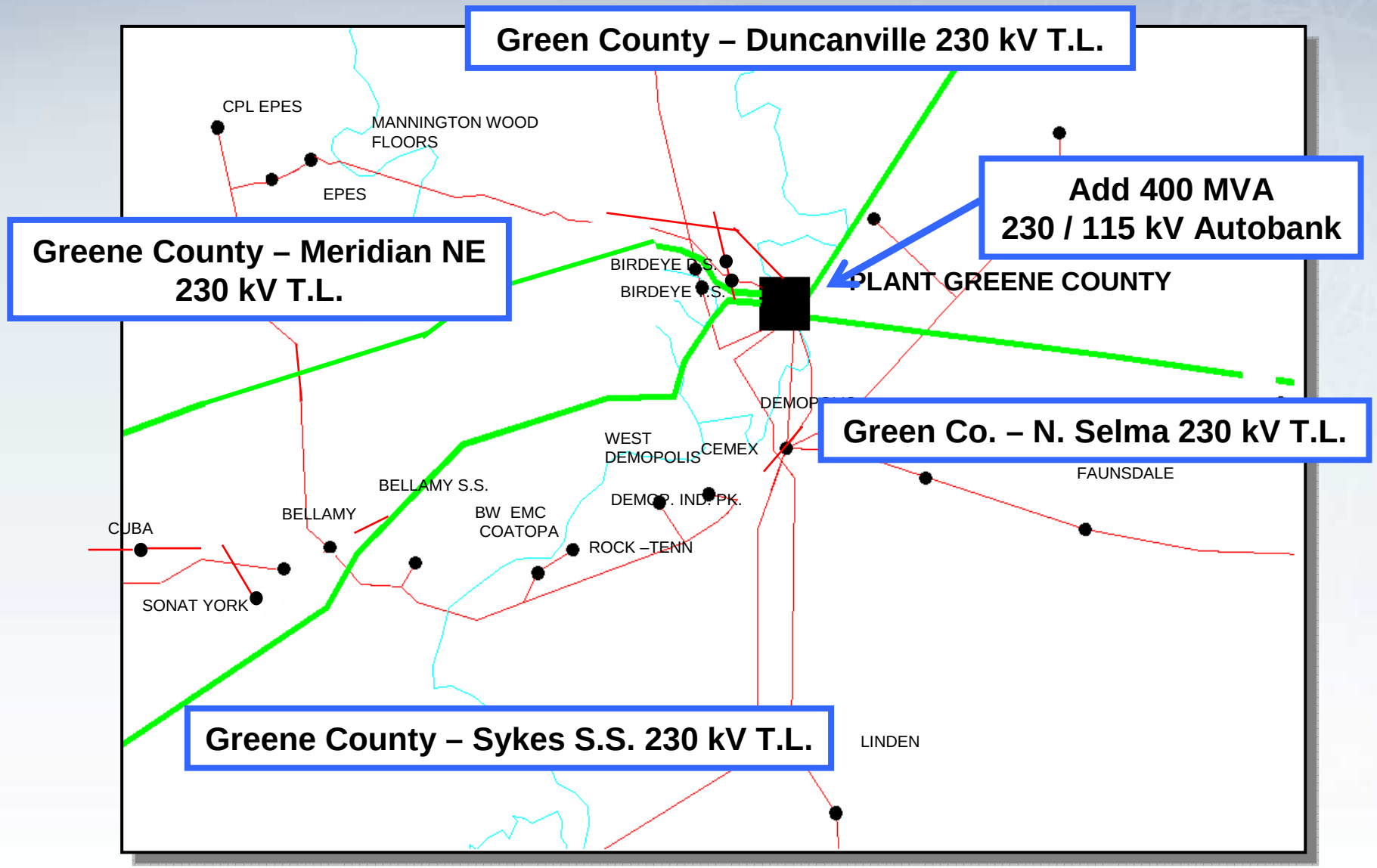
- Install a second 230 / 115 kV transformer at Greene County substation.
- The loss of the existing 230 / 115kV Transformer at Greene County SP causes the South Tuscaloosa – Eutaw 115kV Transmission Line to become overloaded.

2013 W-5



Greene County Substation

2013 W-5



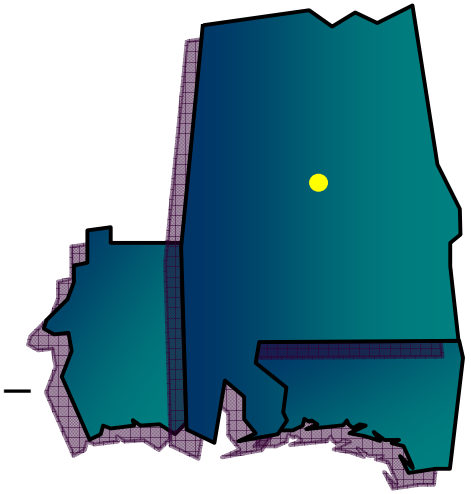
Southeastern Region Transmission Planning

Expansion Item W-6

Autaugaville 500 kV Substation

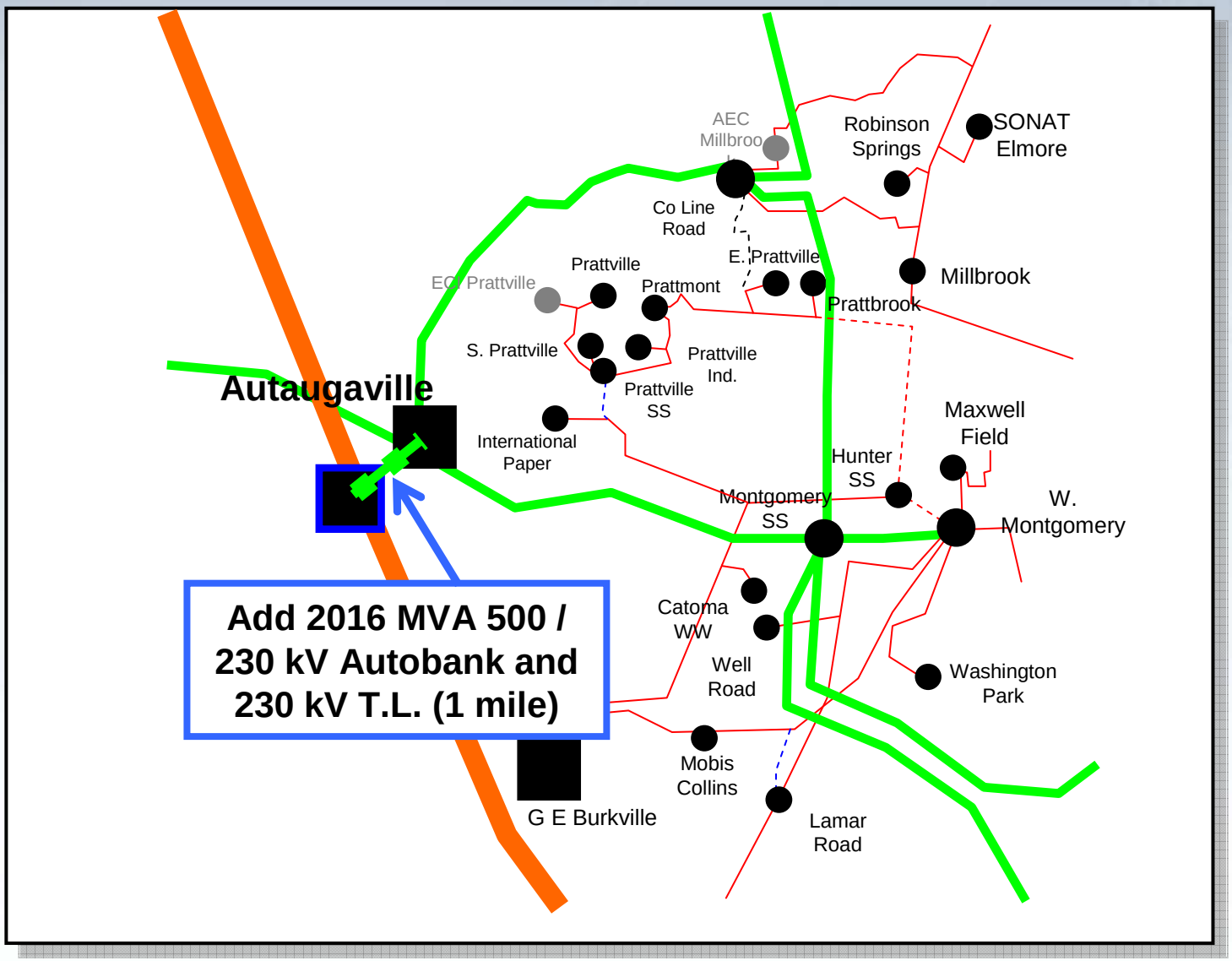
- Install a new 500 / 230 kV transformer at Autaugaville (2016 MVA)
- The loss of the Snowdoun – Autaugaville 500 kV T.L., with Harris Unit #1 offline, causes the Gaston – County Line Road 230 kV T.L. to overload.

2013 W-6



2013 W-6

Autaugaville 500 / 230 kV Transformer



Southeastern Region Transmission Planning

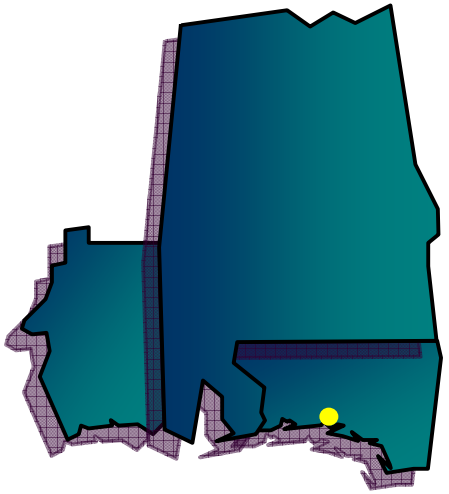
Expansion Item W-7

Laguna Beach 230 / 115 kV Substation

- Install a second 230 / 115 kV transformer at Laguna beach substation.

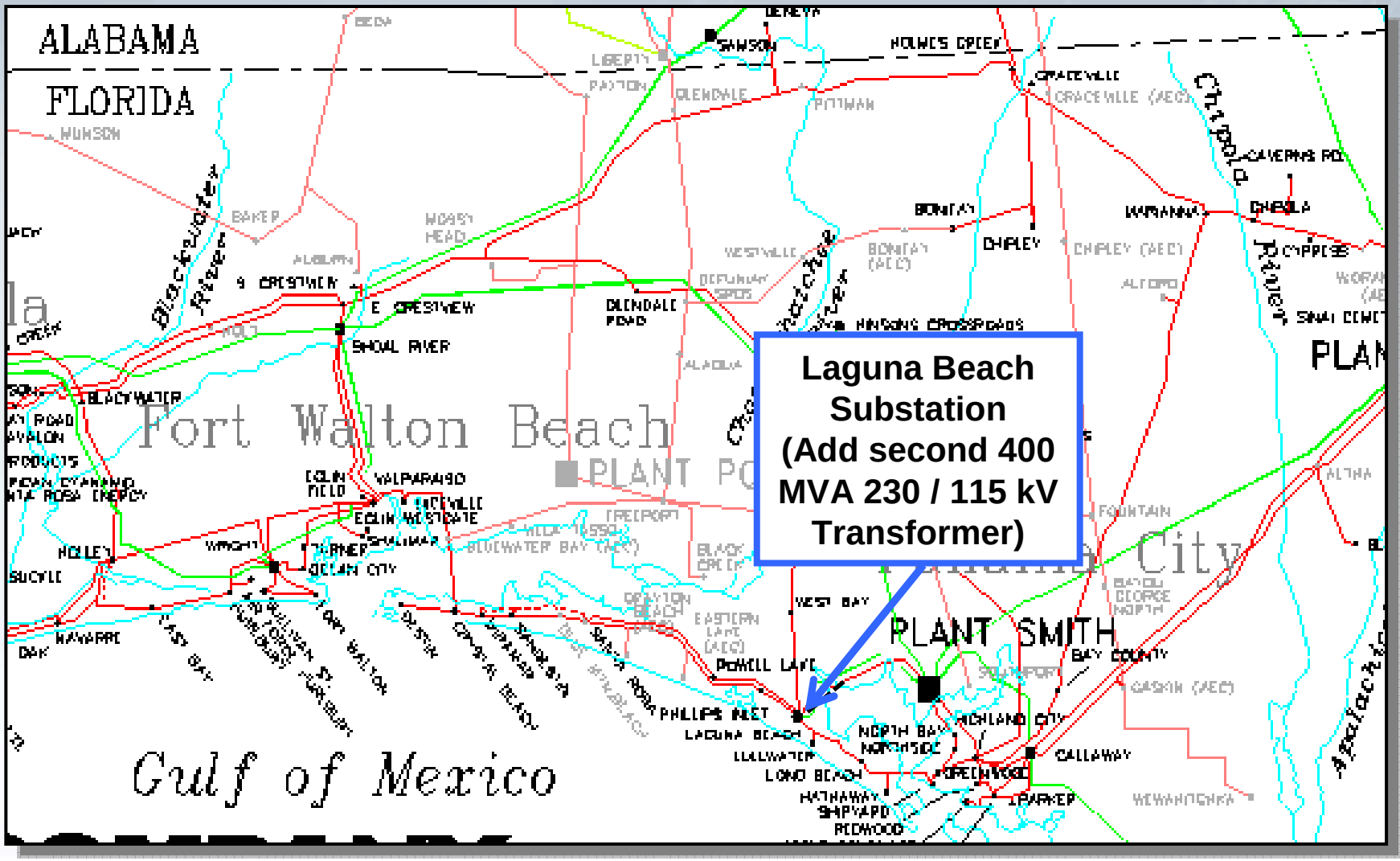
- The loss of the Smith 230 / 115 kV transformer, with Smith unit #1 offline, overloads the Laguna Beach 230 / 115 kV transformer.

2013 W-7



2013 W-7

Laguna Beach 230 / 115 kV Substation



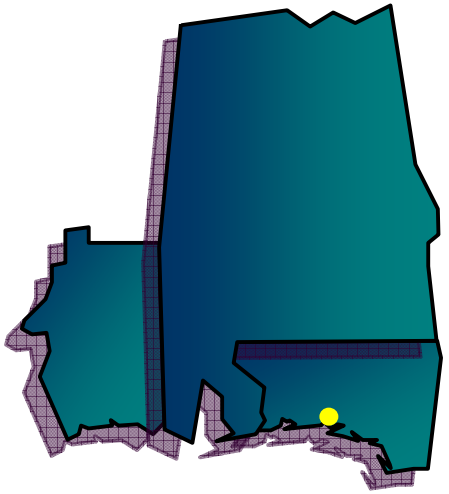
Southeastern Region Transmission Planning

Expansion Item W-8

Smith – Laguna Beach 230 kV T.L.

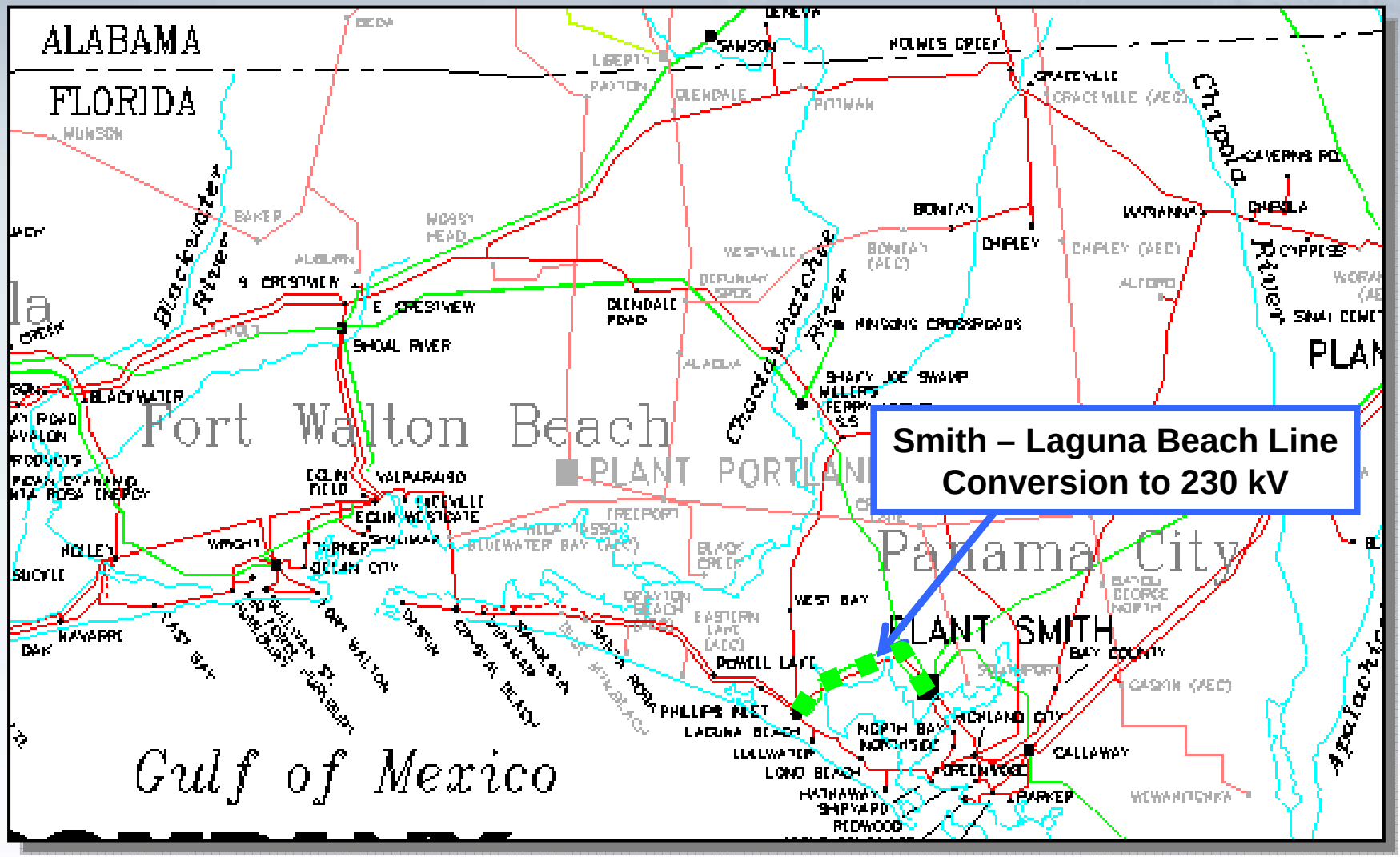
- Convert the Smith – Laguna Beach 115 kV T.L. to 230 kV operation.
- The loss of one of the Laguna Beach 230 / 115 kV transformers, with Crist unit #7 offline, causes the Smith – Laguna Beach 115 kV to exceed its thermal limit.

2013 W-8



Smith – Laguna Beach 115 kV T.L.

2013 W-8



Southeastern Region Transmission Planning

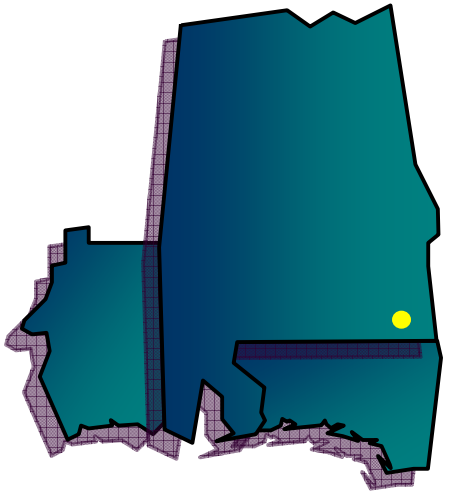
Expansion Item W-9

2013 W-9

Pinckard – Slocomb 115 kV T.L.

- Reconductor 12.5 miles of 115 kV T.L. with 1033 ACSS at 160º C. Upgrade the Holmes Creek terminals at Pinckard T.S. to 2000 A.

- The loss of Farley – Sinai Cemetery 230 kV T.L., with Smith unit #3 offline, causes the Pinckard – Slocomb 115 kV T.L. to overload.



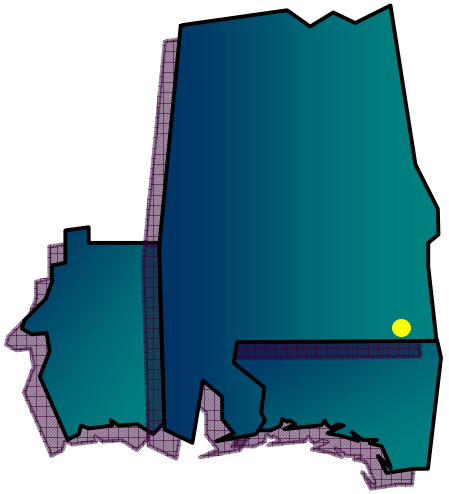
Southeastern Region Transmission Planning

Expansion Item W-10

2014 W-10

Slocomb – Holmes Creek 115 kV T.L.

- Reconductor 10.4 miles of 115 kV T.L. from Slocomb to Holmes Creek with 1033 ACSS at 160º C.



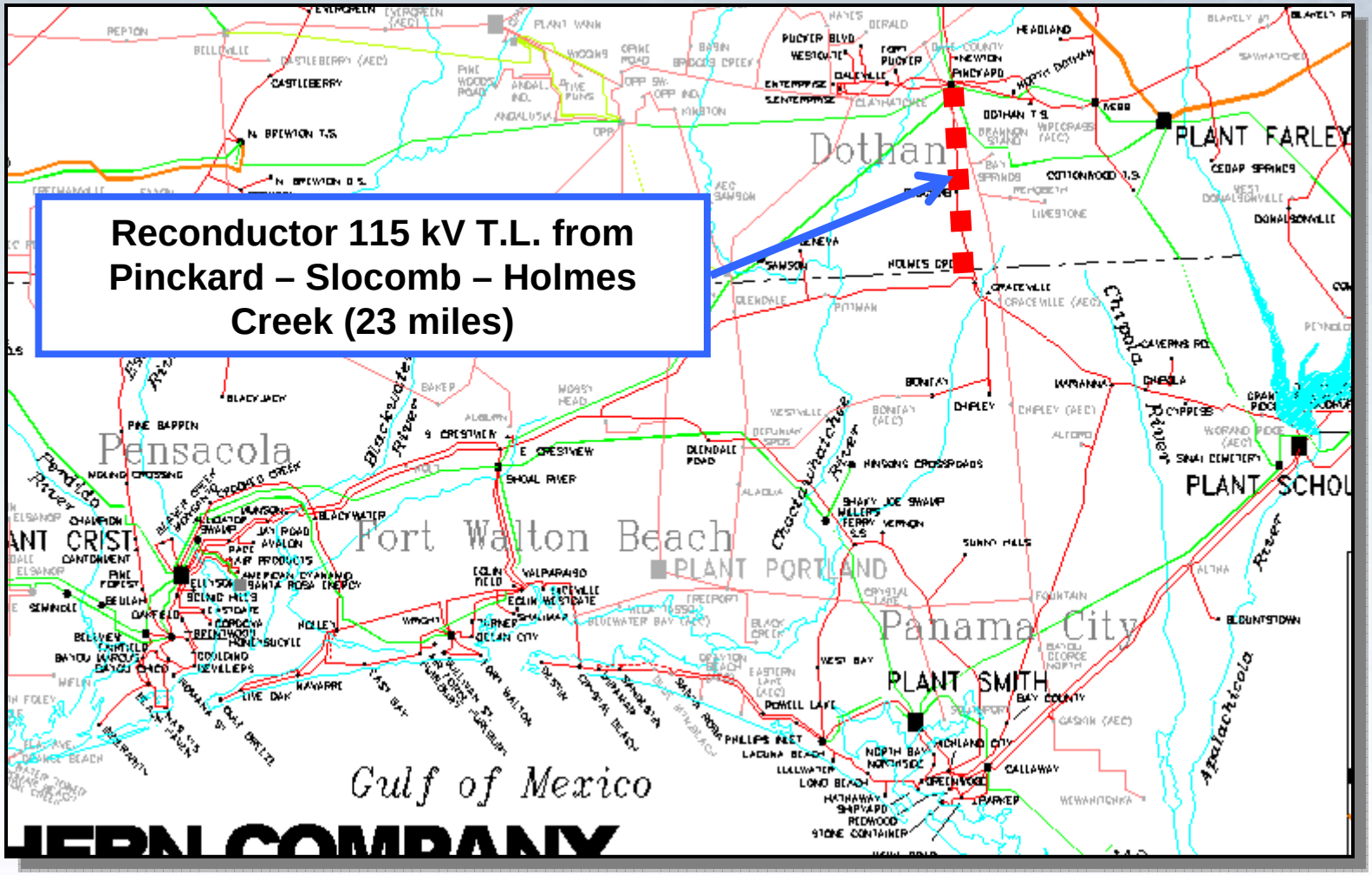
- The loss of Farley – Sinai Cemetery 230 kV T.L., with Smith unit #3 offline, causes this line to become overloaded.

Pinckard – Slocomb 115 kV T.L.

2013 W-9

Slocomb – Holmes Creek 115 kV T.L.

2014 W-10



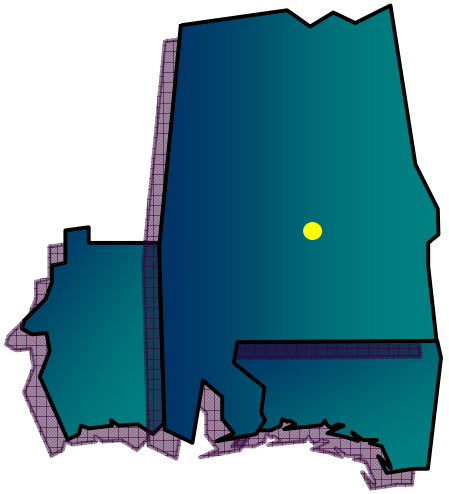
Southeastern Region Transmission Planning

Expansion Item W-11

2014 W-11

Snowdoun – Pike County 230 kV T.L.

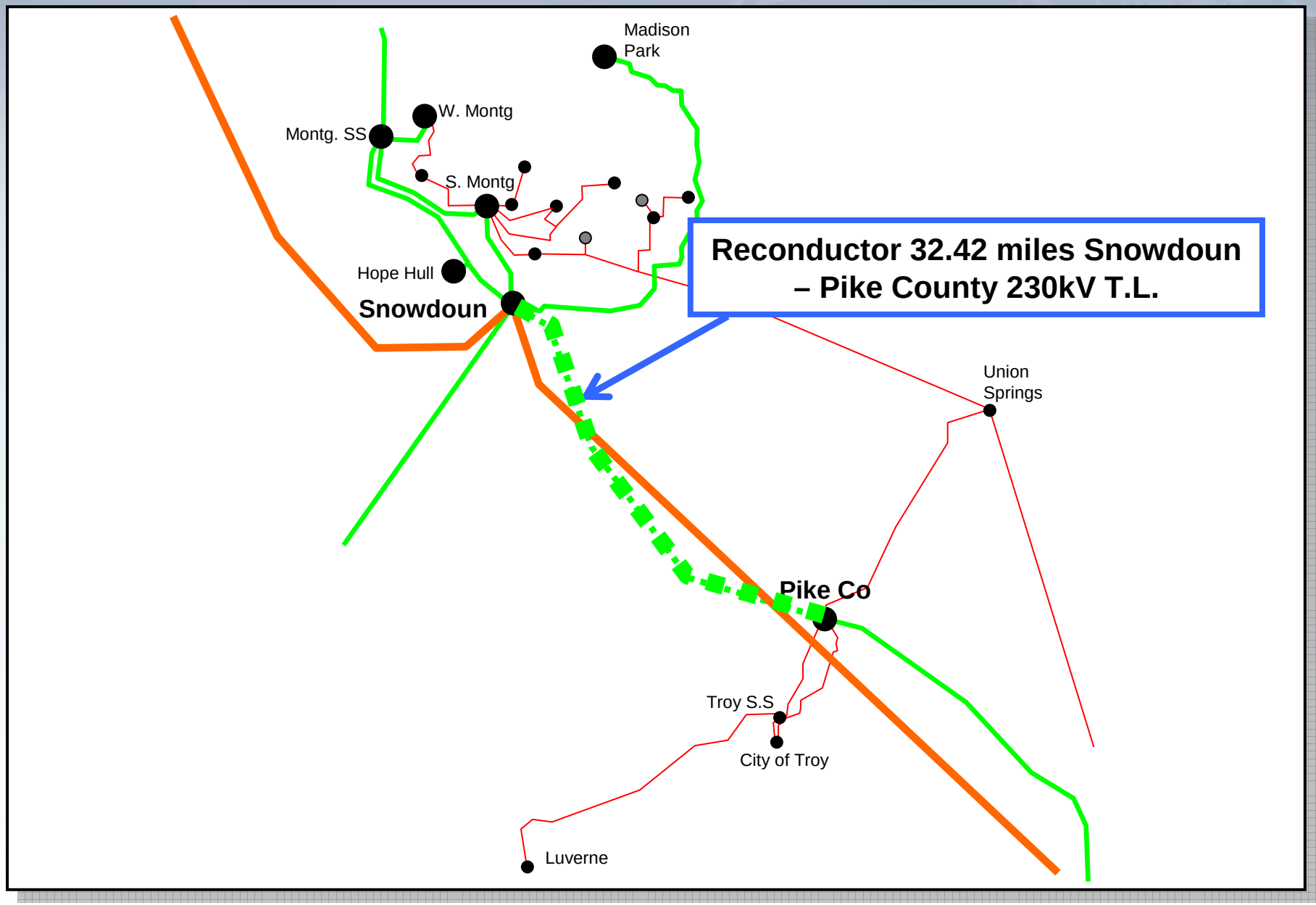
- Reconductor 32.4 miles of 230 kV T.L. between Snowdoun and Pike County with 1033 ACSS at 160º C.



- The loss of Snowdoun – Farley 500 kV T.L., with Farley unit #1 offline, causes the Snowdoun – Pike County 230 kV T.L. to become overloaded.

Snowdoun – Pike Co. 230 kV T.L.

2014 W-11



Southeastern Region Transmission Planning

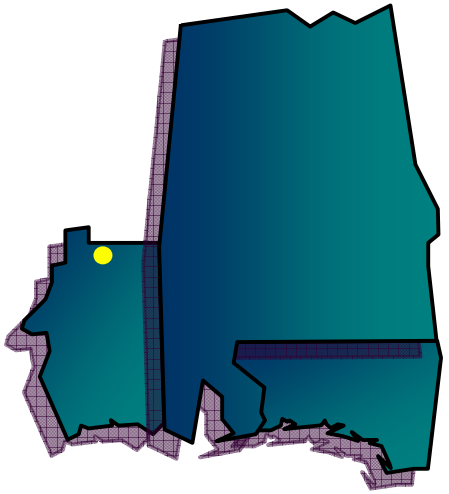
Expansion Item W-12

Kemper County Generation

- IGCC plant addition in Kemper County, Mississippi and construct all transmission facilities required for firm service from the plant.

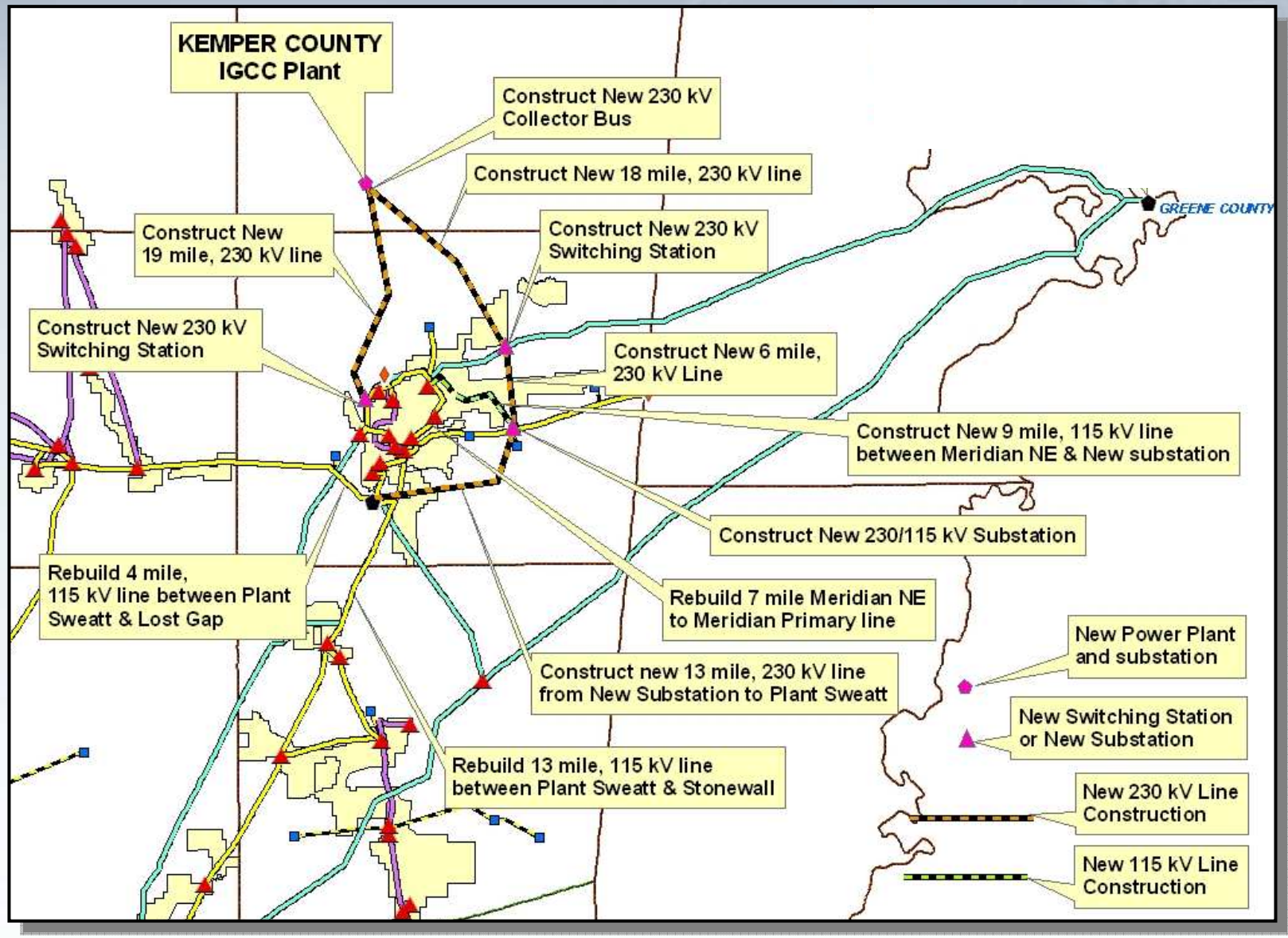
- These projects are to support the addition of Kemper County IGCC.

2014 W-12



Kemper County Generation

2014 W-12



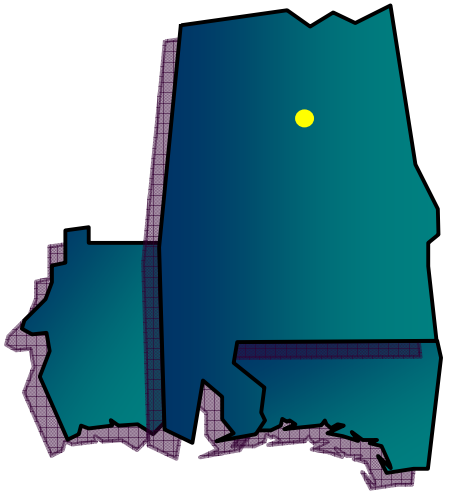
Southeastern Region Transmission Planning

Expansion Item W-13

Gaston – East Pelham 230 kV T.L.

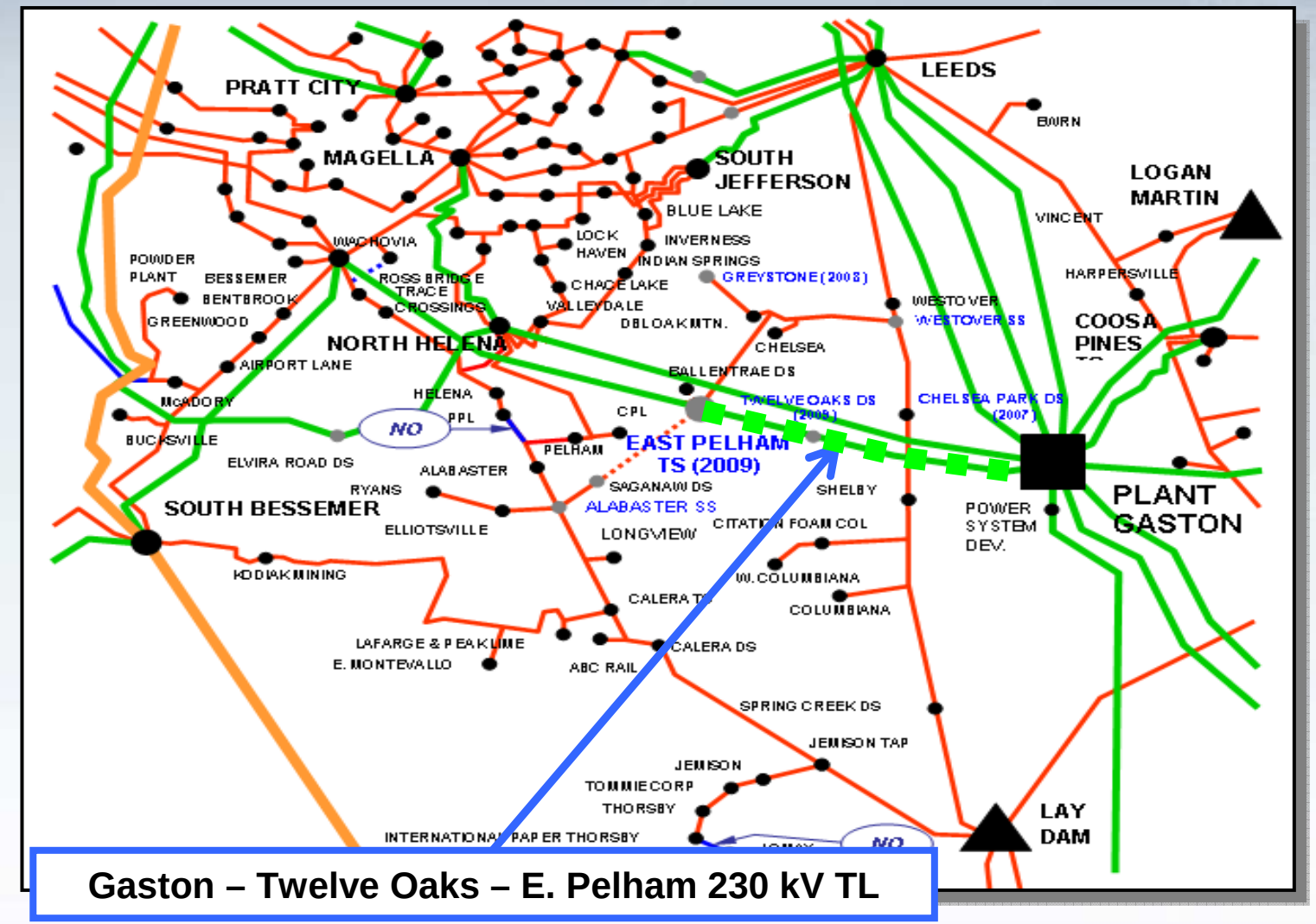
- Upgrade the Gaston – Twelve Oaks – East Pelham 230 kV T.L. to 100°C operation.
- The loading on the Gaston – East Pelham 230 kV T.L. exceeds its thermal rating.

2014 W-13



Gaston – East Pelham 230 kV T.L.

2014 W-13

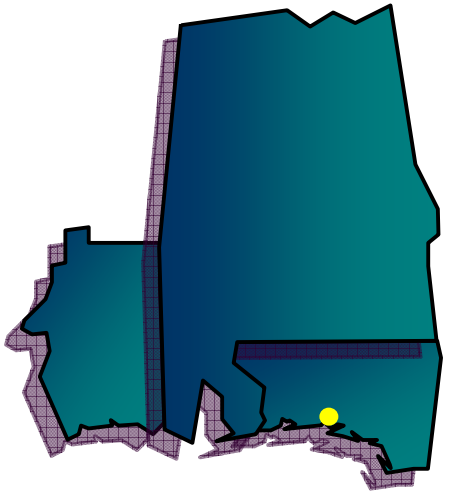


Gaston – Twelve Oaks – E. Pelham 230 kV TL

Southeastern Region Transmission Planning

Expansion Item W-14

2015 W-14



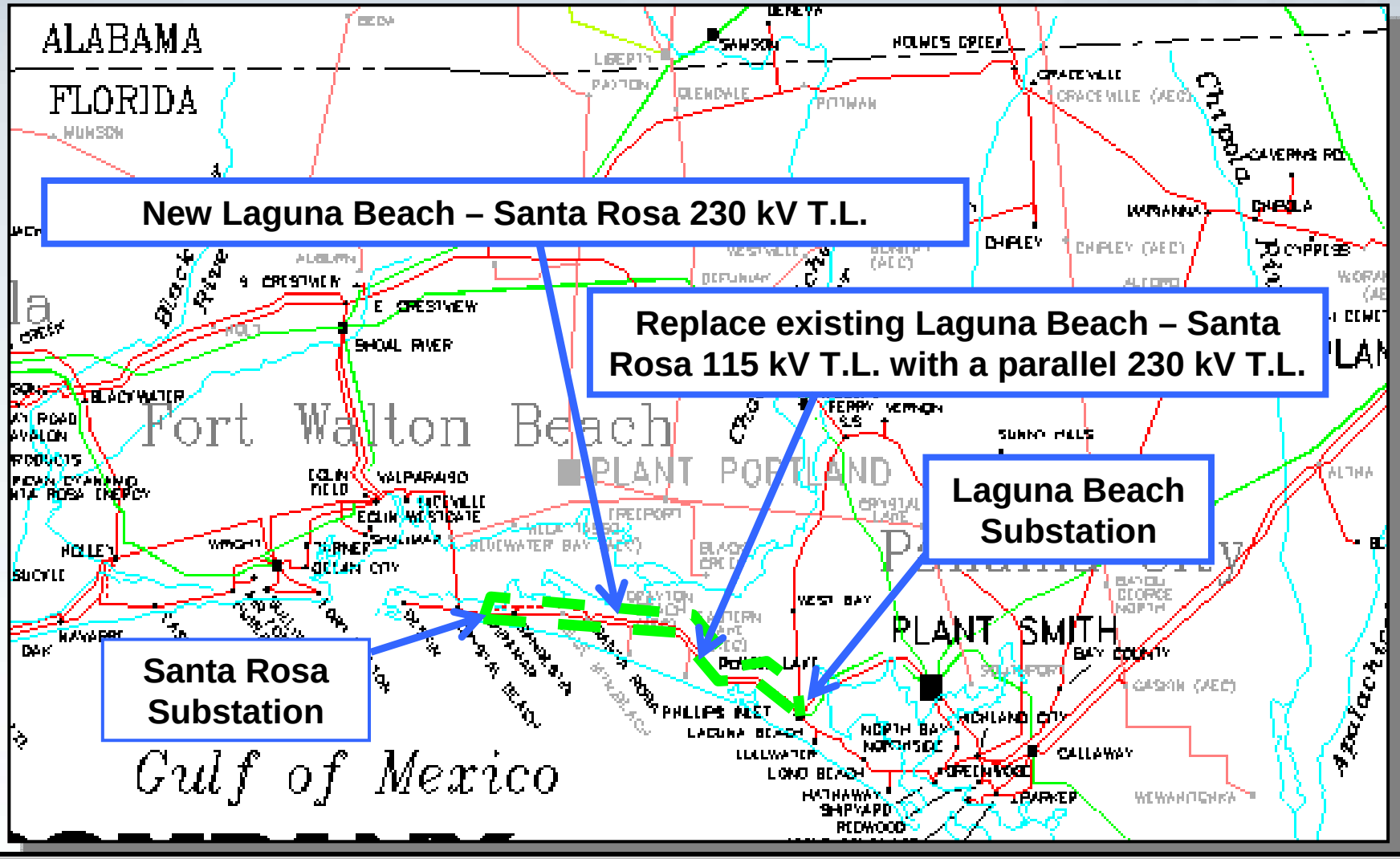
Santa Rosa – Laguna Beach 230 kV T.L.

- Construct a new Santa Rosa 230 KV substation with two 230 / 115 kV transformers.
- Build a new 230 kV T.L. from Laguna Beach to Santa Rosa.
- Replace Laguna Beach – Santa Rosa #1 115 kV T.L. with a new 230 kV T.L.

- Several transmission lines in the Fort Walton Beach area exceed their thermal ratings under contingency conditions.

Santa Rosa – Laguna Beach 230 kV T.L.

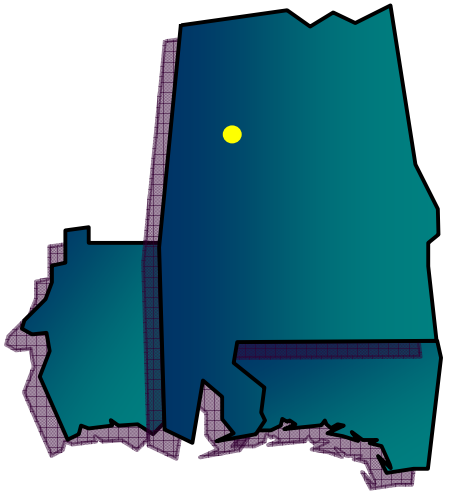
2015 W-14



Southeastern Region Transmission Planning

Expansion Item W-15

2015 W-15



Tuscaloosa Area Improvement

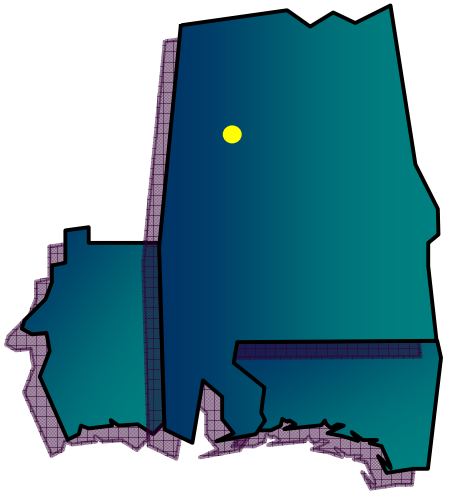
- Install a 230 / 115 kV Transformer at South Duncanville.
- Convert Moundville and Akron 44 kV substations to 115 kV
- Construct a new 115 kV T.L. from Moundville to South Duncanville.
- Construct a new 115 kV T.L. from Moundville to Big Sandy/Englewood Tap

- Overloads caused by multiple contingencies.
- Voltage Support.

Southeastern Region Transmission Planning

Expansion Item W-16

2016 W-16



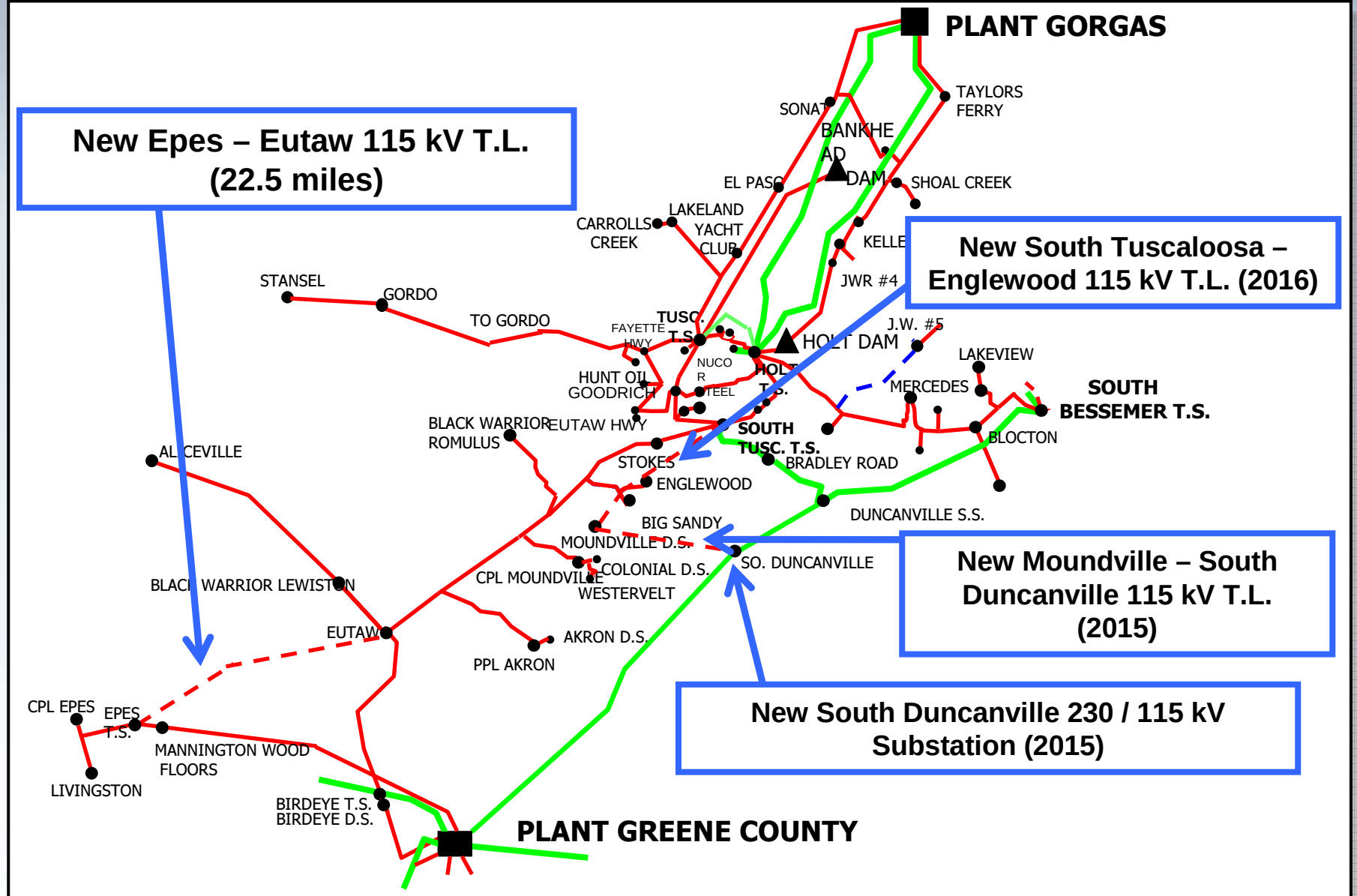
Tuscaloosa Area Improvement

- Install a new 115 kV T.L. from Englewood to South Tuscaloosa
- Reconductor 3.6 miles of existing 115 kV T.L. from Big Sandy to Big Sandy Tap with 397 ACSR

- The loss of the Duncanville – Bradley Rd 230 kV T.L., with Gorgas unit #10 offline, causes the Eutaw – Moundville Tap 115 kV T.L. to become overloaded

Tuscaloosa Area Improvement

2015 W-15 | **2016 W-16**



Southeastern Region Transmission Planning

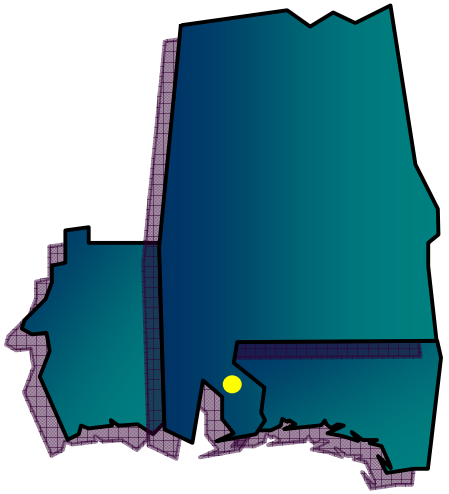
Expansion Item W-17

Barry – Chickasaw 230 kV T.L.

- Reconductor 19.18 miles of 230 kV T.L. from Barry Steam Plant – Chickasaw T.S.

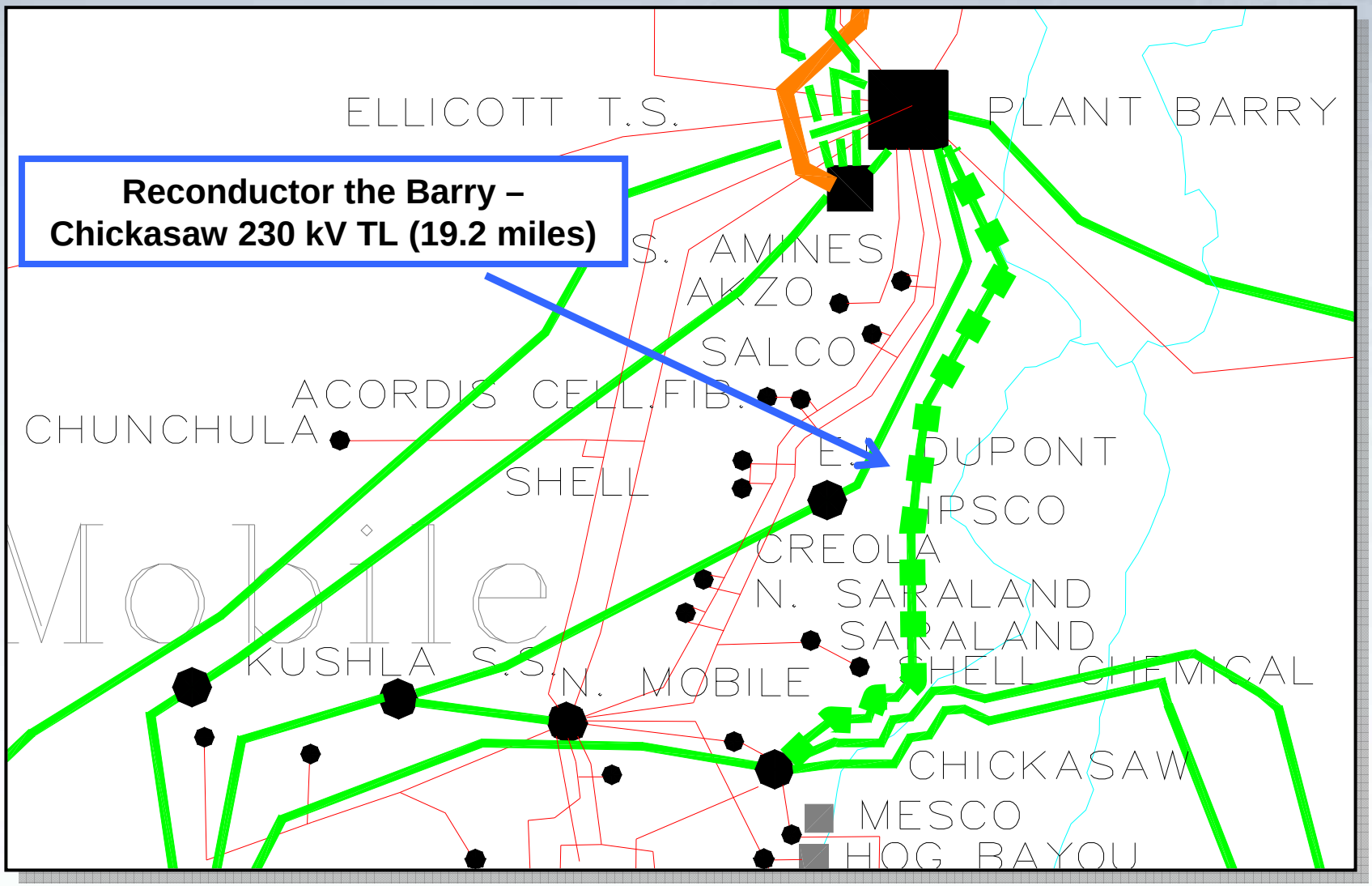
- The loss of the Barry – Crist 230 kV T.L., with Crist unit #7 offline, causes the Barry – Chickasaw 230 kV T.L. to become overloaded.

2016 W-17



Barry – Chickasaw 230 kV T.L.

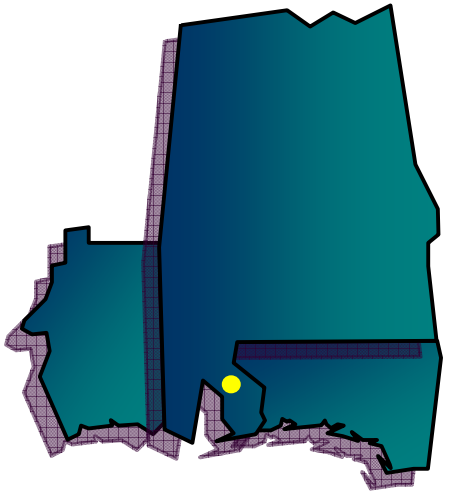
2016 W-17



Southeastern Region Transmission Planning

Expansion Item W-18

2018 W-18



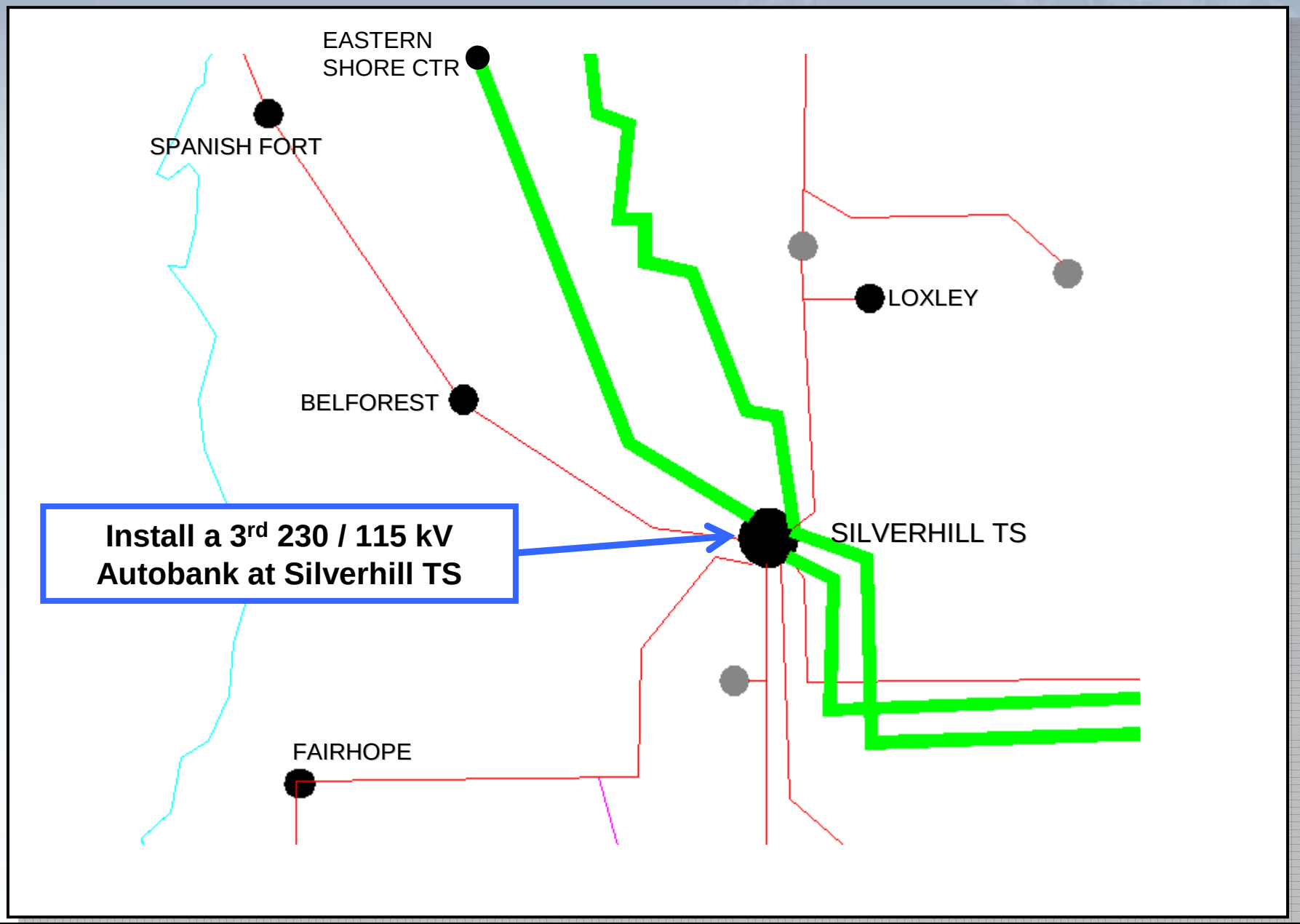
Silverhill 230 / 115 kV Substation

- Install a 3rd 230 / 115 kV Autobank (400 MVA) at Silverhill T.S.

- The loss of the Silverhill 230 / 115 kV Autobank #1, with Daniel unit #1 offline, overloads the Silverhill 230 / 115 kV Autobank #2

Silverhill 230 / 115 kV Substation

2018 W-18



Southeastern Region Transmission Planning

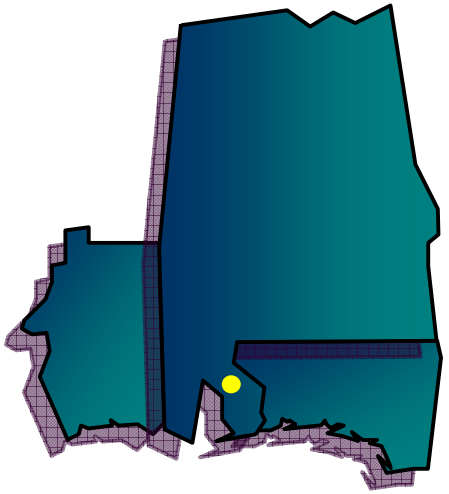
Expansion Item W-19

Barry – Crist 230 kV T.L.

- Upgrade the Barry SP – Crist SP 230 kV T.L. to 125°C operation.

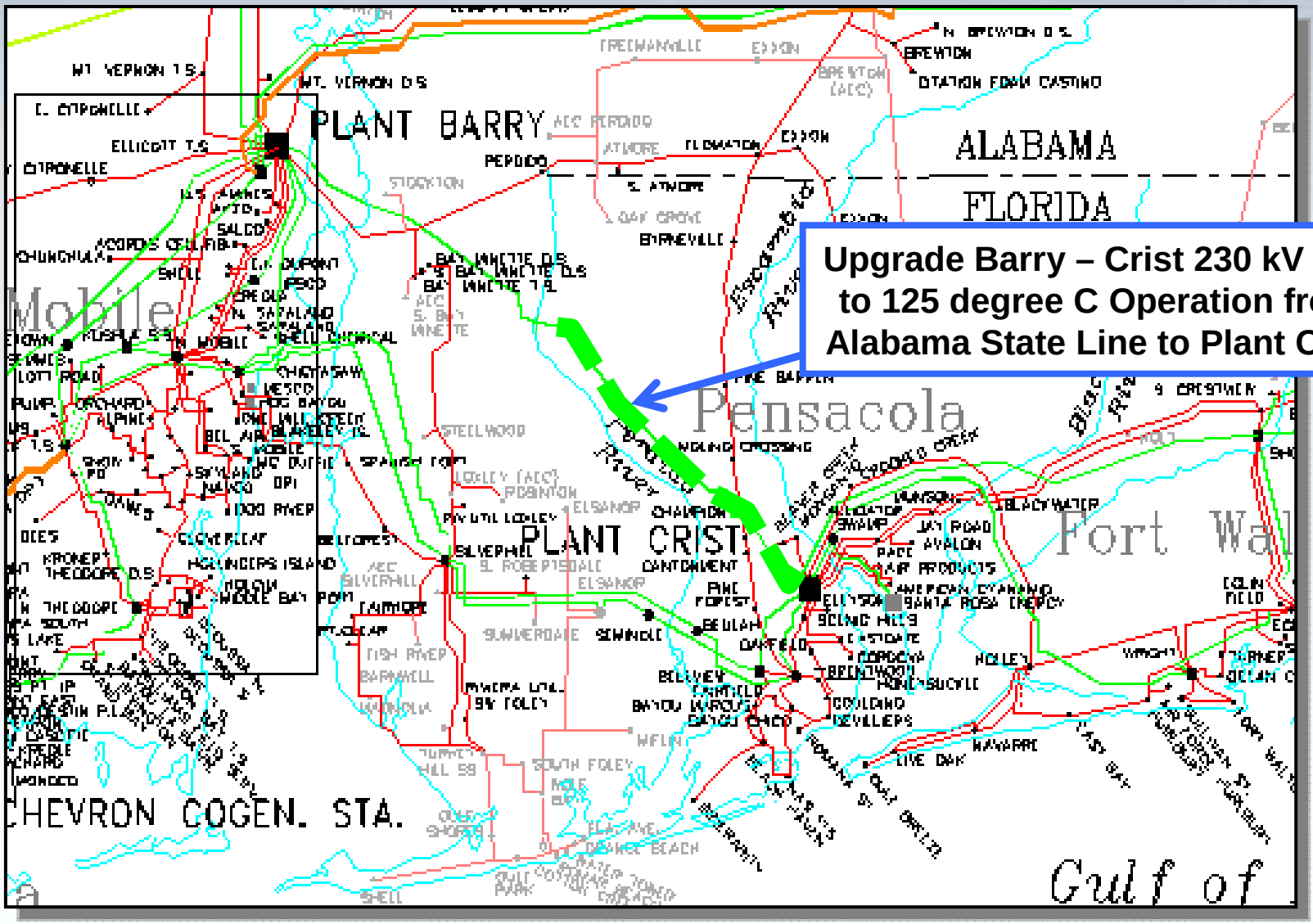
- The loss of Barry S.P. – Chickasaw 230 kV T.L., with Crist unit #7 offline, causes the Barry S.P. – Crist S.P. 230 kV T.L. to exceed its thermal rating.

2019 W-19



Barry – Crist 230 kV T.L.

2019 W-19



Southeastern Region Transmission Planning

Expansion Item W-20

2019 W-20

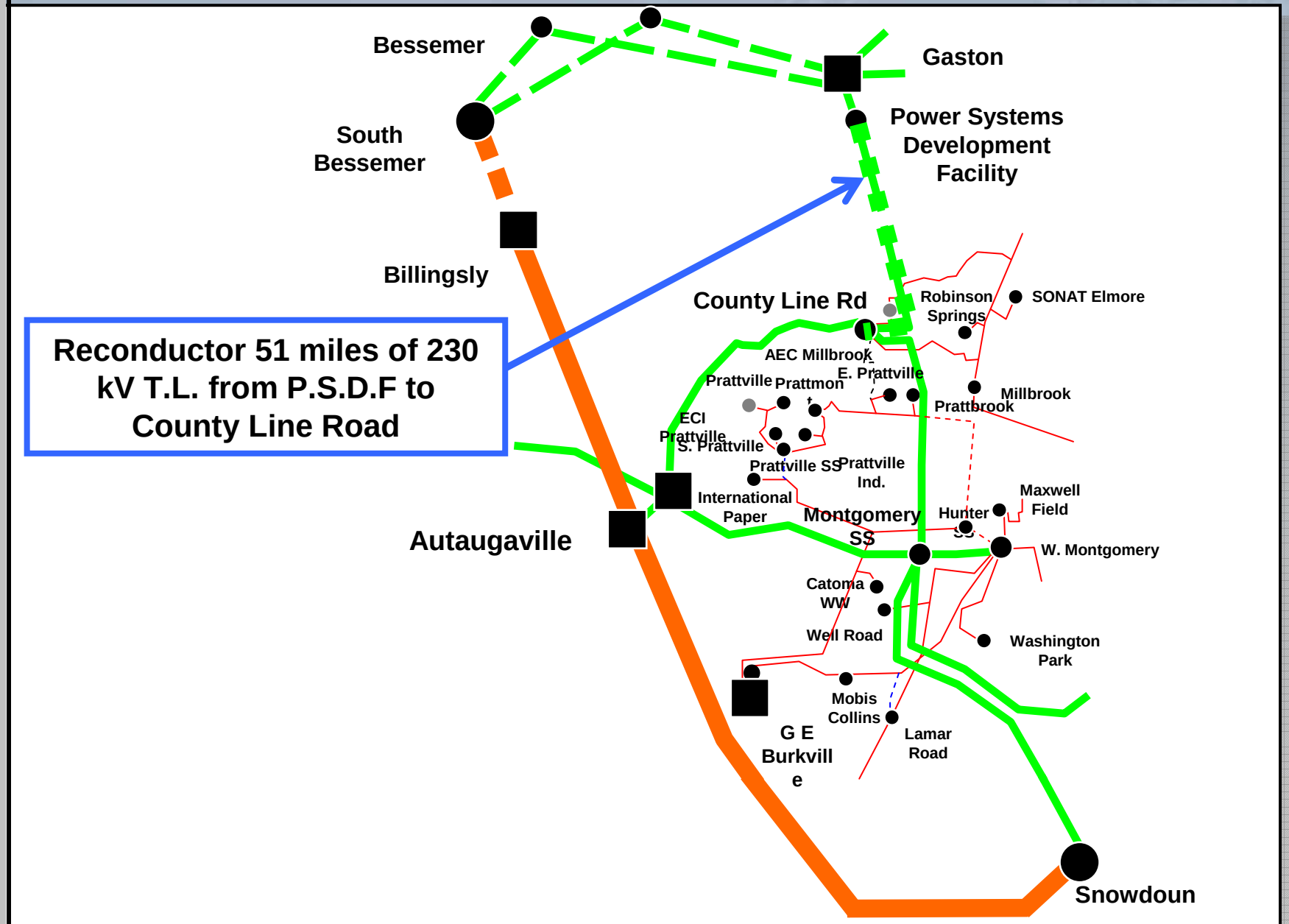
Gaston – County Line Road 230 kV T.L.

- Reconductor approximately 51.0 miles of 230 kV T.L. from Power Systems Development Facility to County Line Road with 1351 ACSS at 200 ºC

- The loss of the Autaugaville – Billingsly 500 kV T.L., with Harris unit #1 offline, causes the Gaston – County Line Road 230 kV T.L. to become overloaded.

Gaston – County Line Road 230 kV T.L.

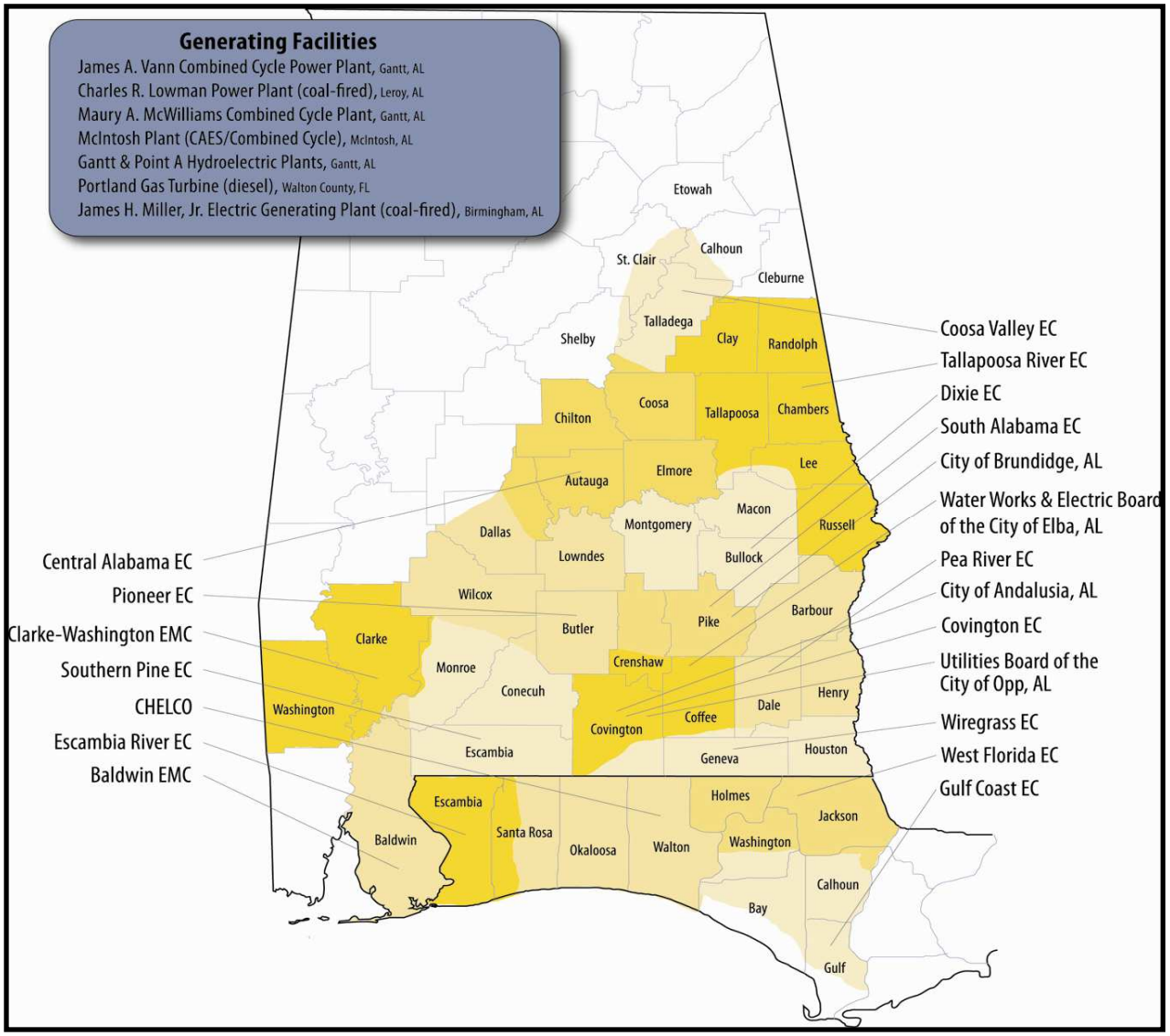
2019 W-20



Southeastern Region Transmission Planning

PowerSouth

Southeastern Region Transmission Planning



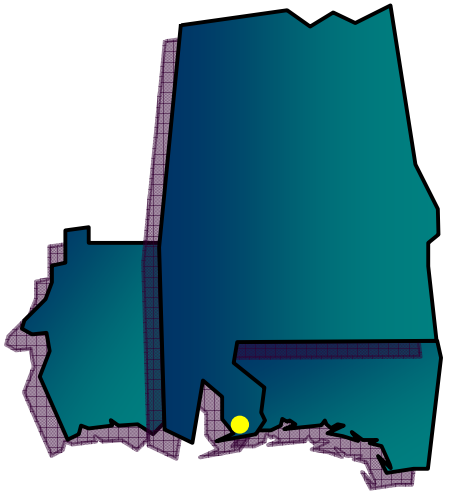
Southeastern Region Transmission Planning

Expansion Item PS-1

Liberty – Glendale – Defuniak T.L.

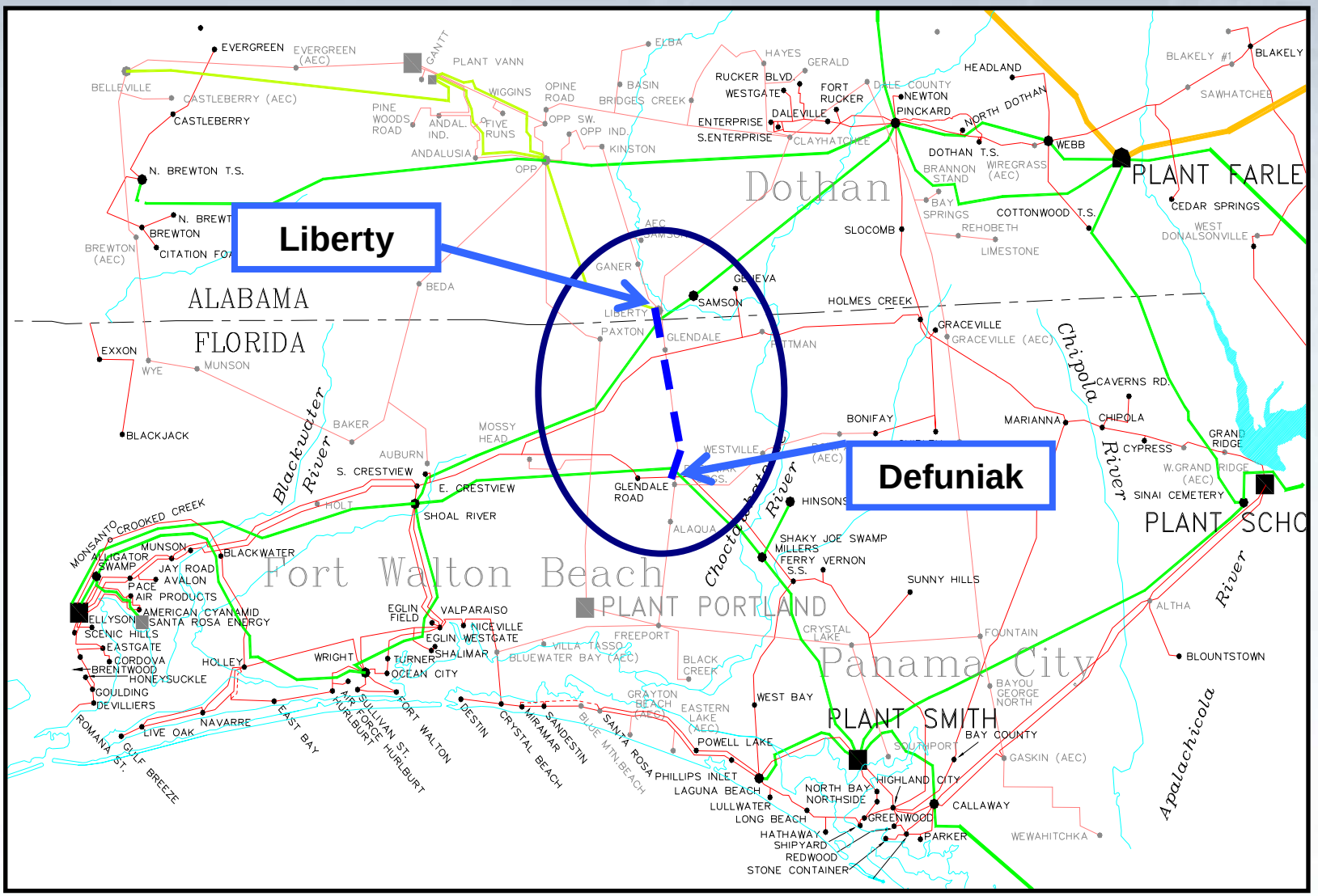
- Reconductor approximately 21 miles of 115 kV T.L.
- With Smith unit #3 offline, high North to South flow causes overloads. This is a project to strengthen the system to respond to single contingency conditions.

2011 PS-1



Liberty– Defuniak 115 kV T.L.

2011 PS-1



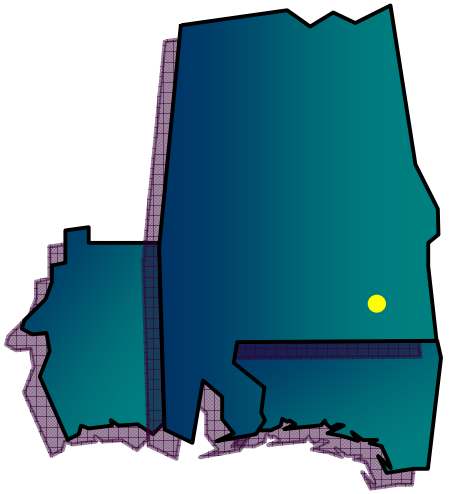
Southeastern Region Transmission Planning

Expansion Item PS-2

Dale County – Bay Springs Junction

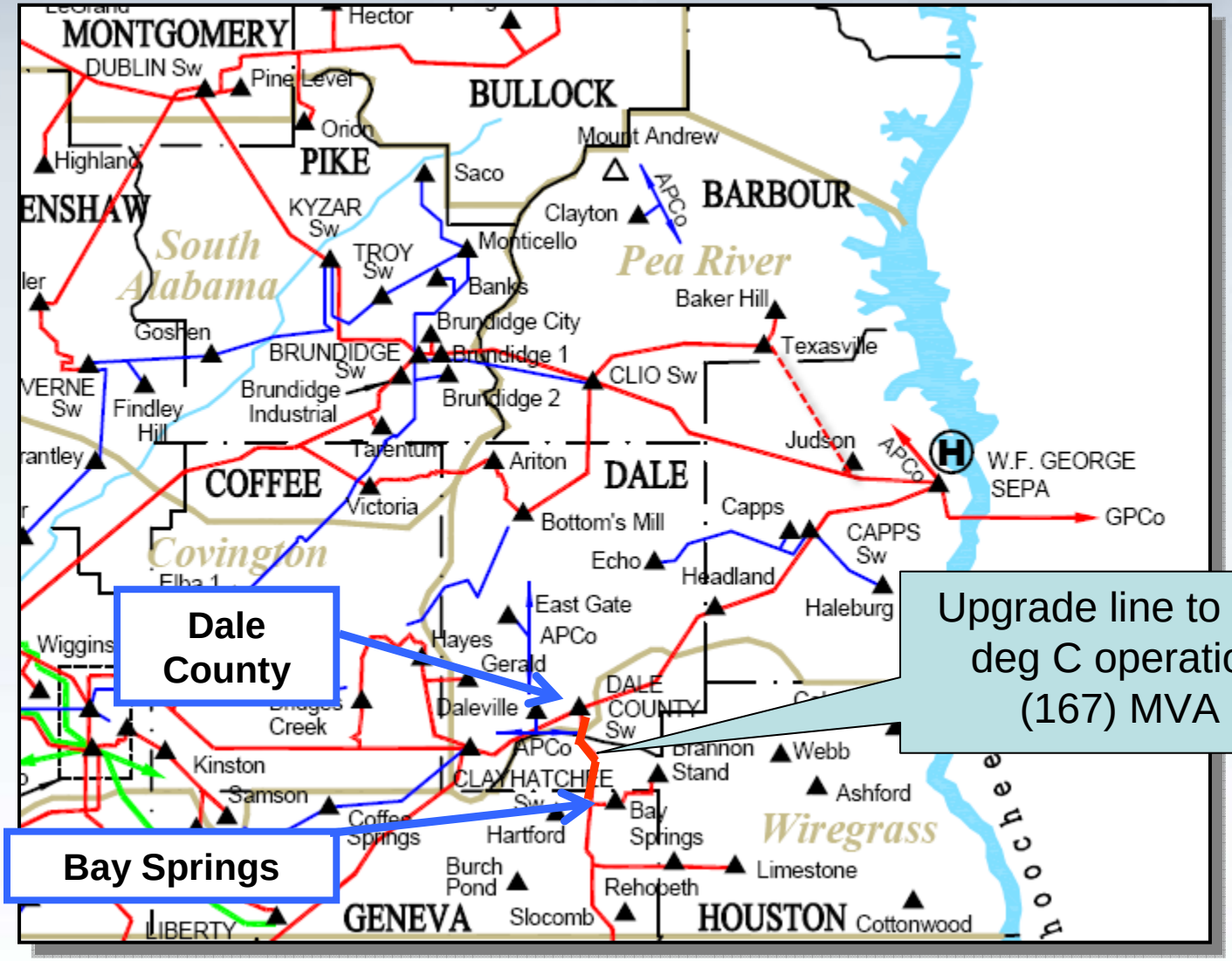
- Uprate to 100°C design temperature.
- This line overloads for Smith unit #3 offline and N-1 contingency.

2011 PS-2



Dale County – Bay Springs Junction

2011 PS-2



Southeastern Region Transmission Planning

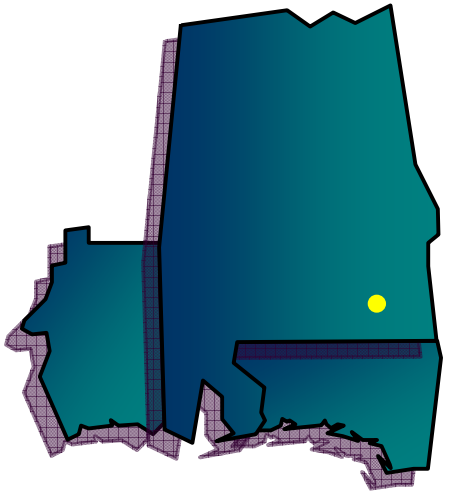
Expansion Item PS-3

Clio Area Project

- Construct new 14 miles Texasville Junction – Judson with 795 ACSR.

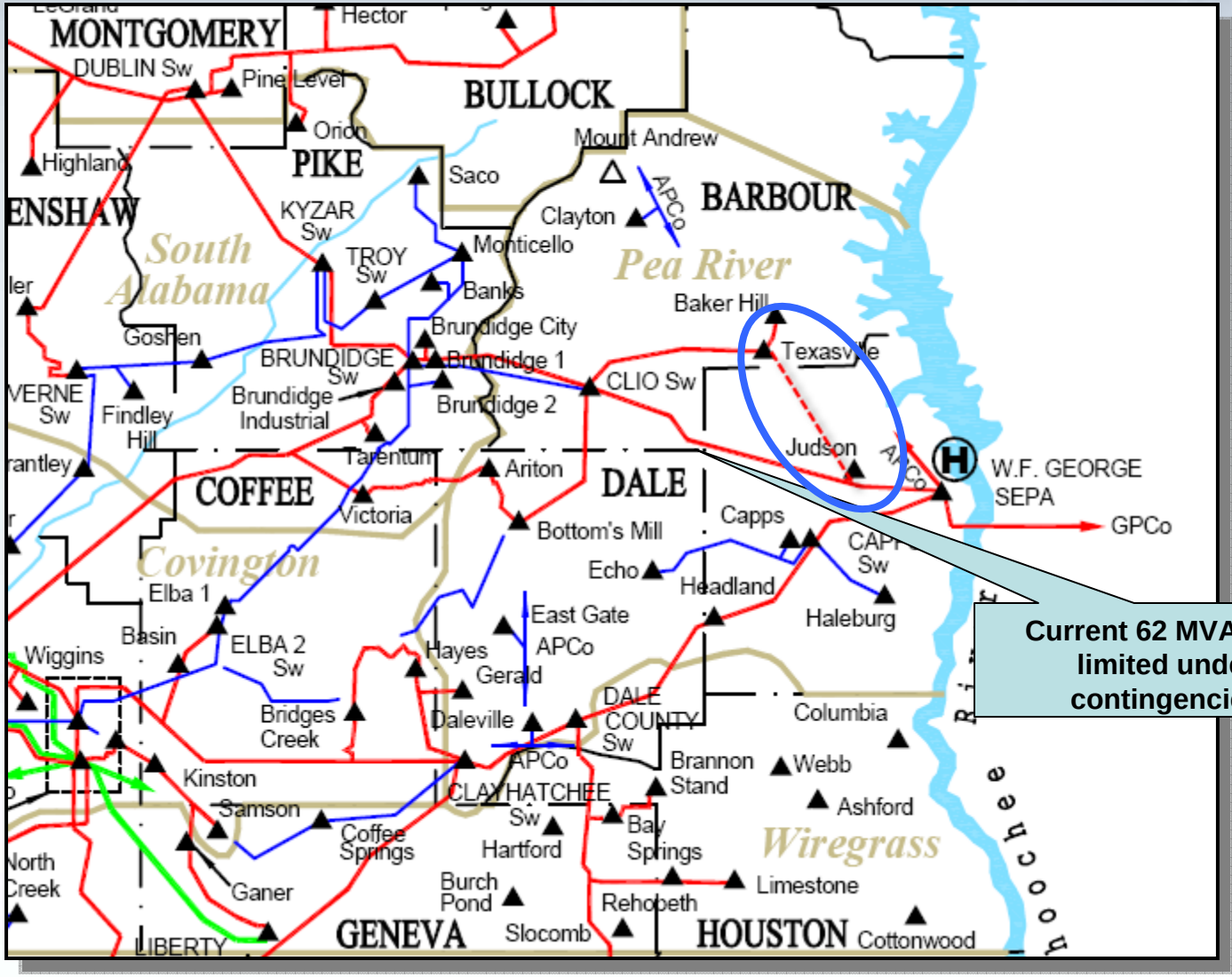
- This is a project to provide an additional source for a radial load and increase the capacity of an East to West path.

2012 PS-3



Clio Area Upgrades

2012 PS-3



Southeastern Region Transmission Planning

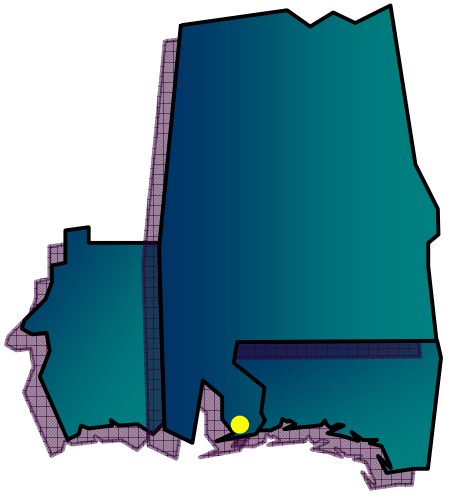
Expansion Item PS-4

Baldwin County Alabama

- Construct a new 115 kV T.L. from Miflin Junction – Florida Avenue with one mile water crossing.
- Construct Miflin Switching Station.
- Thermal uprate Miflin Junction – Wolf Bay Junction T.L.
- 15 MVAR Cap Banks at Florida Avenue and Gulf Shores.

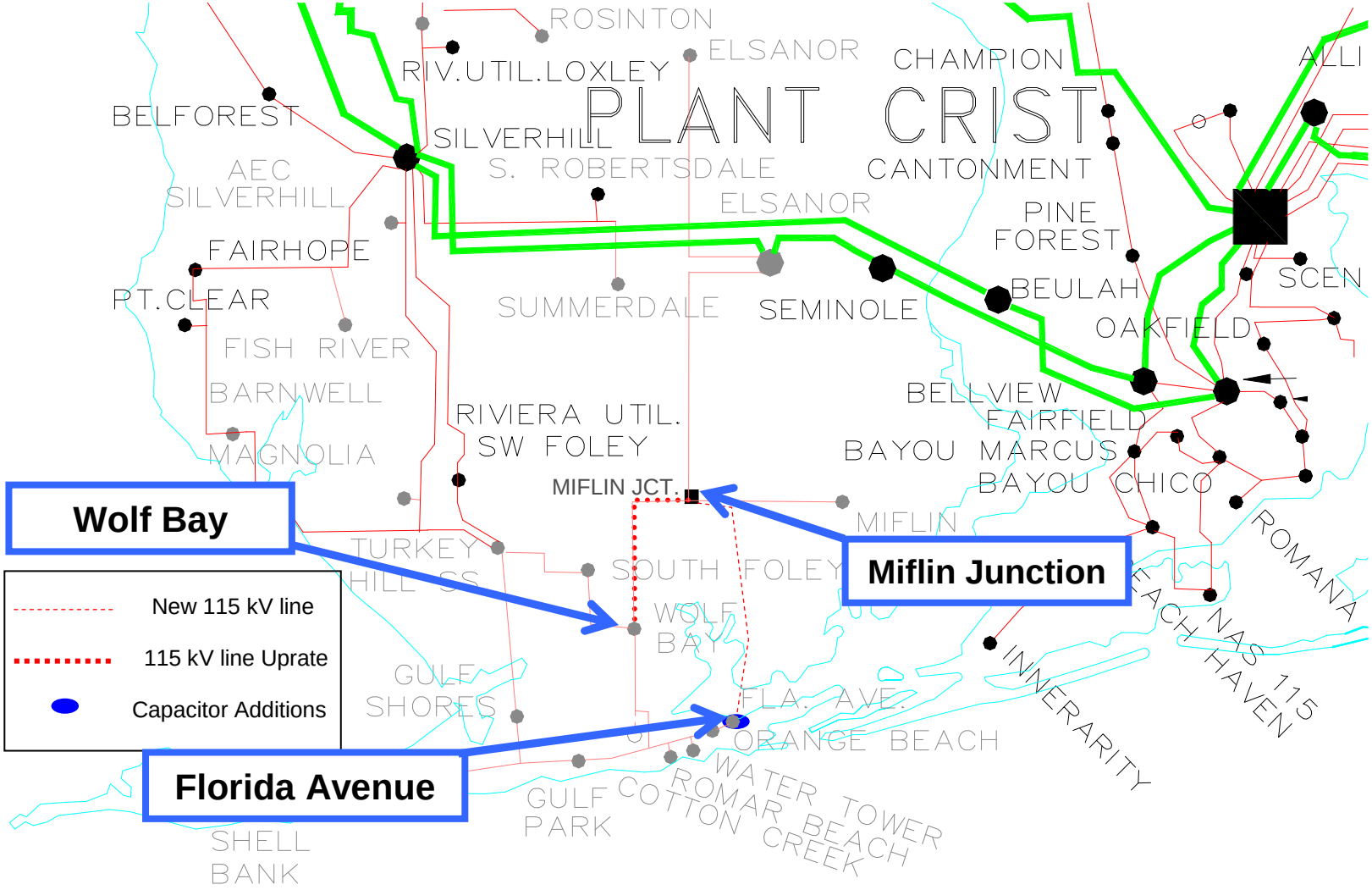
- This is a project to strengthen the system of the high load growth area, Orange Beach being served radially, to respond to single contingency conditions.

2012 PS-4



Baldwin County Alabama

2012 PS-4



Southeastern Region Transmission Planning

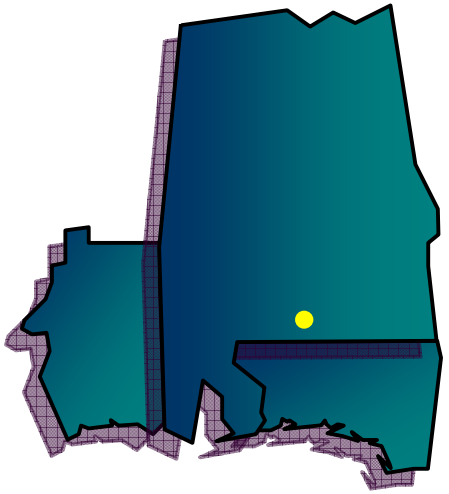
Expansion Item PS-5

Brewton/Atmore Area

- Upgrade 40 miles of 46kV line to 115kV 795 ACSR.

- This area experiences line overloads under single contingencies and unacceptable low voltage under a double contingency scenario.
- Alleviate voltage and overload problems by providing a parallel 115kV path that eliminates the overload and assures that the voltage is supported for the loss of two sources.

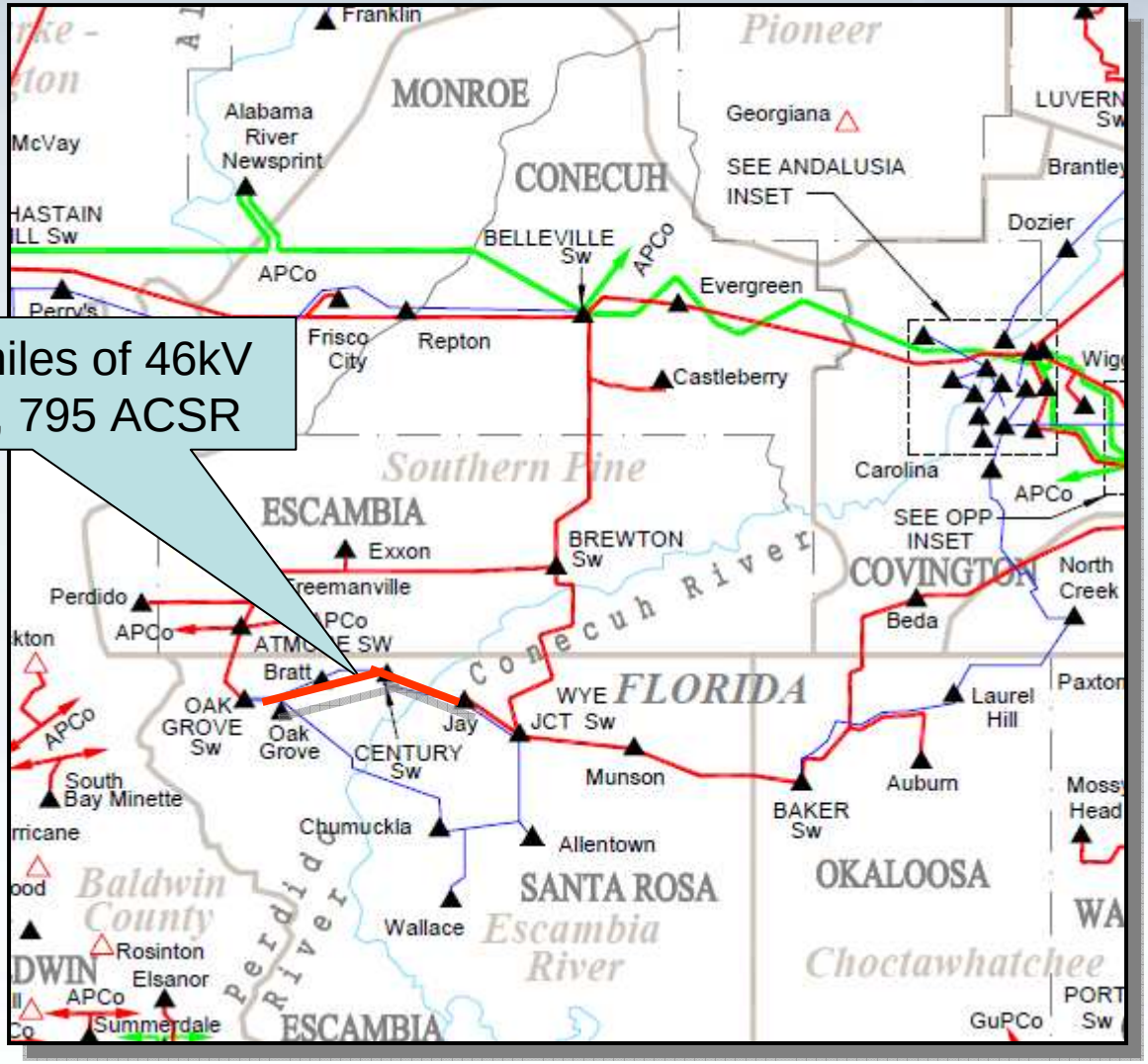
2012 PS-5



Brewton / Atmore Area

2013 PS-5

Upgrade 40 miles of 46kV line to 115kV, 795 ACSR



Southeastern Region Transmission Planning

South Mississippi Electric Power Association

Southeastern Region Transmission Planning

SMEPA's System Expansion Plan

10 Year Transmission Plan

- Years 2010 – 2013
  - Under Construction
  - Included in Transmission Construction Work Plan (TCWP)
- Years 2014 – 2020
  - Not Included in TCWP

Southeastern Region Transmission Planning

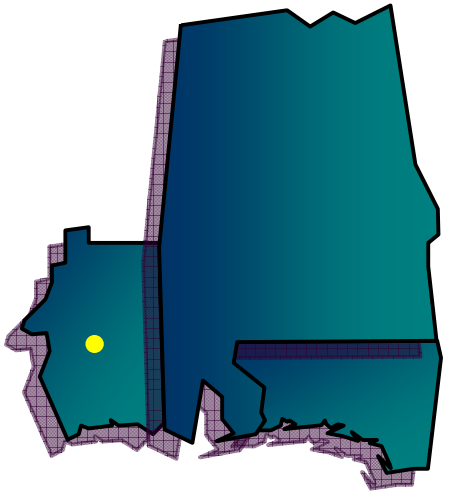
Expansion Item SME-1

Polkville 161 kV Source

- Construct 161 / 69 kV Substation and T.L.
- Tap 161 kV T.L. '172' with White Oak S.S.

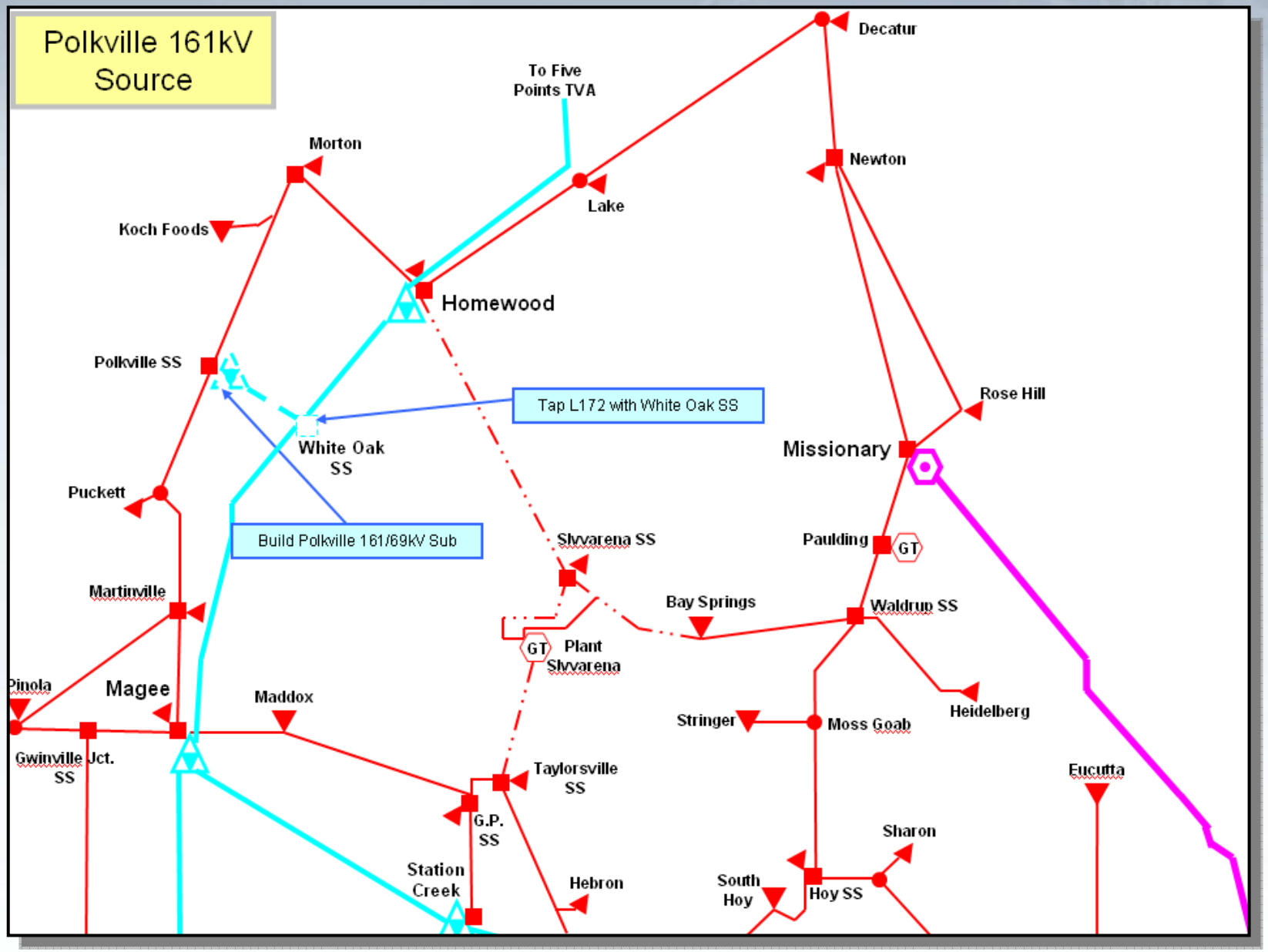
- Project alleviates low voltages and overloads and is required to support the industrial load growth.

2011 SME-1



Polkville 161 kV Source

2011 SME-1



Southeastern Region Transmission Planning

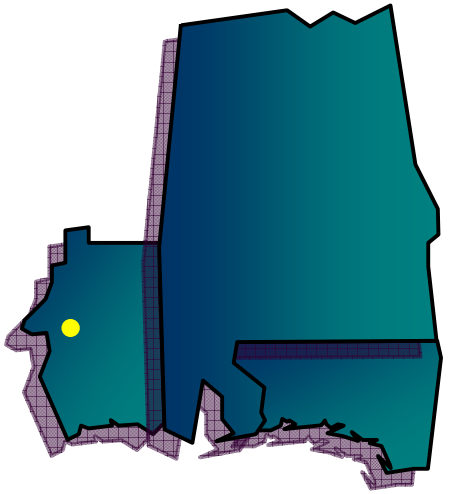
Expansion Item SME-2

Silver Creek Interconnection

- Construct new Silver Creek 115 / 161 kV Substation.
- Tap 161 kV T.L. '168' and construct a new 161 kV T.L.

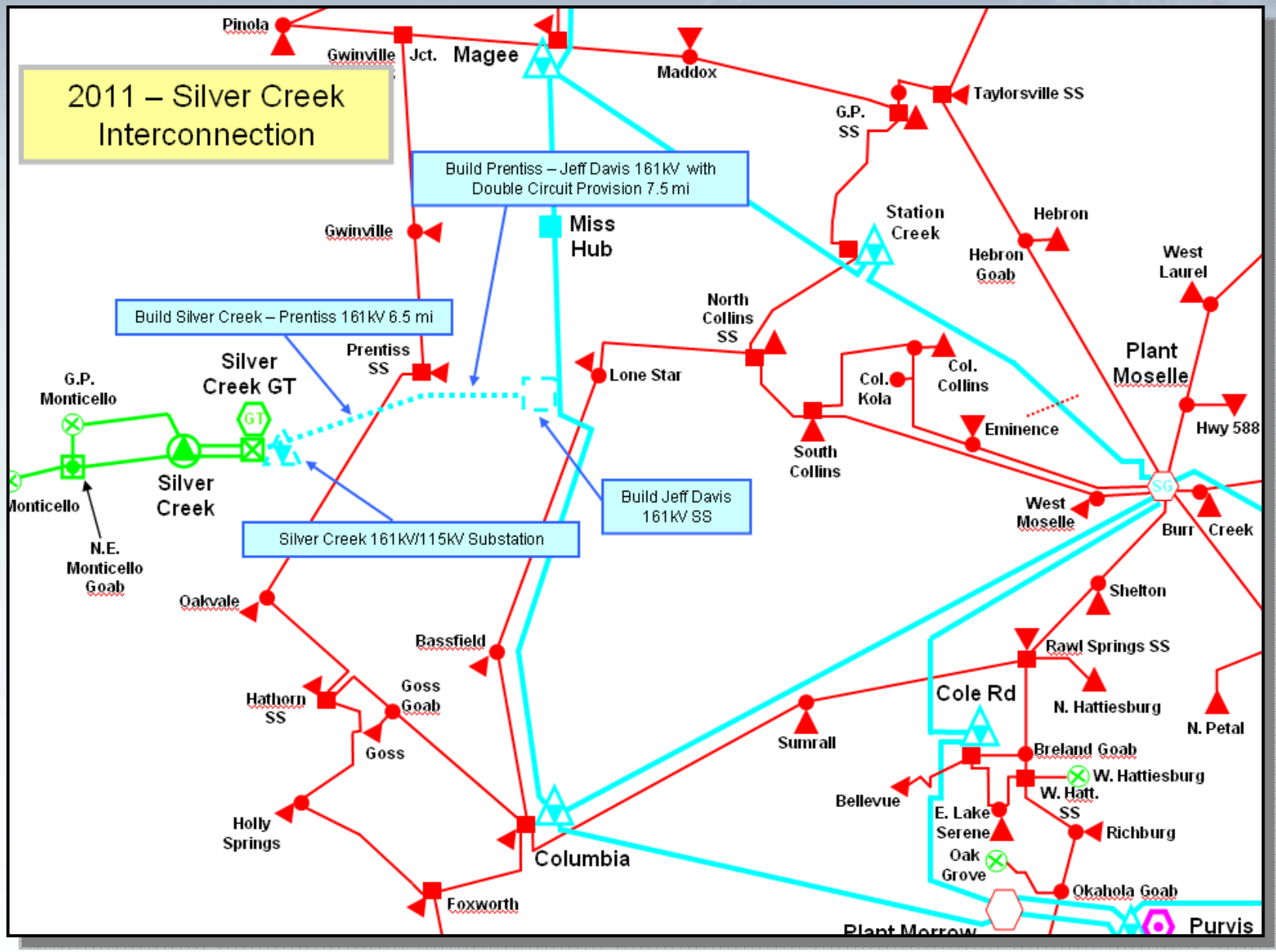
- Single interconnection with Entergy (Magee).
  - Outage impacts SMEPA's ability to serve off-system load.

2011 SME-2



Silver Creek Interconnection

2011 SME-2



Southeastern Region Transmission Planning

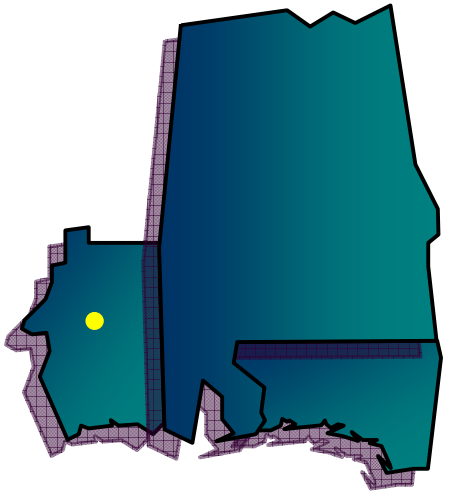
Expansion Item SME-3

2012 SME-3

South Hoy 161 kV Source

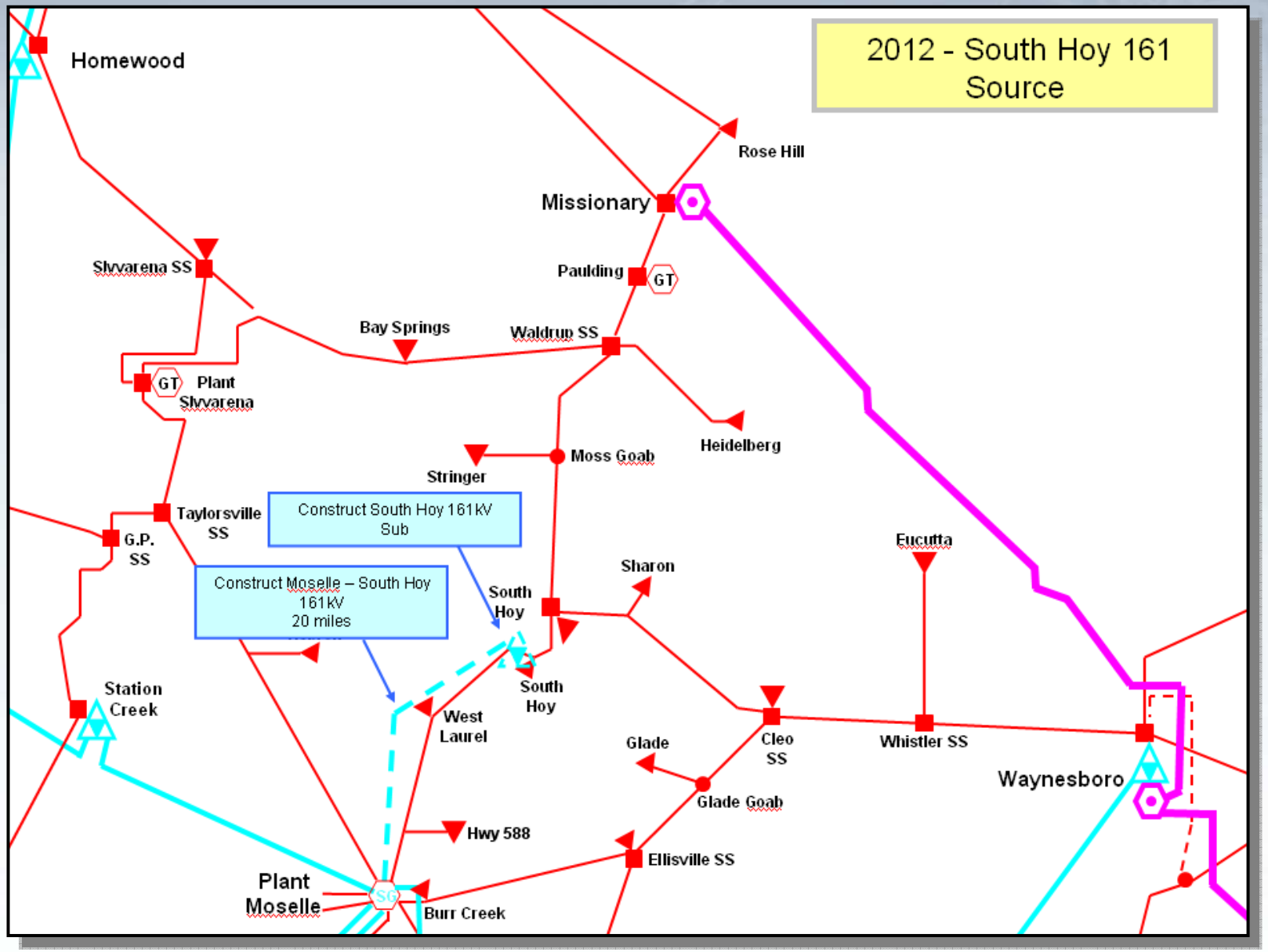
- Construct a new 161 / 69 kV substation at South Hoy.
- Construct a new 161 kV T.L. from Moselle to South Hoy.

- This project alleviates 69 kV low voltages and multiple line overloads during 69 kV contingencies.



South Hoy 161 kV Source

2012 SME-3



Southeastern Region Transmission Planning

Expansion Item SME-4

Moselle 161 kV Generation Expansion and Repower

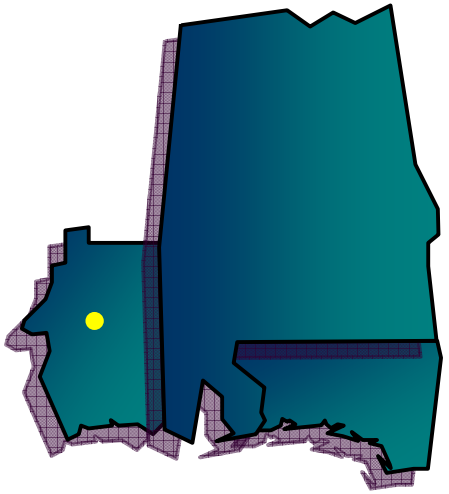
- Add 2 – 83 MW Combustion Turbines at SMEPA's Moselle Generation Station.
- Repower 2 – 59 MW Steam Units with HRSGs.

- Required to improve generation deficient in 2012.

Comments

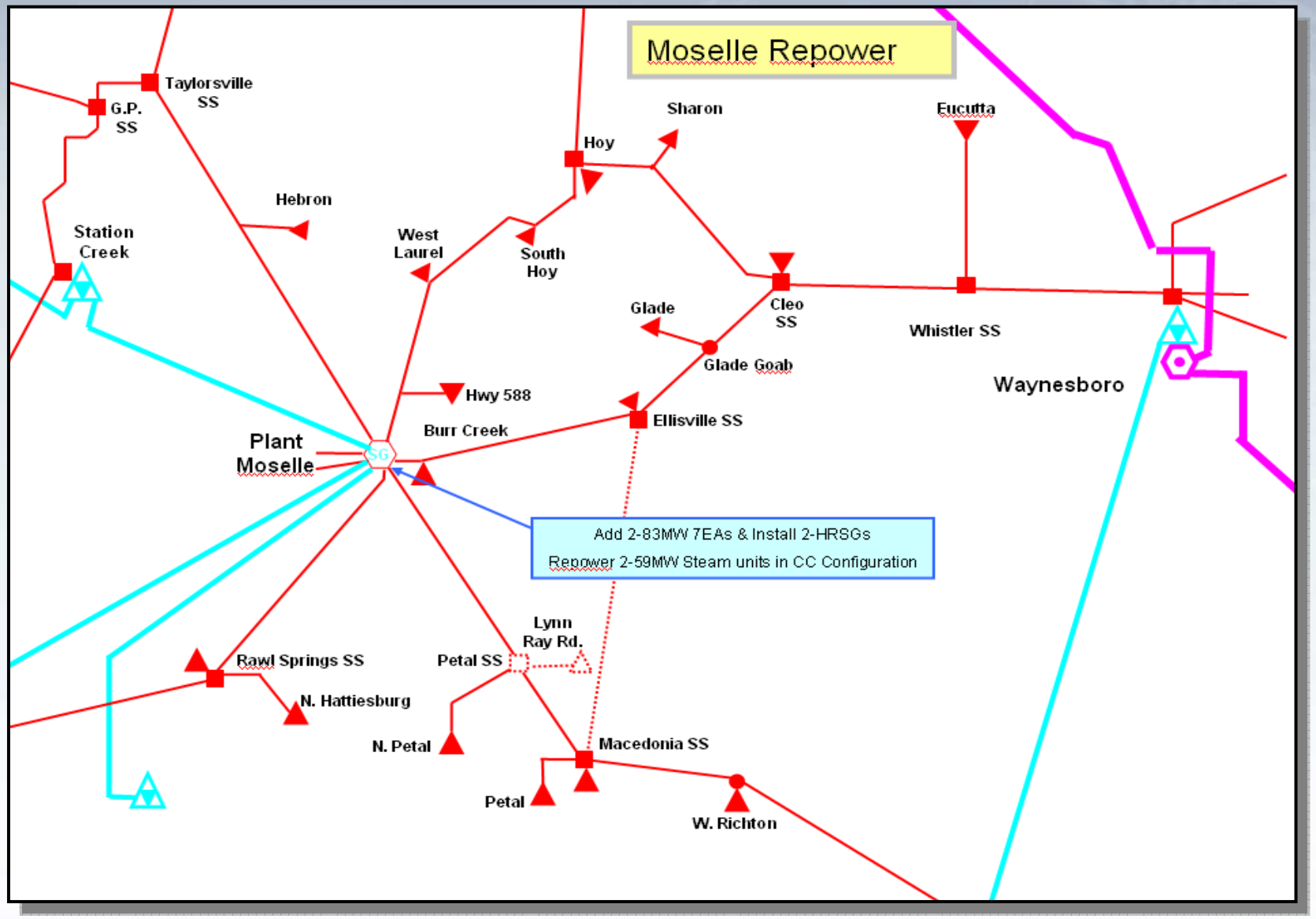
- Combined Cycle configuration most efficient option.
- Building at existing facilities reduces construction time.

2012 SME-4



Moselle 161 kV Generation Expansion

2012 SME-4



Southeastern Region Transmission Planning

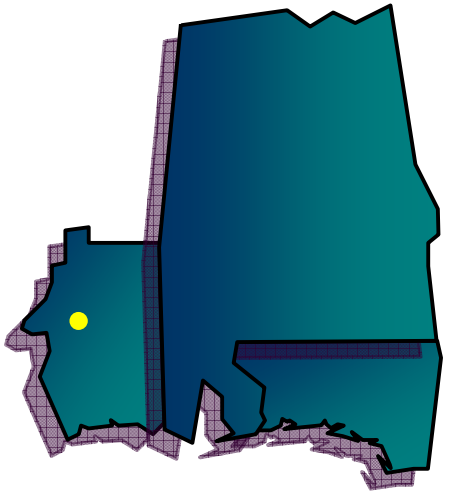
Expansion Item SME-5

Prentiss 161 / 69 kV Substation

- Tap Silver Creek 161 kV Interconnection.
- Construct Prentiss 161 / 69 kV Substation.

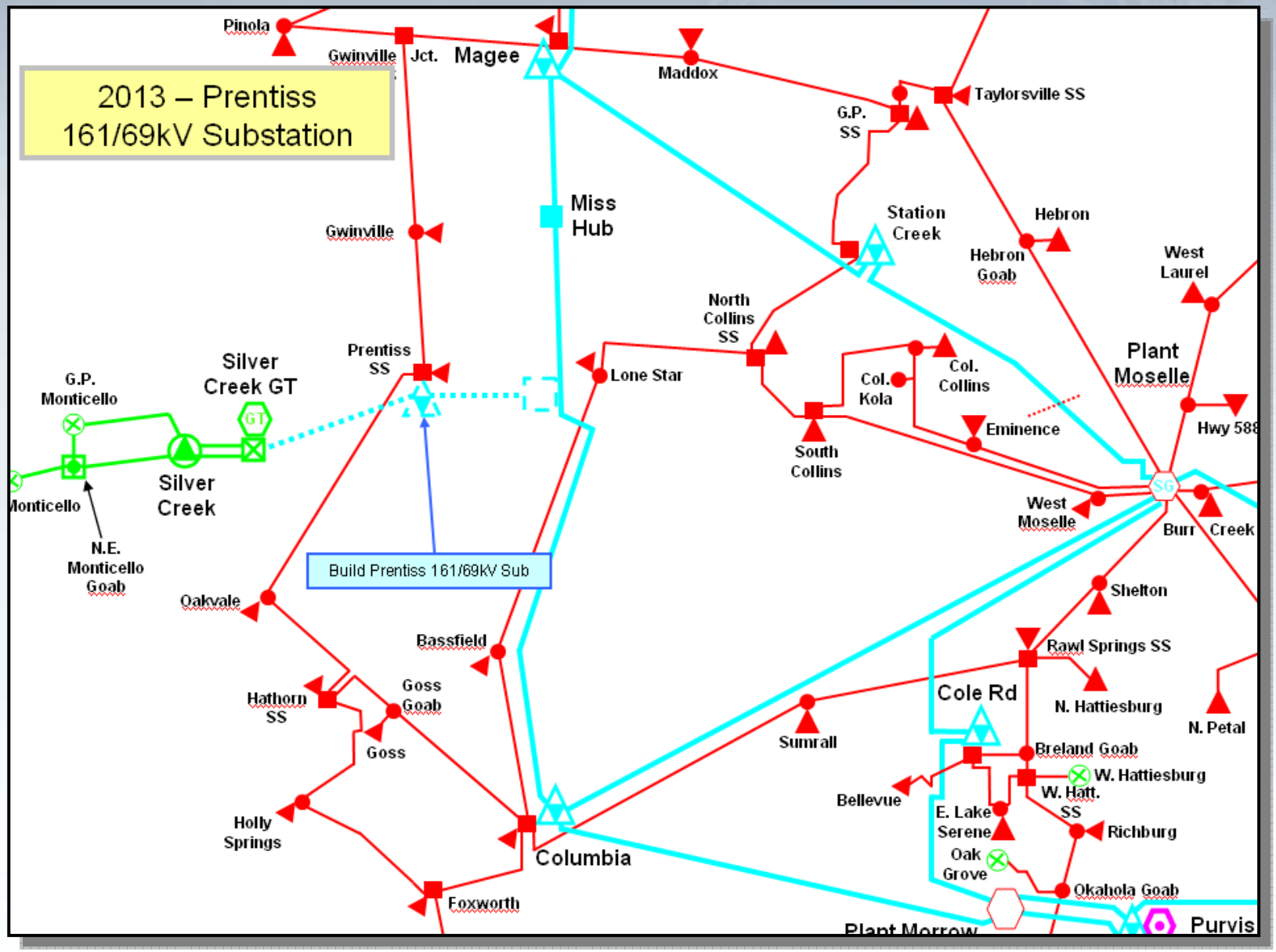
- This project alleviates 69 kV low voltages and multiple line overloads during 69 kV contingencies.

2013 SME-5



Prentiss 161 / 69 kV Substation

2013 SME-5



Southeastern Region Transmission Planning

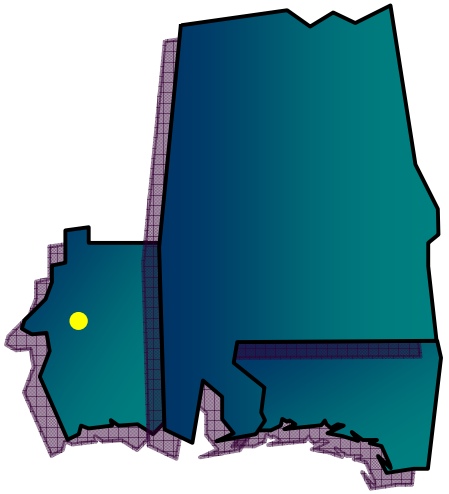
Expansion Item SME-6

East Waynesboro 230 / 69 kV Substation

- Tap 230 kV T.L. '230' (PowerSouth Tie) and 69 kV T.L. '23'.
- Construct East Waynesboro 230 / 69 kV Substation.
- Upgrade supporting 69 kV transmission.

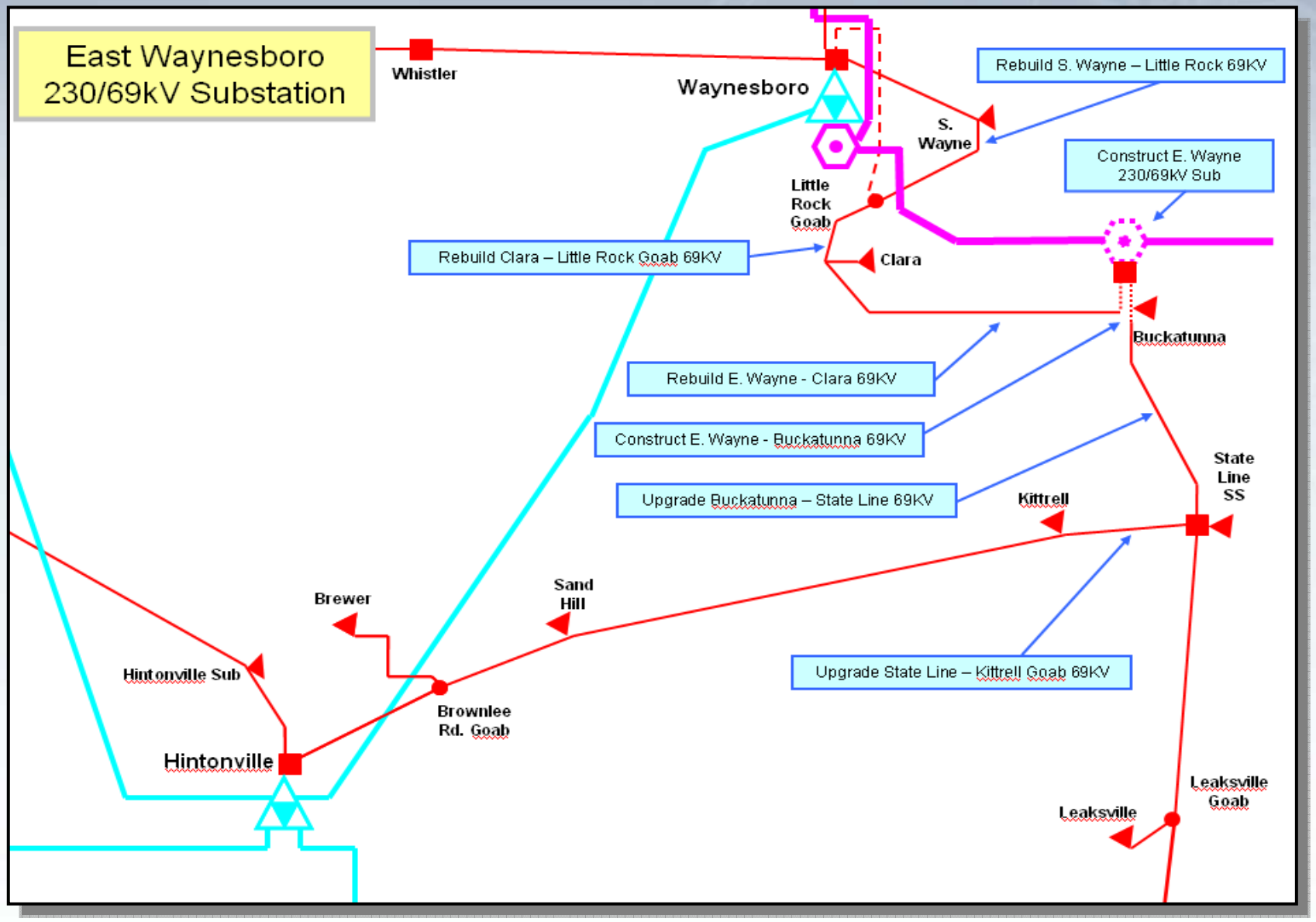
- This project alleviates 69 kV low voltages and multiple line overloads during 69 kV contingencies.
- 69 kV transmission capacity.

2017 SME-6



East Waynesboro 230 / 69 kV Substation

2017 SME-6



Questions?