Welcome

SERTP 2013 – 3rd Quarter Meeting

"2nd RPSG Meeting"

2013 SERTP

The SERTP process is a transmission planning process.

Please contact the respective transmission provider for questions related to real-time operations or OATT transmission service.

Purposes & Goals of the Meeting

- Preliminary Economic Study Results
- FRCC Coordination Update
- SERC Regional Model Development & Reliability Assessment Update
- SIRPP Update
- Next Meeting Activities

PowerSouth Energy Cooperative

Dalton Utilities

GeorgiaTransmission

MEAG POWER

South Mississippi Electric Power Association

Southern Company — Energy to Serve Your World℠

Economic Planning Studies

Five Economic Planning Studies

- **Southern to SCPSA Border**
  - 500 MW (2015 Winter Peak)
- **Southern to SCE&G Border**
  - 500 MW (2015 Winter Peak)
- **TVA Border to Southern**
  - 1500 MW (2017 Spring Valley)
- **TVA Border to Southern**
  - 1500 MW (2017 Summer Peak)
- **Southern to PJM**
  - 1000 MW (2023 Summer Peak)

Power Flow Cases Utilized

- **Study Years: 2015, 2017, 2023**
- **Load Flow Cases:**
  - **2013 Series Version 2A**
    - **Summer Peak**
    - **Shoulder**
    - **Winter Peak**
    - **Spring Valley**

Economic Planning Studies

- **Preliminary Report Components:**
  - **Thermal Analysis**
    - Contingency Analysis to identify constrained elements/contingency pairs
  - **Interface Transfer Capability Impacts**
  - **Potential Solutions**
    - Transmission Enhancements and Cost Estimates

2013 SERTP

The following information depicts recommended enhancements for the proposed transfer levels above and beyond existing, firm commitments. Therefore, this information does not represent a commitment to proceed with the recommended enhancements nor implies that the recommended enhancements could be implemented by the study dates (2015, 2017, 2023).

These potential solutions only address constraints identified within the SERTP Sponsors' areas that are associated with the proposed transfers. Other Balancing Areas were not monitored which could result in additional limitations and required system enhancements.

Southern
to
SCPSA Border

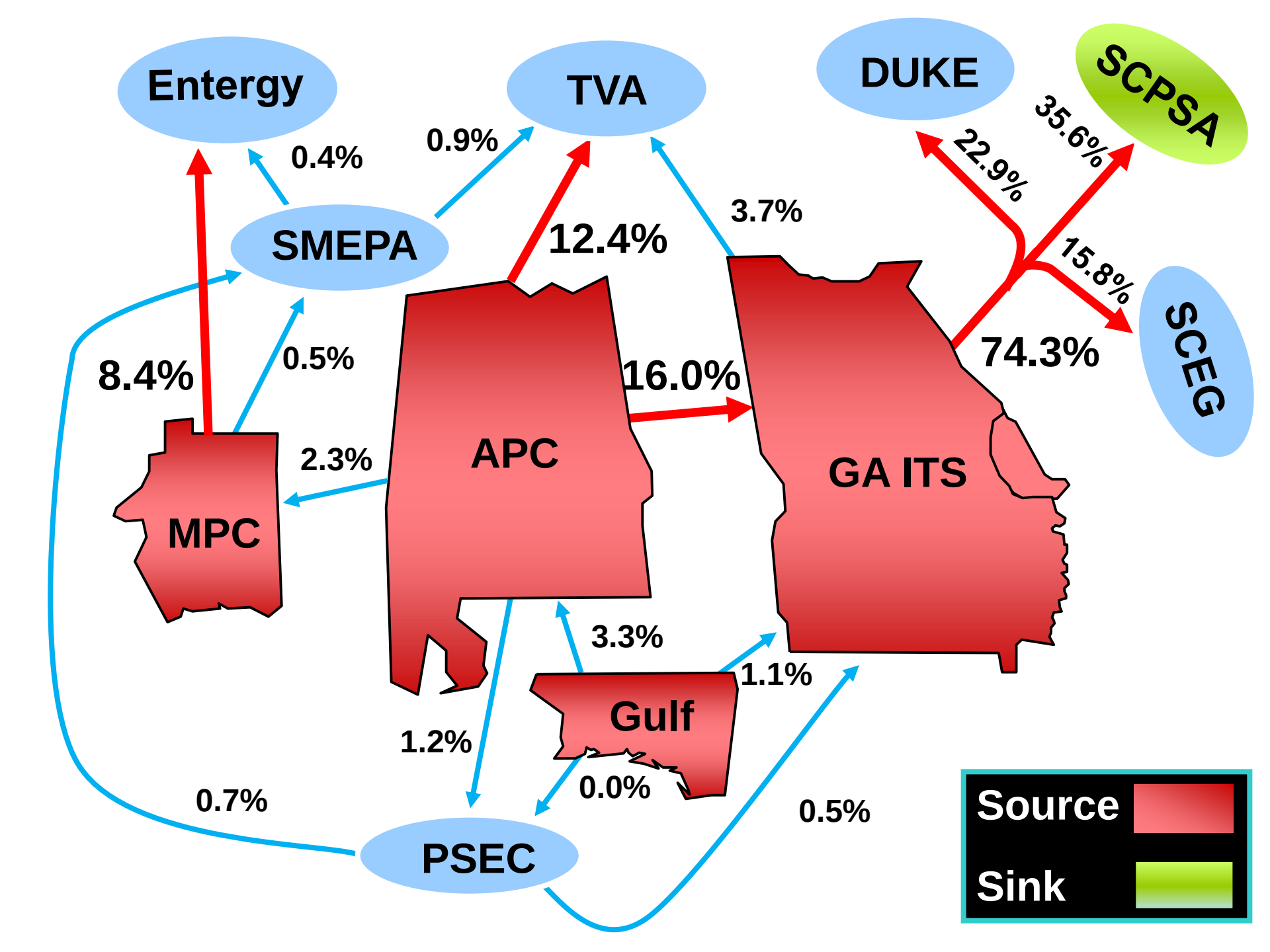
500 MW

Southern to SCPSA Border
500 MW

- **Transfer Type:** Generation to Load (2015 Winter Peak)
- **Source:** Southern Generation
- **Sink:** Uniform load scale in SCPSA

Source

Sink


Entergy
TVA
DUKE
SCPSA
SCEG
SMEPA
PSEC
MPC
APC
GA ITS
Gulf
0.4%
0.9%
22.9%
35.6%
15.8%
3.7%
12.4%
74.3%
8.4%
0.5%
16.0%
2.3%
3.3%
1.1%
1.2%
0.0%
0.7%
0.5%
Source
Sink

Southern to SCPSA Border 500 MW

Transmission System Impacts

- **Thermal Constraints Identified:**
  - One (1) 115 kV T.L.

Total Cost (2013$) = $5,000,000

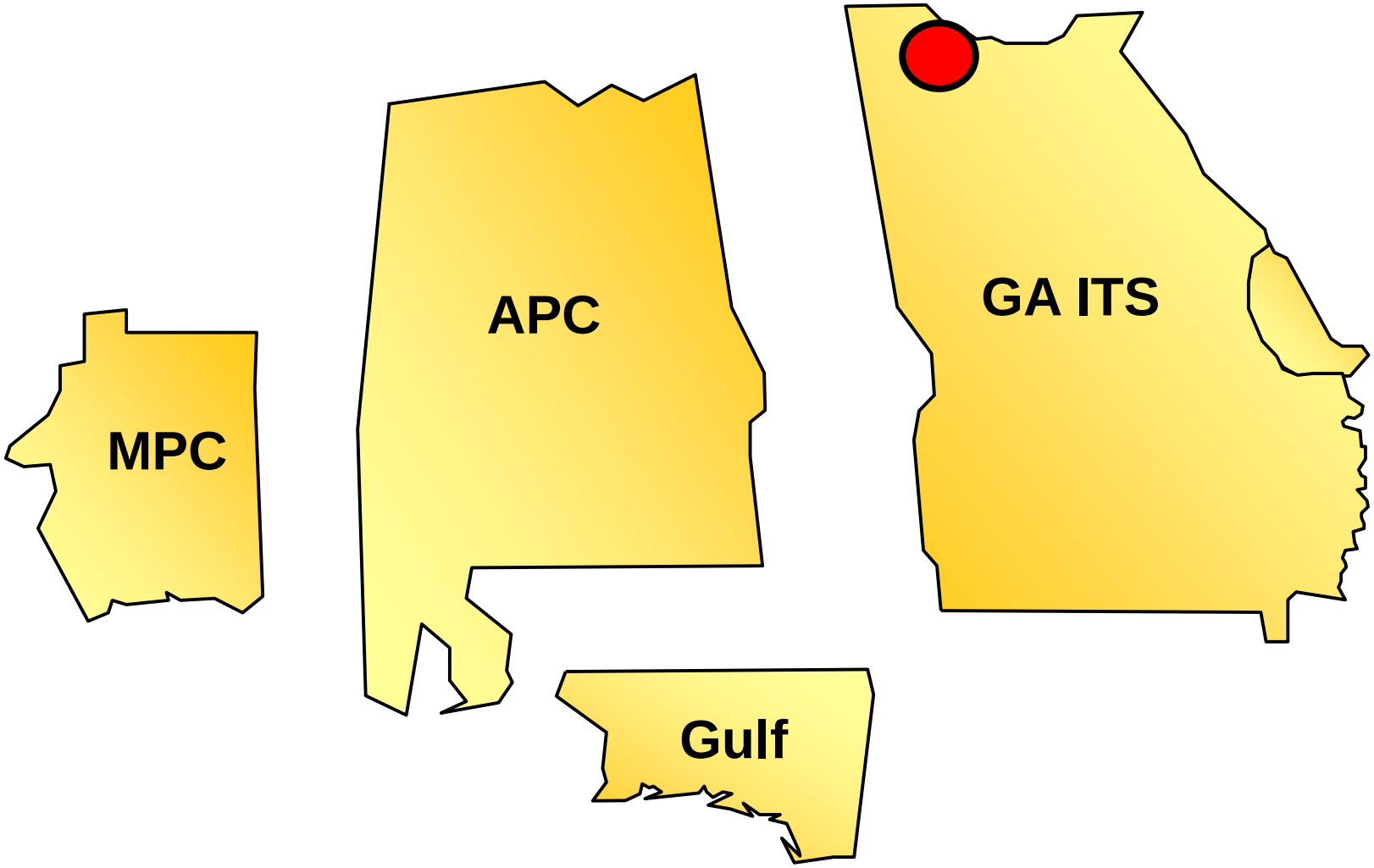
Southern to SCPSA Border 500 MW

Significant Constraints – Pass 0

Limiting Elements	Rating (MVA)	Thermal Loading (%)	
		Without Request	With Request
Chatsworth – Coosawattee 115 kV TL	137	91.9	102.4

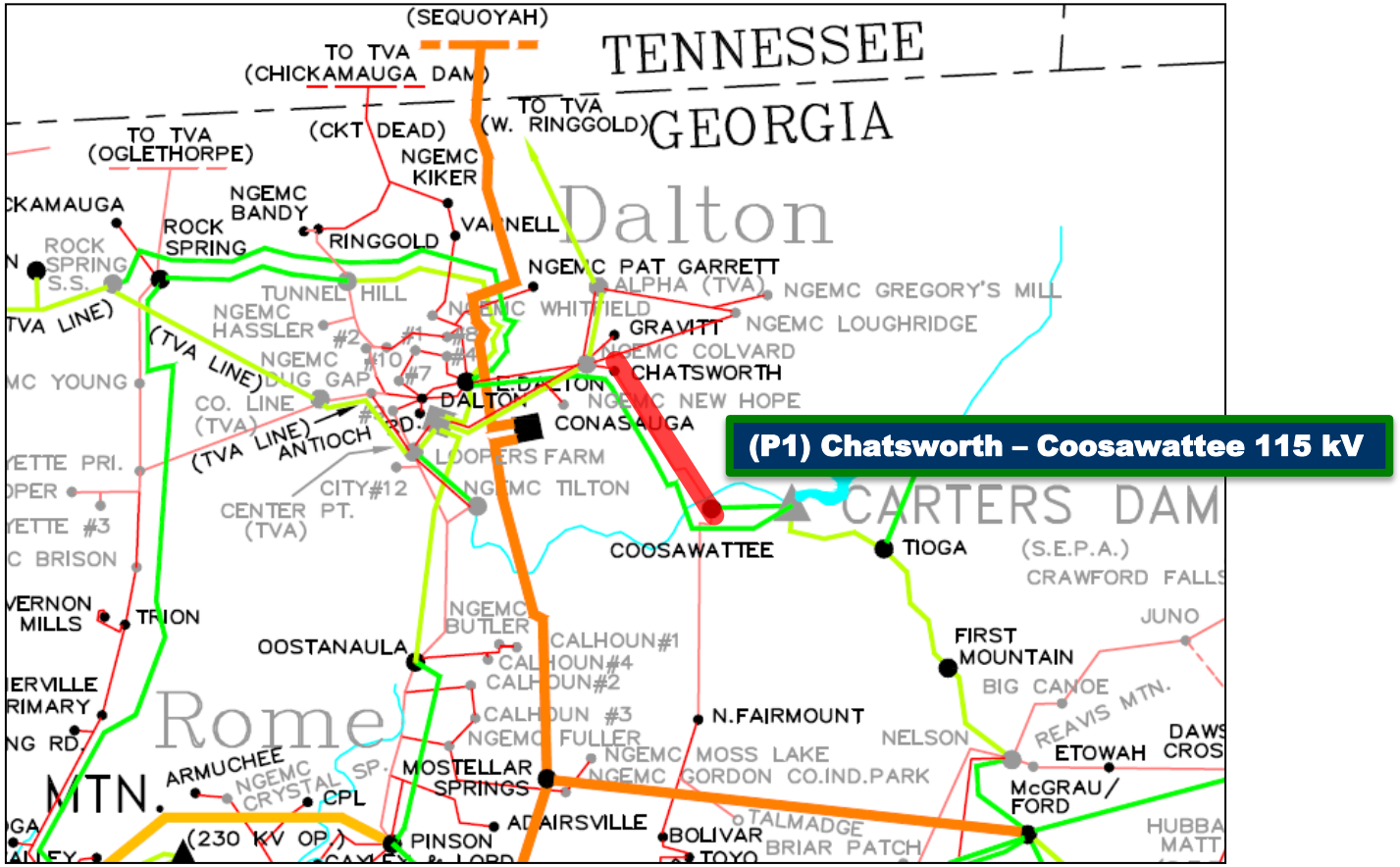
Southern to SCPSA Border 500 MW

Significant Constraints – Pass 0



Southern to SCPSA Border 500 MW

Significant Constraints – Pass 0



Southern to SCPSA Border 500 MW

Projects Identified

Item	Proposed Enhancements	Cost ($)
P1	**Chatsworth – Coosawattee 115 kV T.L.** - Reconductor approximately 12 miles of 336 ACSR 115 kV transmission line with 795 ACSR at 100°C.	**$5,000,000**

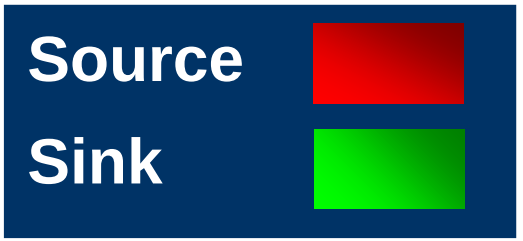
Total Cost (2013$) = $5,000,000

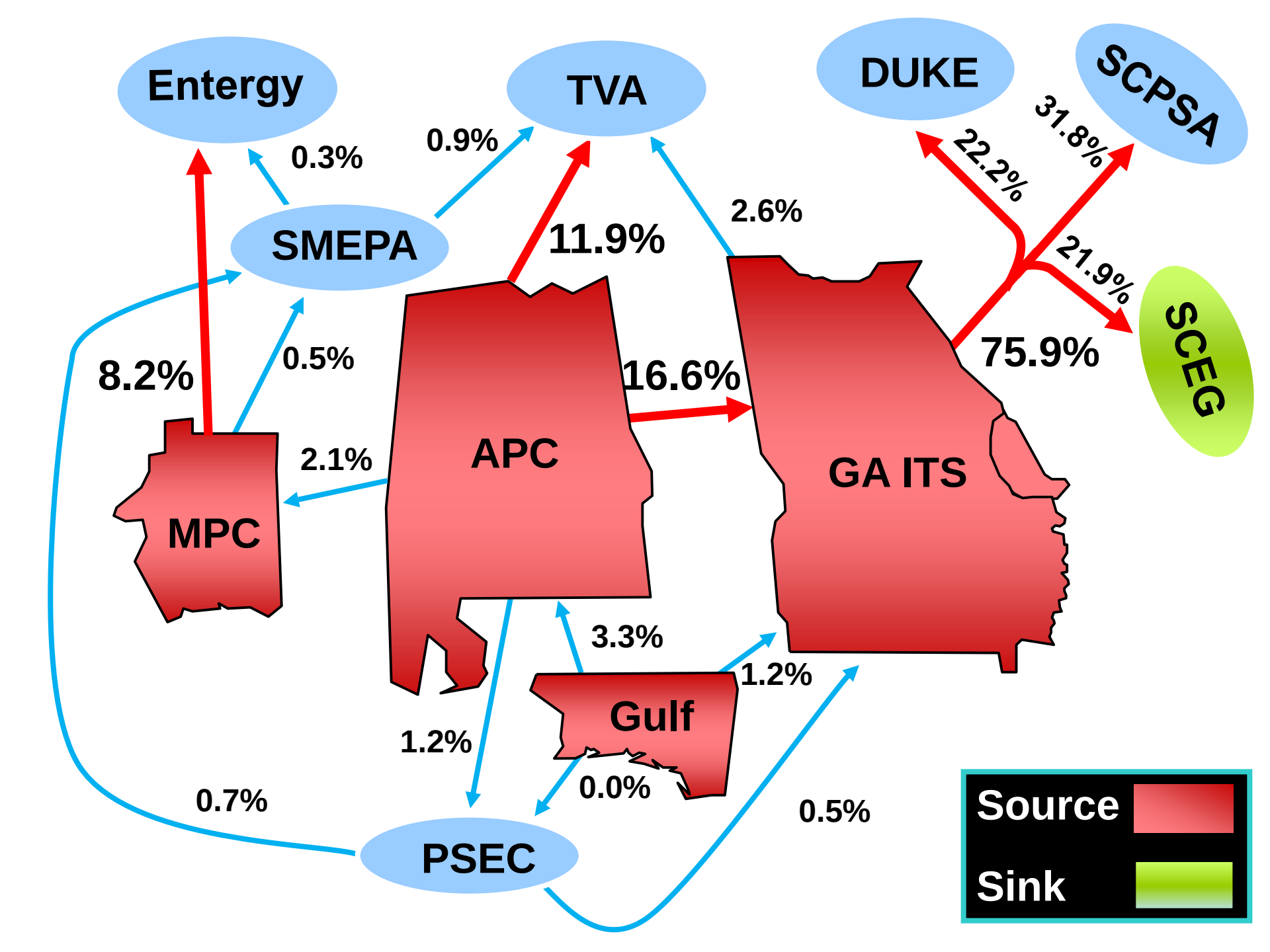
Southern
to
SCE&G Border

500 MW

Southern to SCE&G Border
500 MW

- **Transfer Type:** Generation to Load (2015 Winter Peak)
- **Source:** Southern Generation
- **Sink:** Uniform load scale in SCE&G

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0.0%
0.7%
0.5%
Source
Sink

Southern to SCE&G Border 500 MW

Transmission System Impacts

- **Thermal Constraints Identified:**
  - One (1) 115 kV T.L.

Total Cost (2013$) = $5,000,000

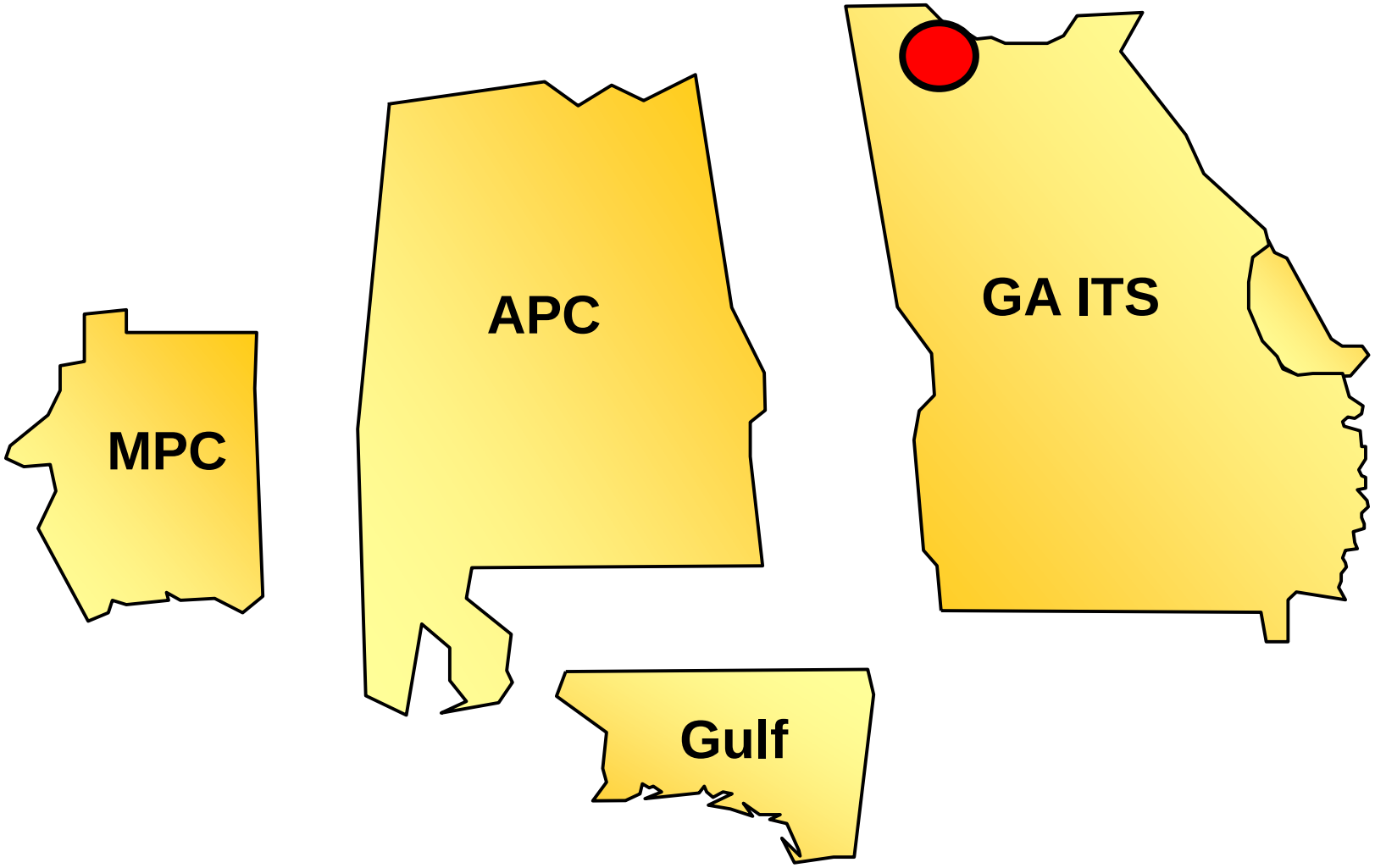
Southern to SCE&G Border 500 MW

Significant Constraints – Pass 0

Limiting Elements	Rating (MVA)	Thermal Loading (%)	
		Without Request	With Request
Chatsworth – Coosawattee 115 kV TL	137	91.9	102.4

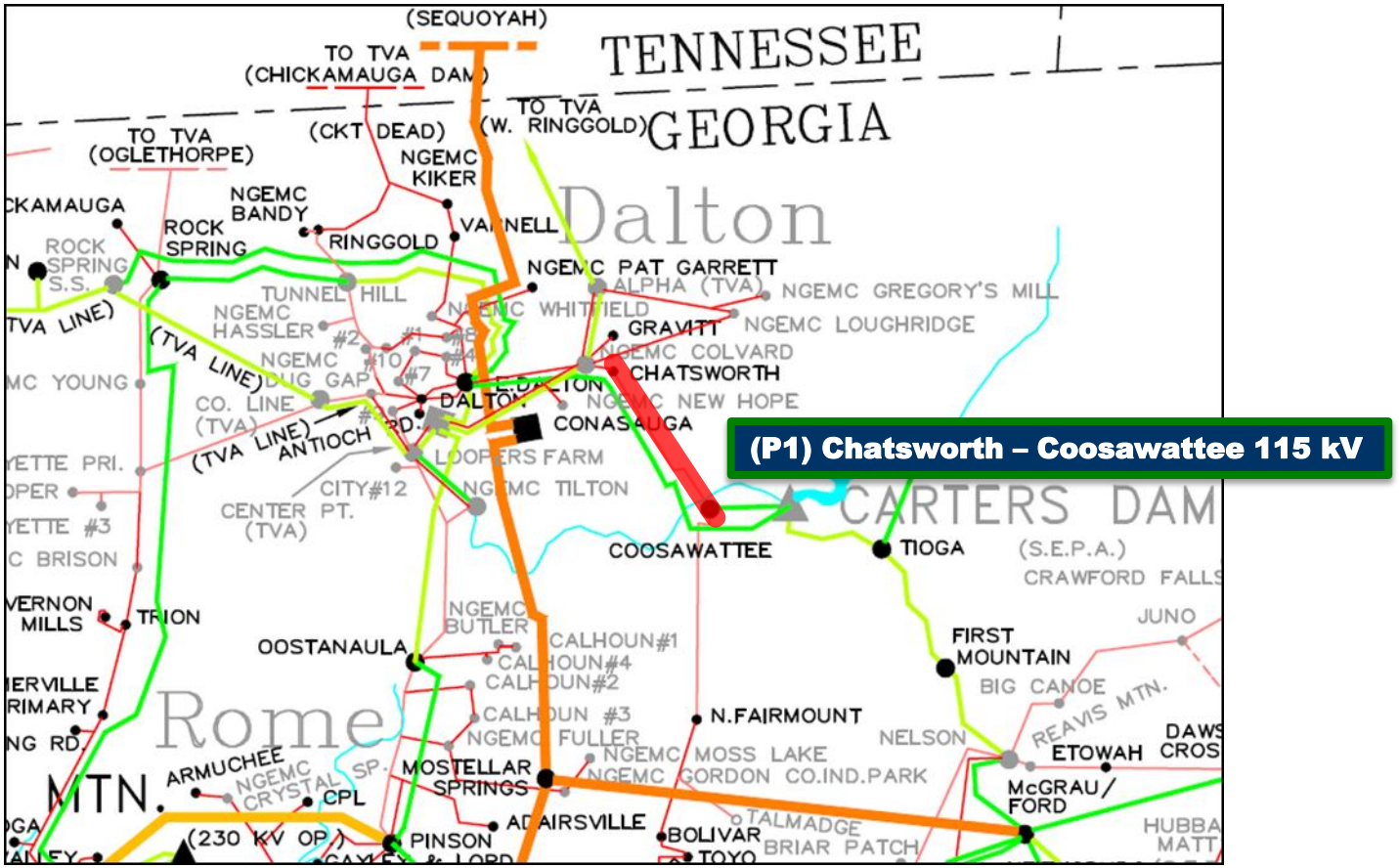
Southern to SCE&G Border 500 MW

Significant Constraints – Pass 0



Southern to SCE&G Border 500 MW

Significant Constraints – Pass 0



Southern to SCE&G Border 500 MW

Projects Identified

Item	Proposed Enhancements	Cost ($)
P1	**Chatsworth – Coosawattee 115 kV T.L.** - Reconductor approximately 12 miles of 336 ACSR 115 kV transmission line with 795 ACSR at 100°C.	**$5,000,000**

Total Cost (2013$) = $5,000,000

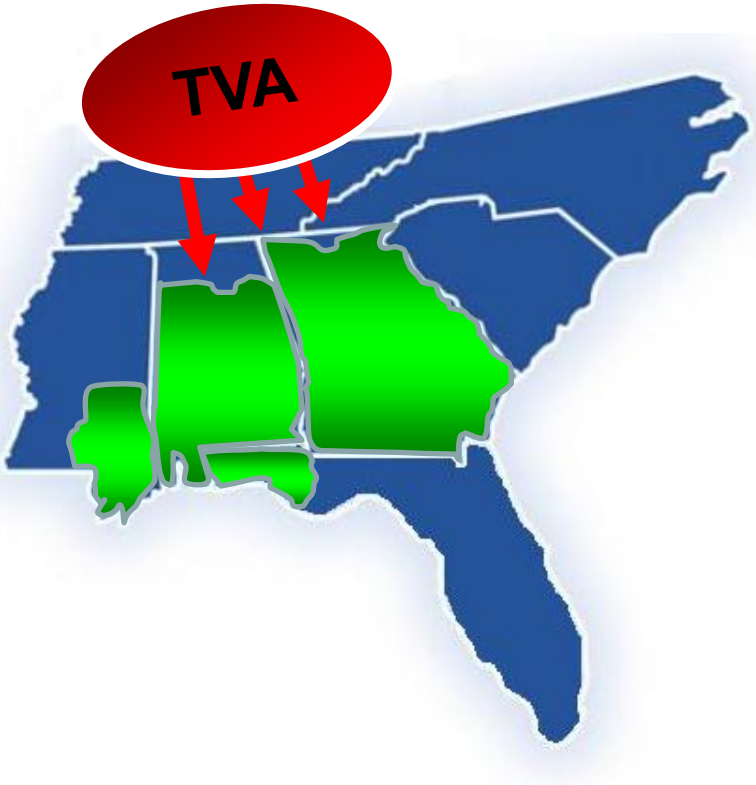
TVA Border to Southern

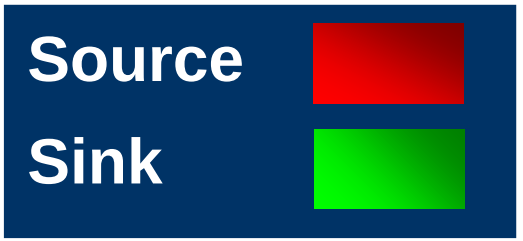
1500 MW

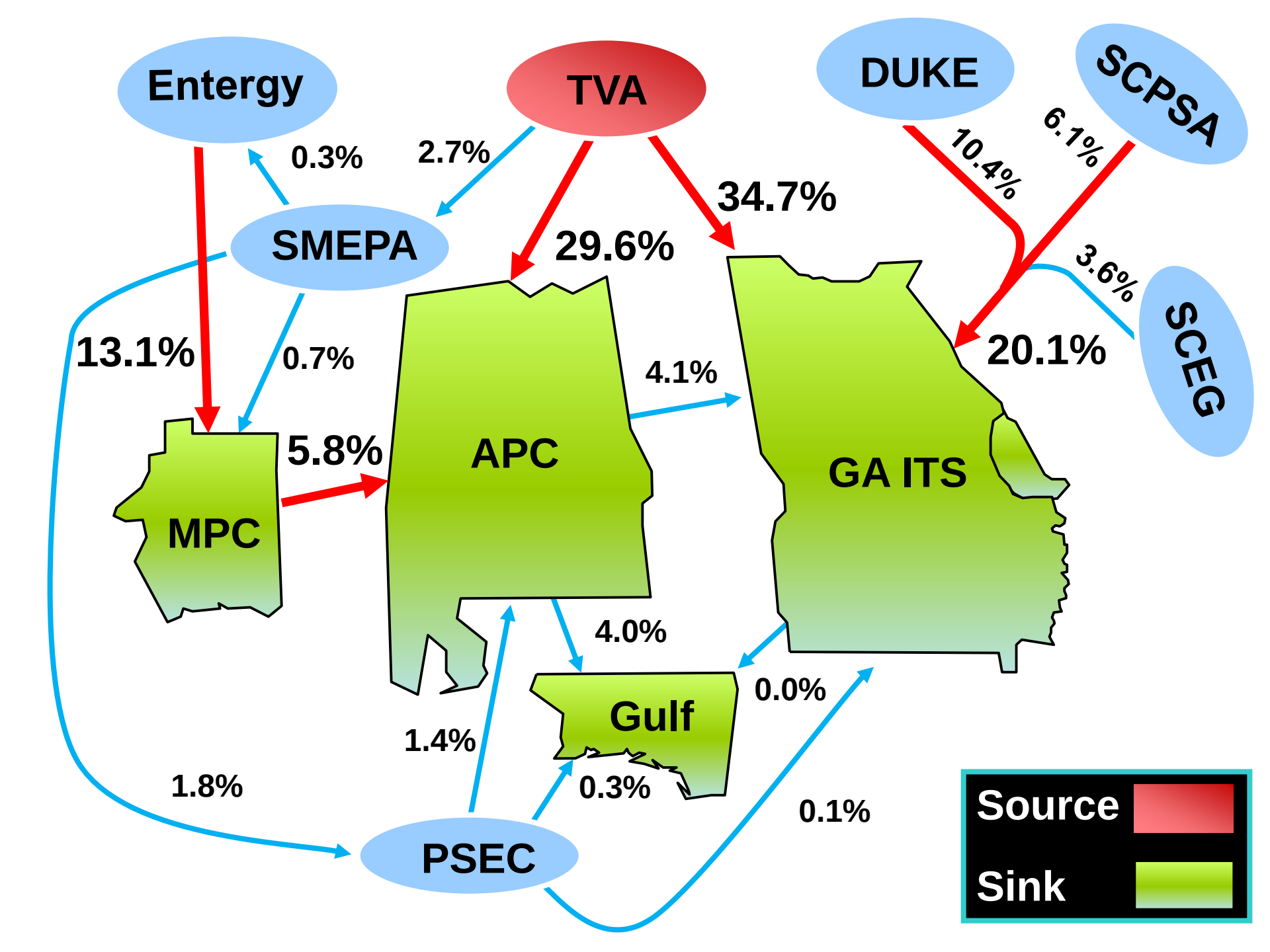
(Spring Valley)

TVA Border to Southern 1500 MW (Spring Valley)

- **Transfer Type:** Load to Generation (2017 Spring Valley)
- **Source:** Uniform load scale in TVA
- **Sink:** Southern Generation



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Source
Sink

TVA Border to Southern 1500 MW (Spring Valley)

Transmission System Impacts

- **Thermal Constraints Identified:**
  - None

Total Cost (2013$) = $0

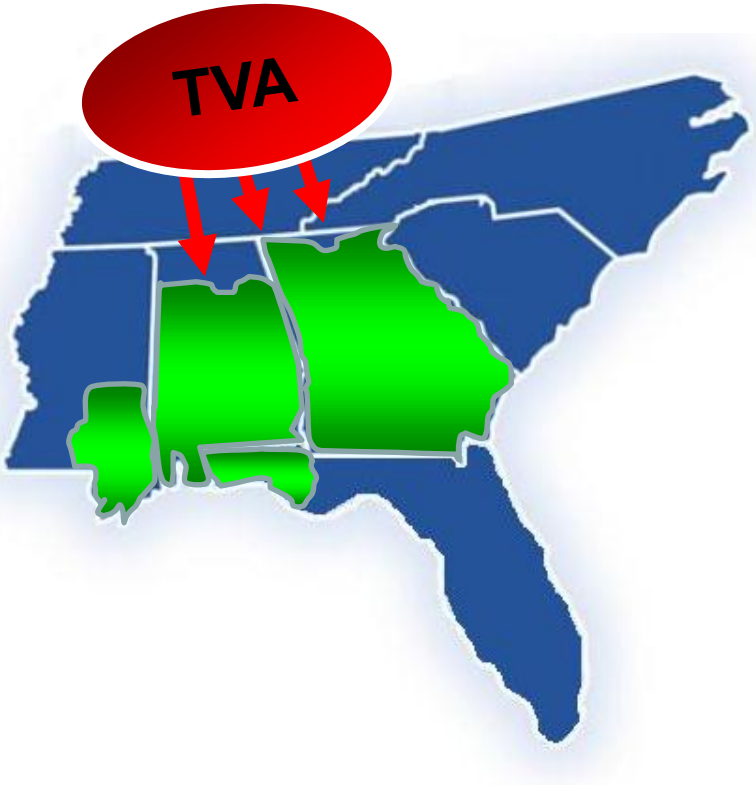
TVA Border to Southern

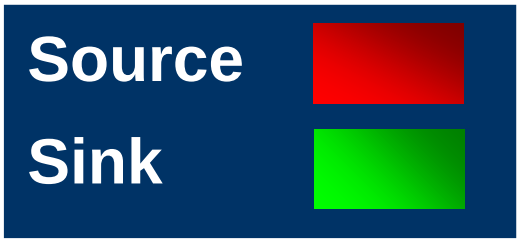
1500 MW

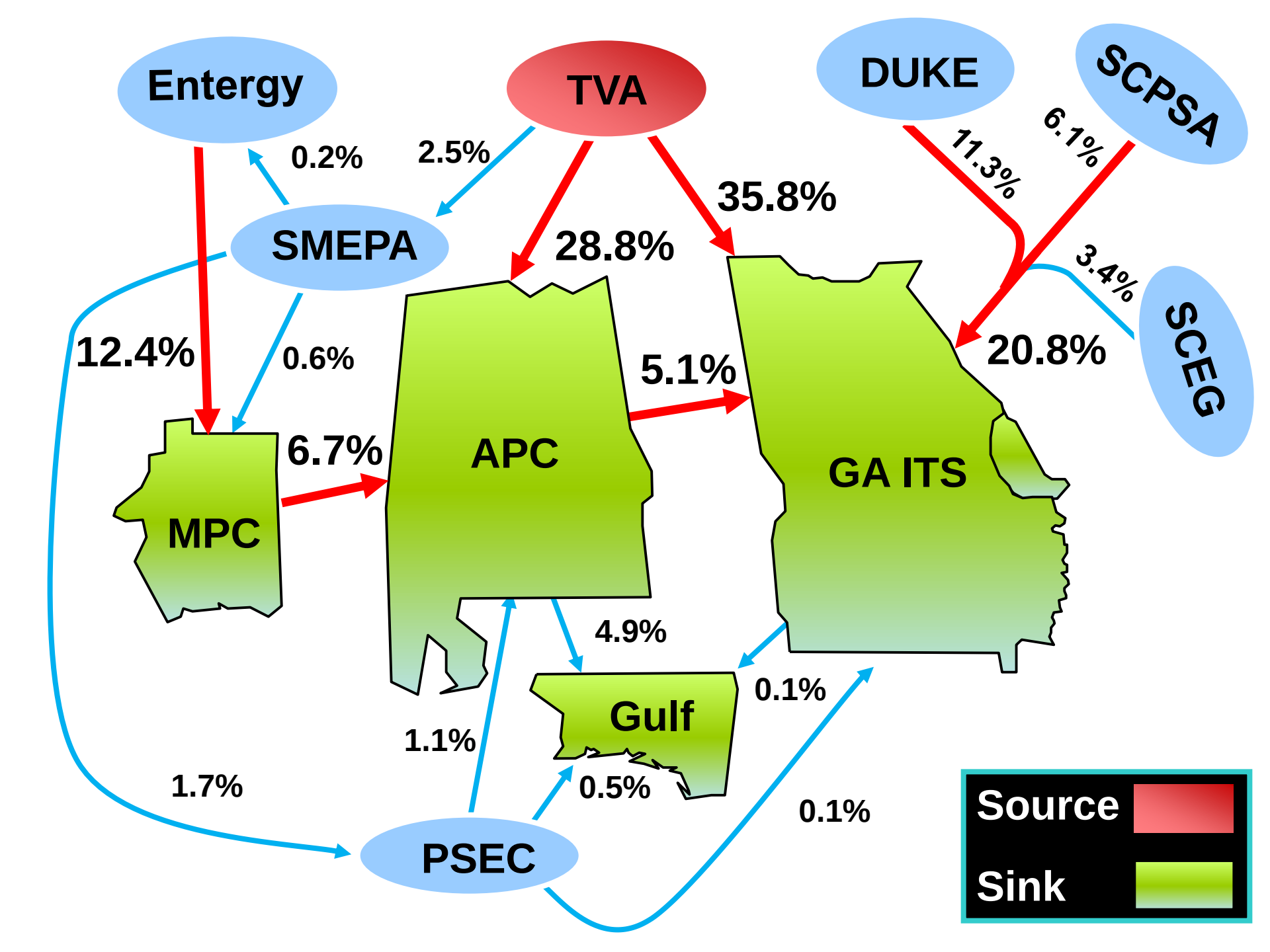
(Summer Peak)

TVA Border to Southern 1500 MW (Summer Peak)

- **Transfer Type:** Load to Generation (2017 Summer Peak)
- **Source:** Uniform load scale in TVA
- **Sink:** Southern Generation



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Source
Sink

TVA Border to Southern 1500 MW (Summer Peak)

Transmission System Impacts

- **Thermal Constraints Identified:**
  - One (1) 500 kV T.L.
  - Five (5) 230 kV T.L.
  - Two (2) 161 kV T.L.

Total Cost (2013$) = $137,900,000

TVA Border to Southern 1500 MW (Summer Peak)

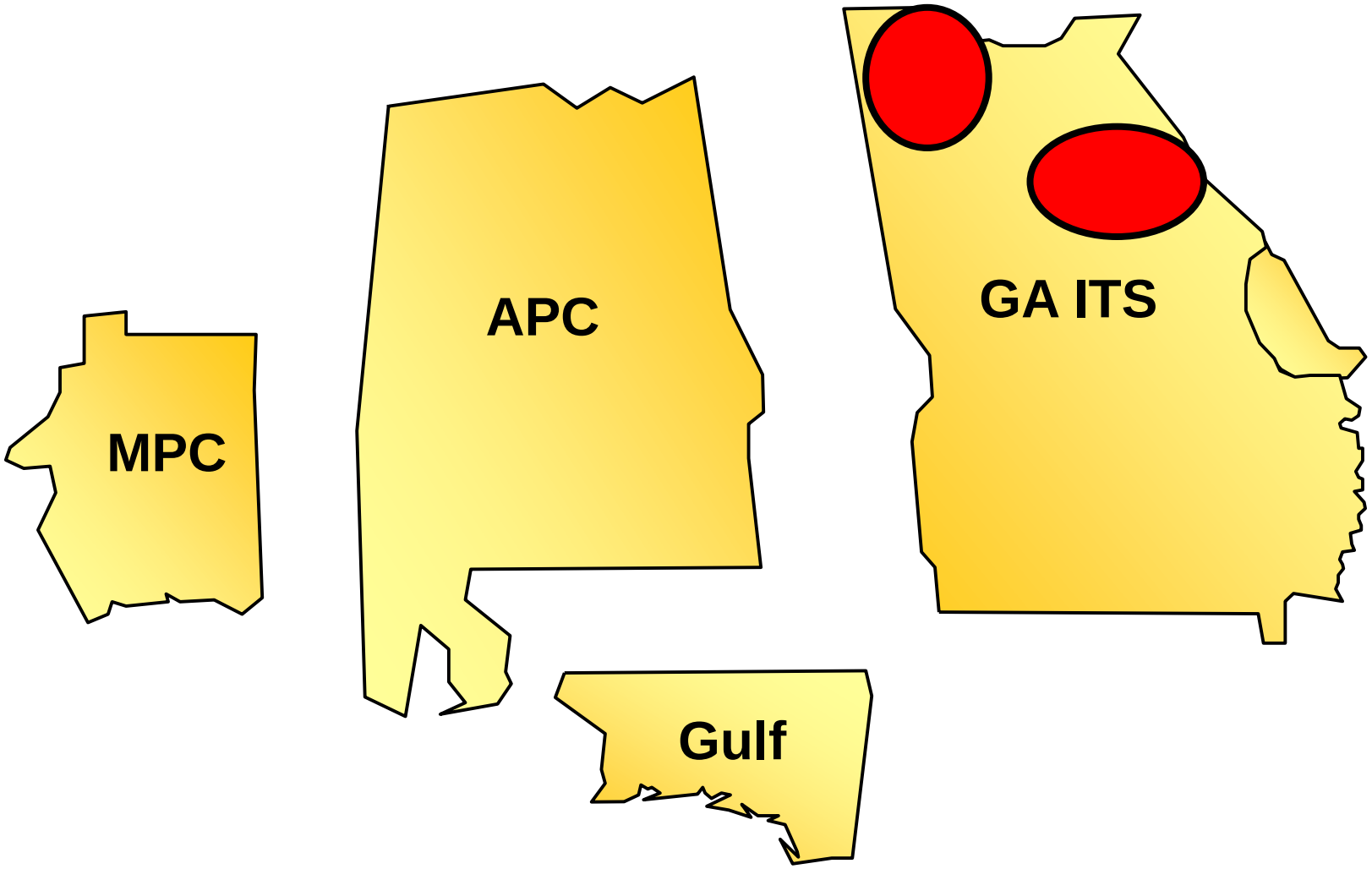
Significant Constraints – Pass 0

Limiting Elements	Rating (MVA)	Thermal Loading (%)	
		Without Request	With Request
Conasauga – Bradley TN 500 kV TL	2598	88.0	104.2 (1)
South Hall – Candler 230 kV TL	509	93.8	103.0
Pinson – Oostanaula 230 kV TL	664	85.5	101.2
Bio – Vanna 230 kV TL	433	96.0	101.1
Lexington – Russell 230 kV TL	596	95.1	100.4

(1) The limiting element of this tie-line constraint is located within TVA

TVA Border to Southern
1500 MW (Summer Peak)

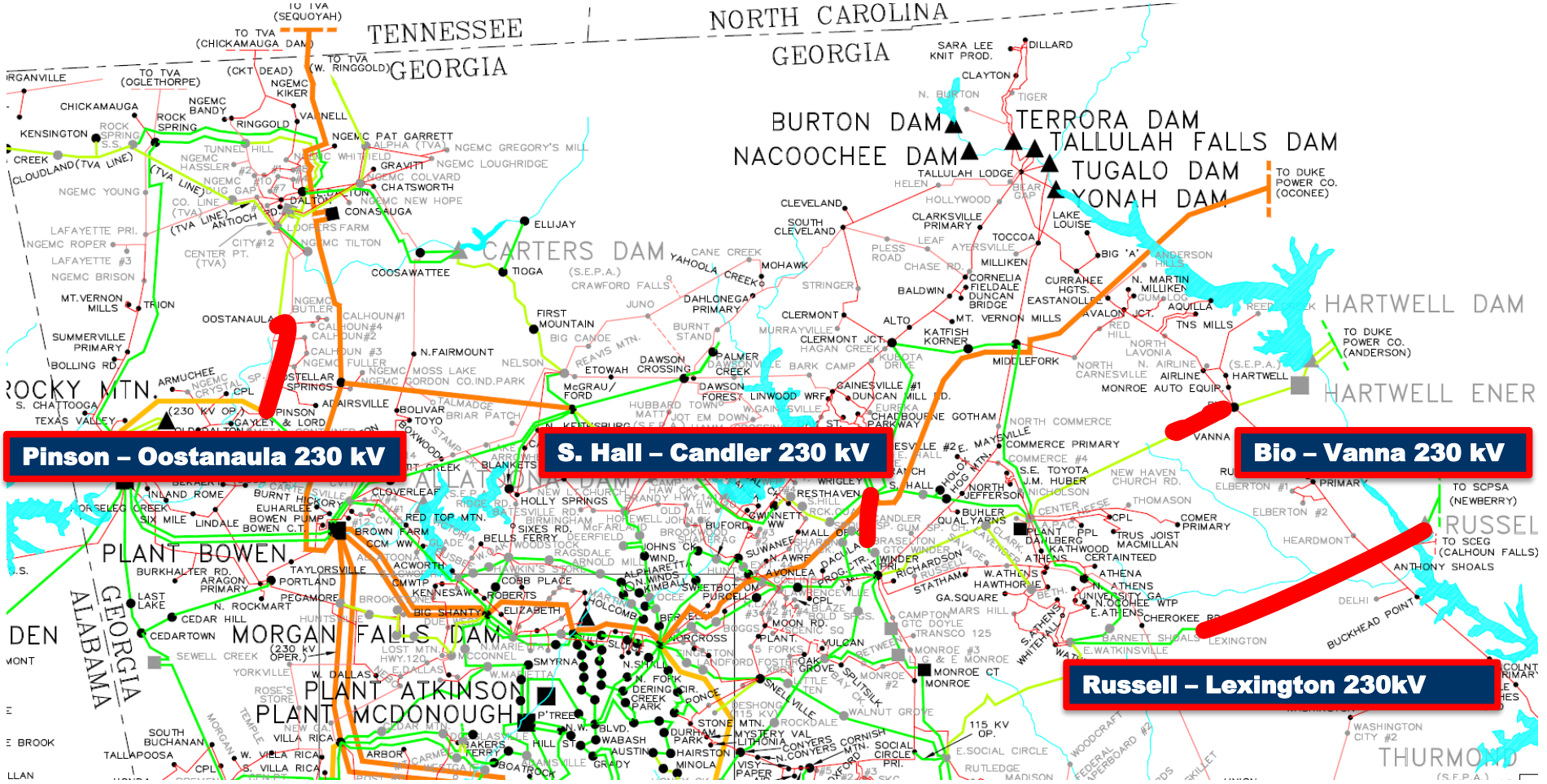
Significant Constraints – Pass 0



Southeastern Regional
TRANSMISSION PLANNING

TVA Border to Southern 1500 MW (Summer Peak)

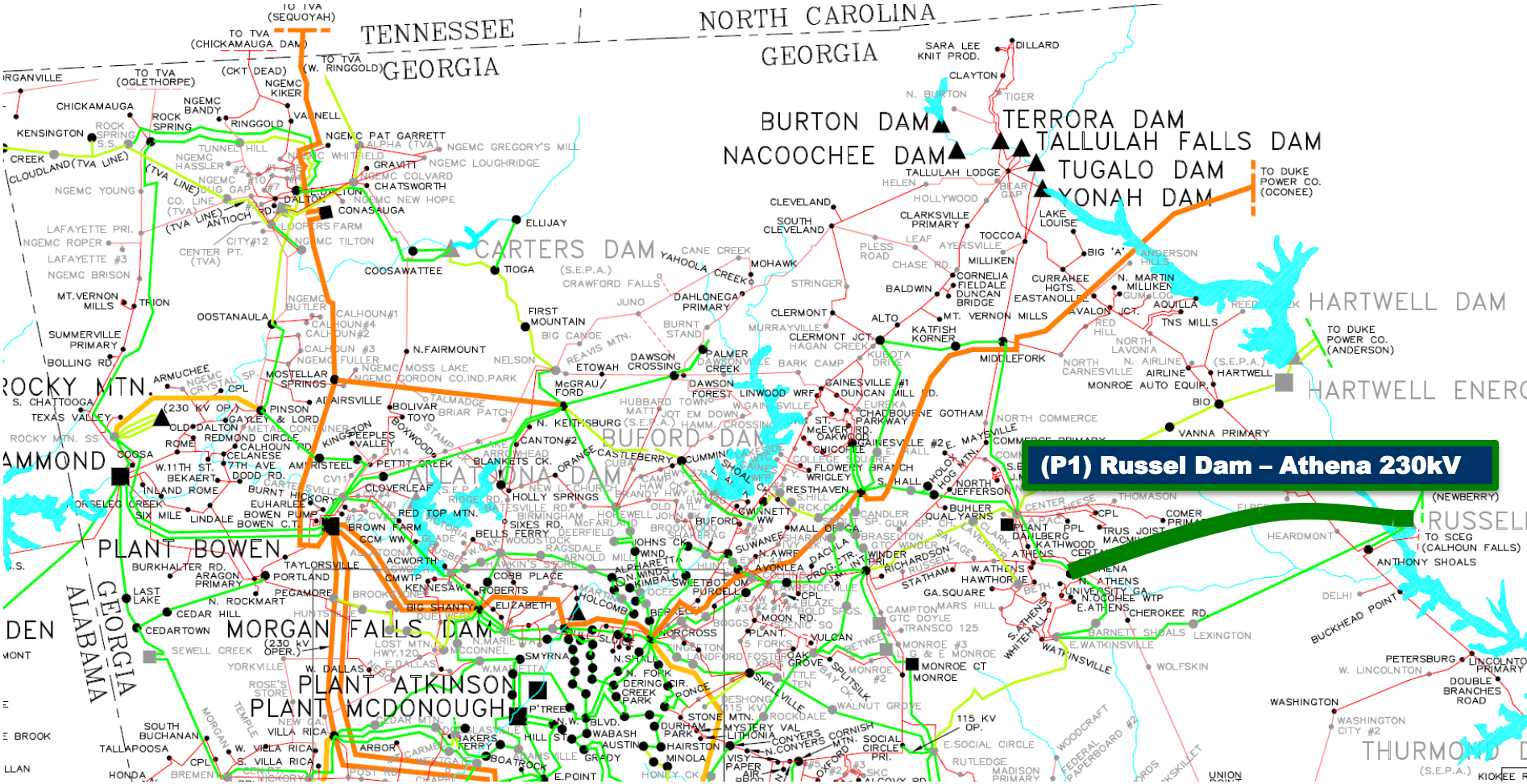
Significant Constraints – Pass 0



Southeastern Regional TRANSMISSION PLANNING

TVA Border to Southern 1500 MW (Summer Peak)

Proposed Enhancements – Pass 1



TVA Border to Southern 1500 MW (Summer Peak)

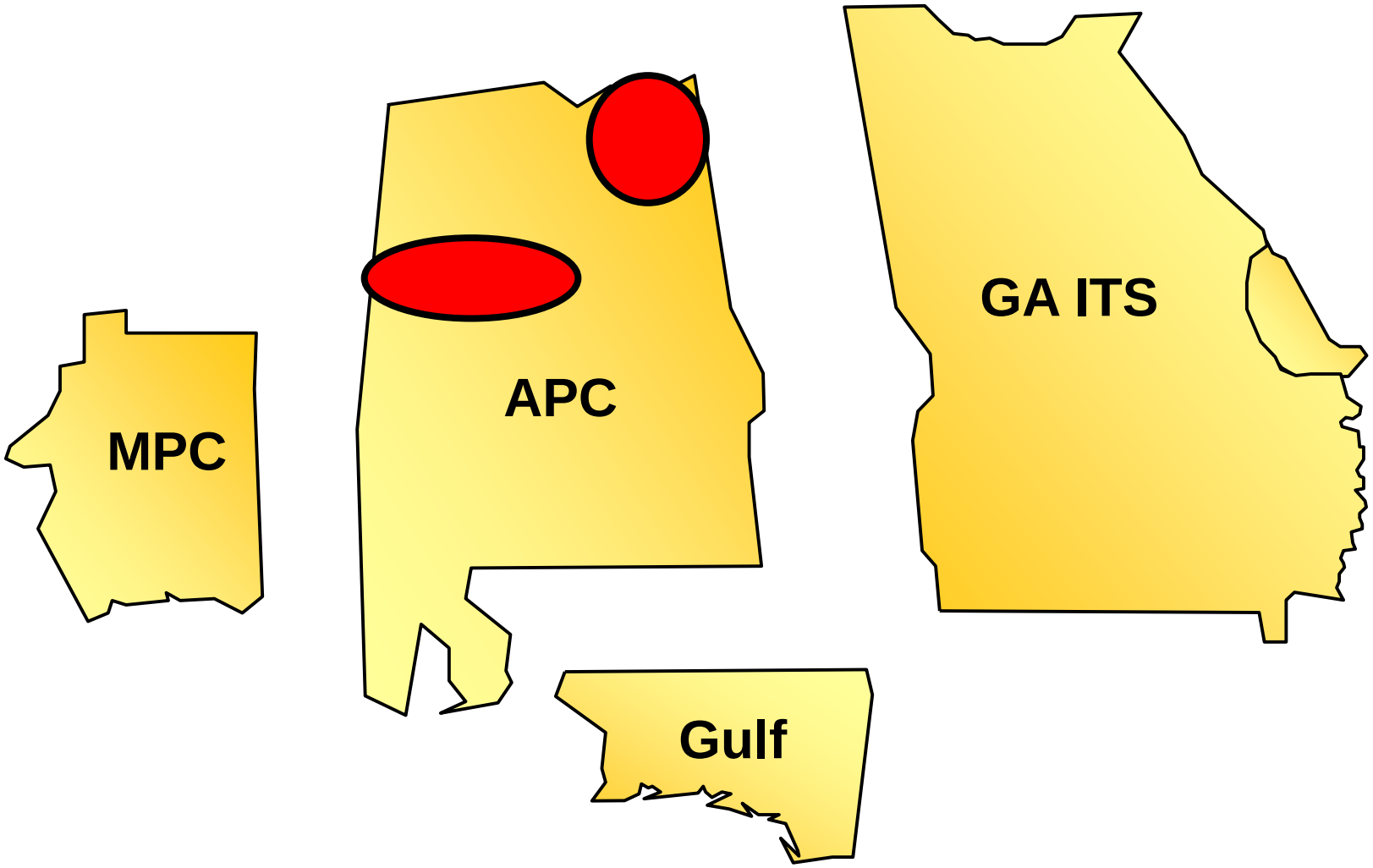
Significant Constraints – Pass 1

Limiting Elements	Rating (MVA)	Thermal Loading (%)	
		Without Request	With Request
Fayette – Gorgas 161 kV TL	193	103.2 (1)	126.8
Attalla – Albertville 161 kV TL	193	96.8	122.7
Clay – Argo 230 kV TL	602	87.9	108.7
Leeds TS – Argo 230 kV TL	602	84.5	105.3

(1) A current operating procedure is sufficient to alleviate this identified constraint without the addition of the proposed transfer. However, the additional transfer exacerbates the loading on this transmission facility such that the operating procedure becomes insufficient.

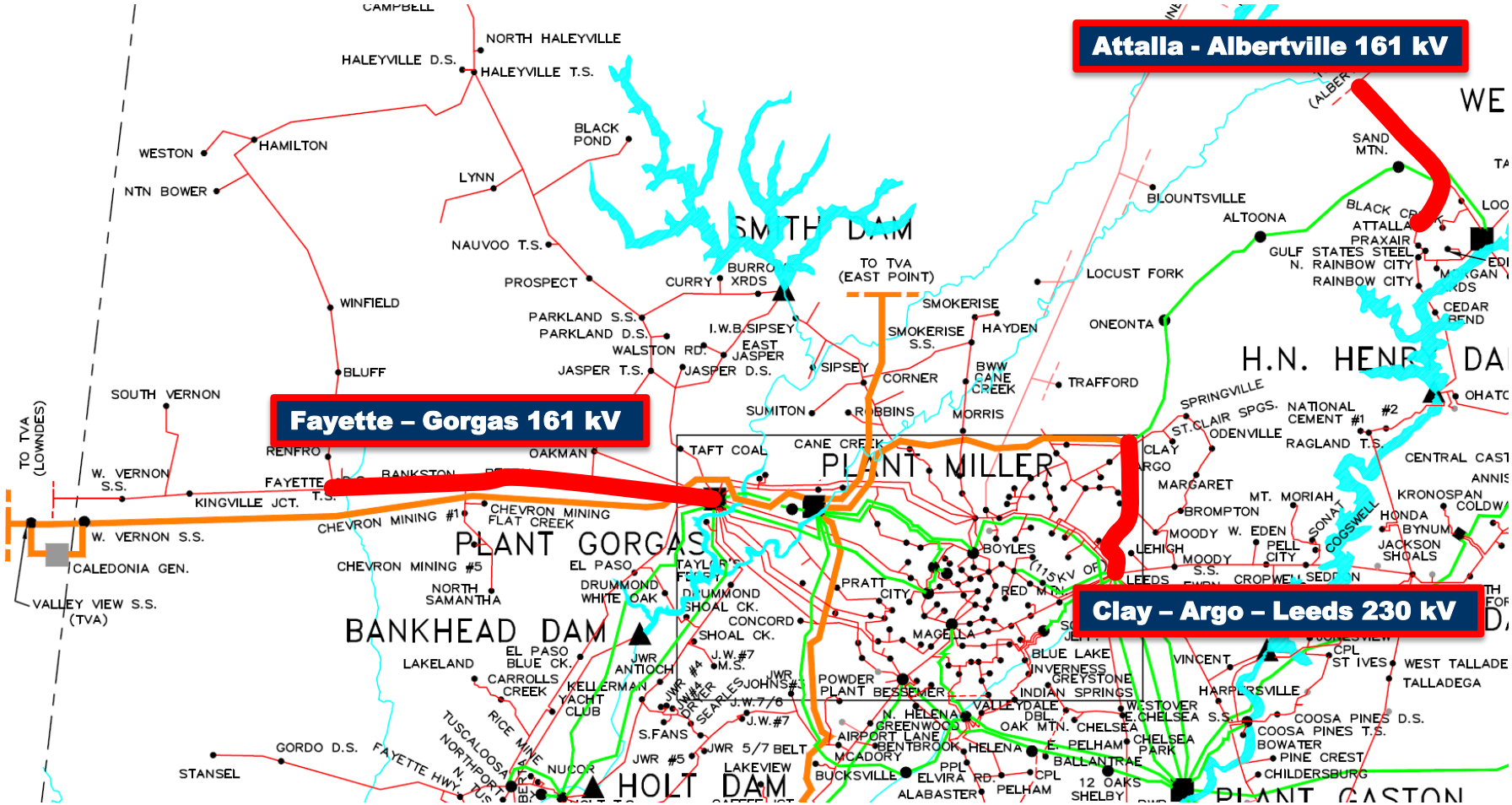
TVA Border to Southern
1500 MW (Summer Peak)

Significant Constraints – Pass 1



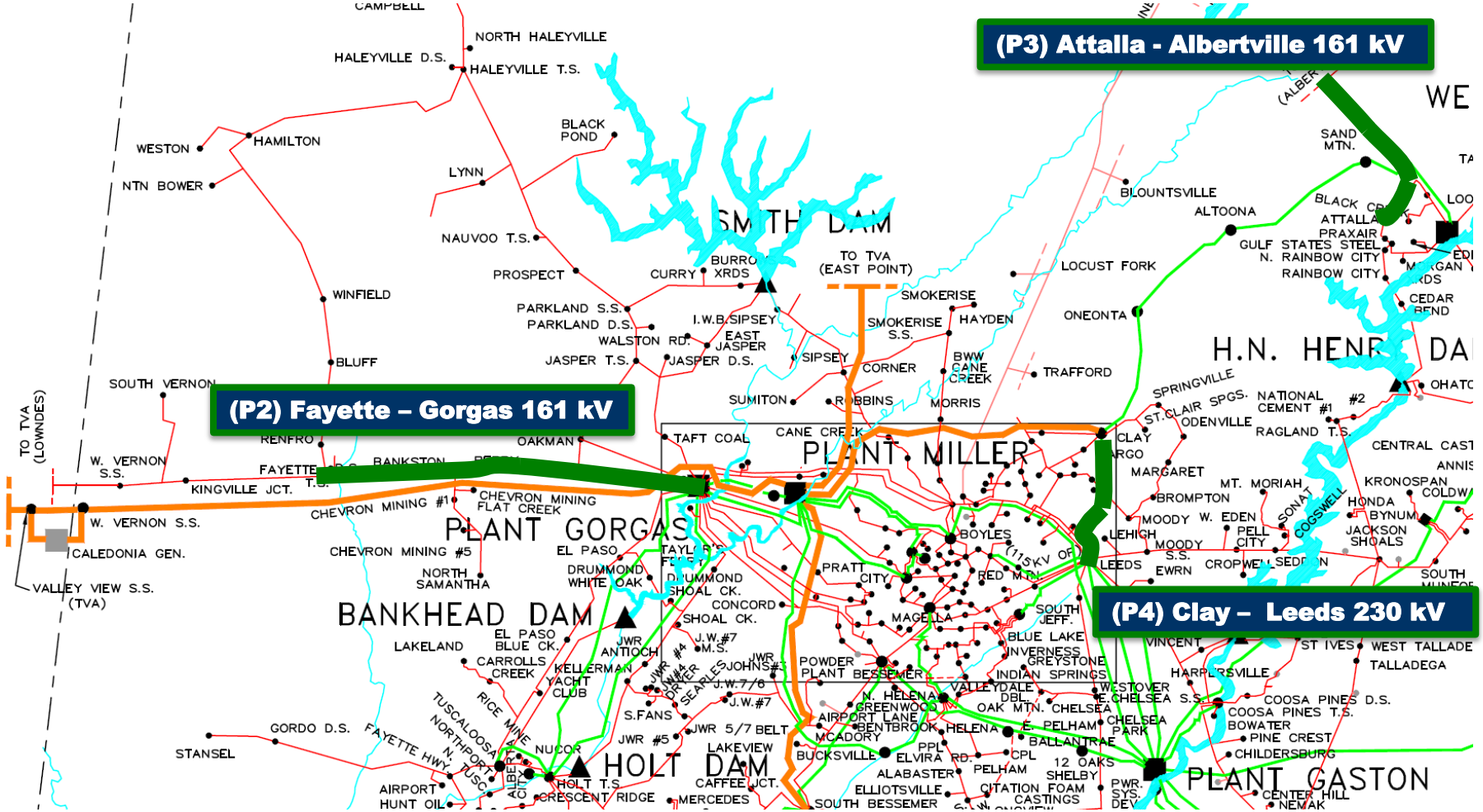
TVA Border to Southern 1500 MW (Summer Peak)

Significant Constraints – Pass 1



TVA Border to Southern 1500 MW (Summer Peak)

Proposed Enhancements – Pass 2



TVA Border to Southern 1500 MW (Summer Peak)

Projects Identified

Item	Proposed Enhancements	Cost ($)
P1	**Russell Dam – Athena 230 kV T.L.** - 45 miles of new 230 kV Line - Bundled (2) 1351 ACSR at 100°C	**$60,000,000**
P2	**Fayette – Gorgas 161 kV Line** - Rebuild 38.8 miles with 1351 ACSR at 100°C	**$36,300,000**
P3	**Attalla – Albertville 161 kV Line** - Reconductor 19.6 miles with 1351 ACSR at 100°C	**$20,600,000**
P4	**Clay TS – Leeds TS 230 kV Line** - Reconductor 17.3 miles with bundled (2) 1351 ACSR at 100°C	**$21,000,000**

Total Cost (2013$) = $137,900,000

Southern

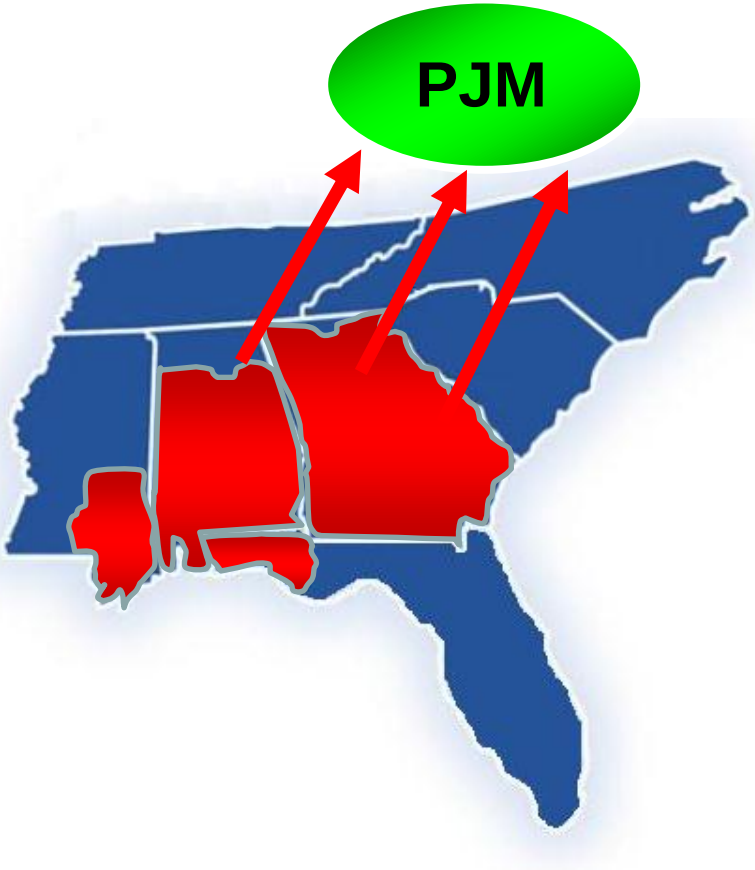
to

PJM

1000 MW

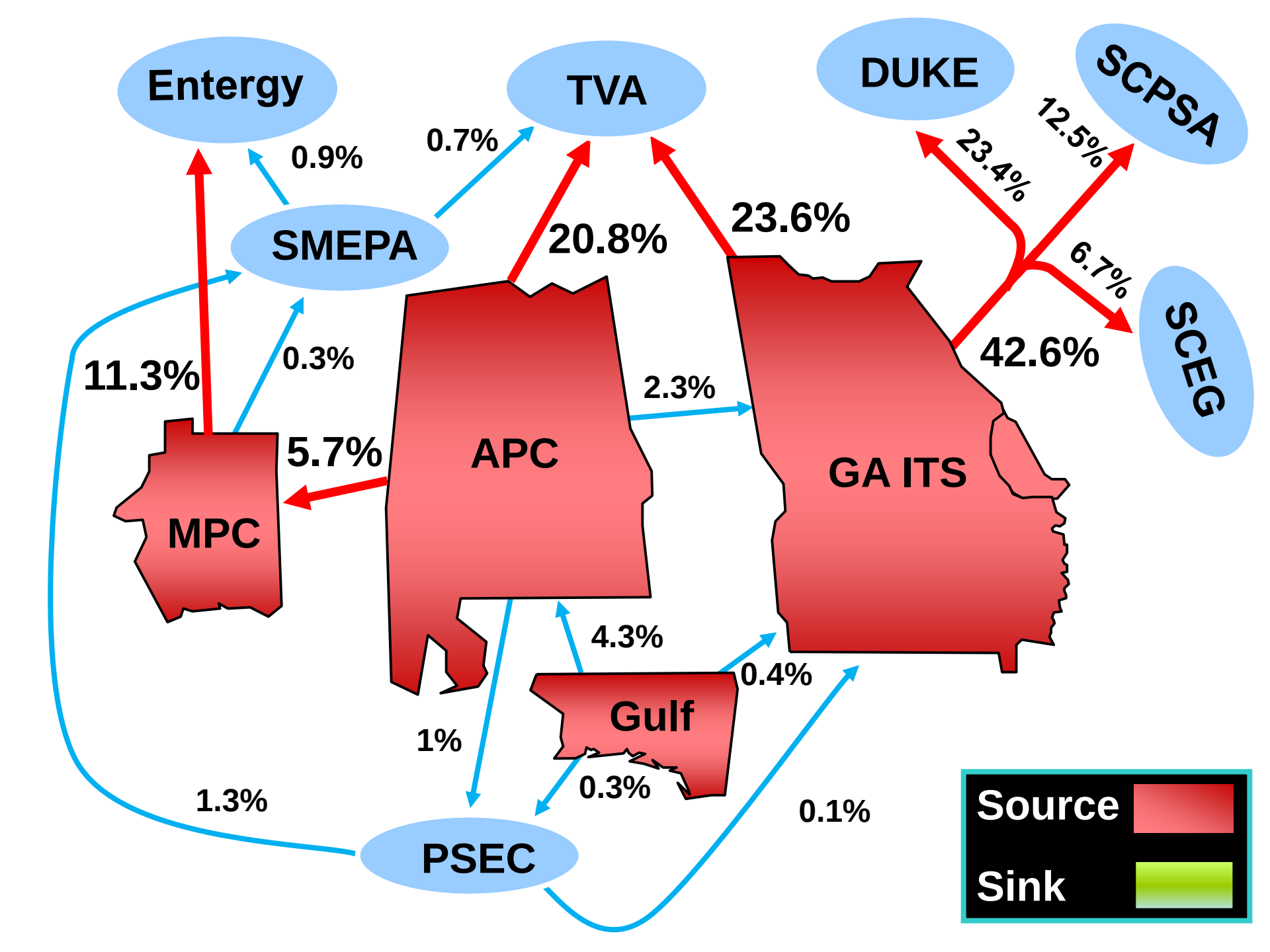
Southern to PJM
1000 MW

- **Transfer Type:** Generation to Load (2023 Summer Peak)
- **Source:** Southern Generation
- **Sink:** Uniform load scale in PJM



Source

Sink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1.3%
0.1%
Source
Sink

Southern to PJM 1000 MW

Transmission System Impacts

- **Thermal Constraints Identified:**
  - One (2) 230 kV T.L.
  - One (1) 115 kV T.L.

Total Cost (2013$) = $920,000

Southern to PJM 1000 MW

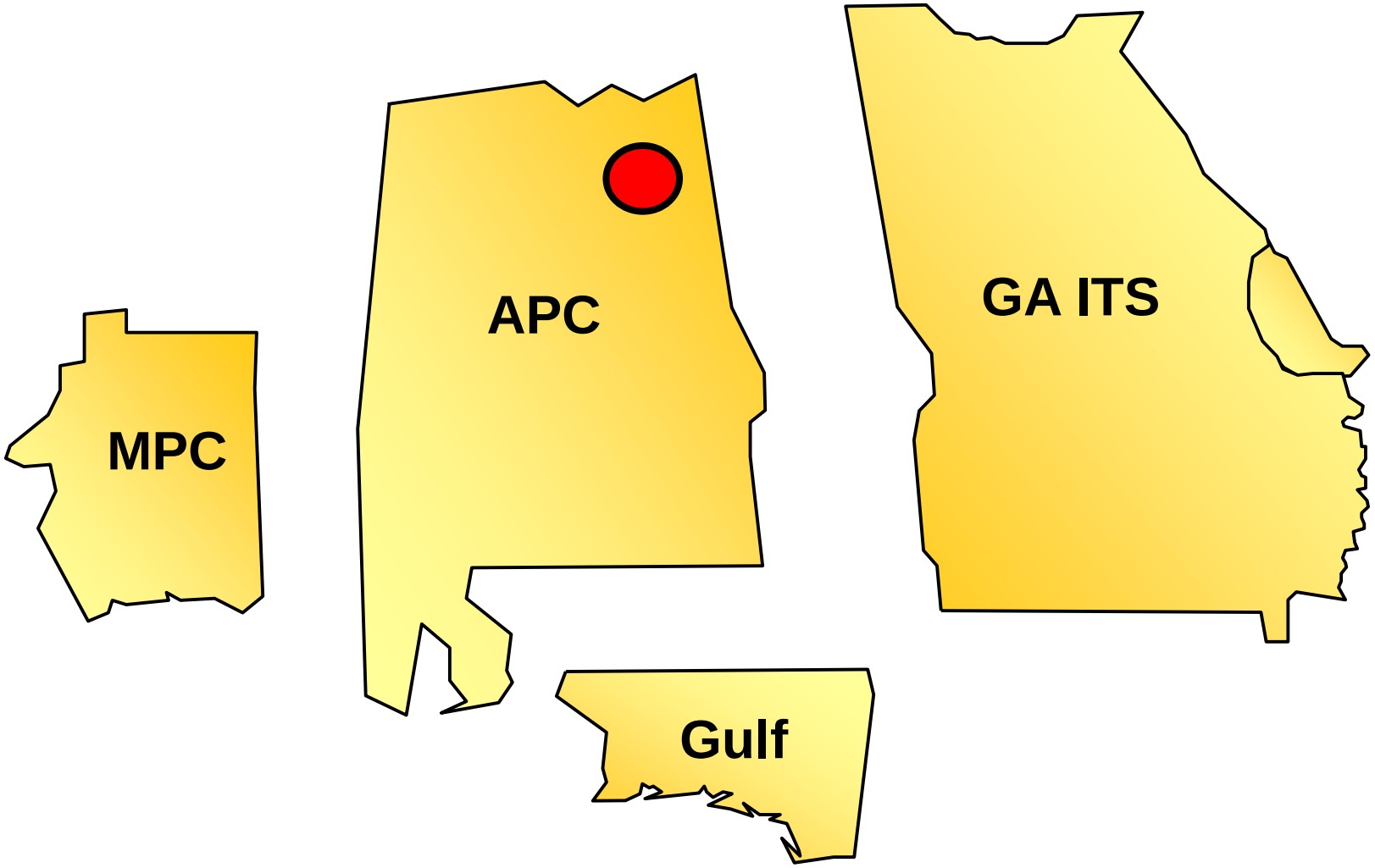
Significant Constraints – Pass 0

Limiting Elements	Rating (MVA)	Thermal Loading (%)	
		Without Request	With Request
Vogtle – SRS 230 kV TL	137	97.8	104.5 (1)
Morgan Crossroads – GS Steel 115 kV TL	112	87.6	100.4

(1) The limiting element of this tie-line constraint is located within SCE&G

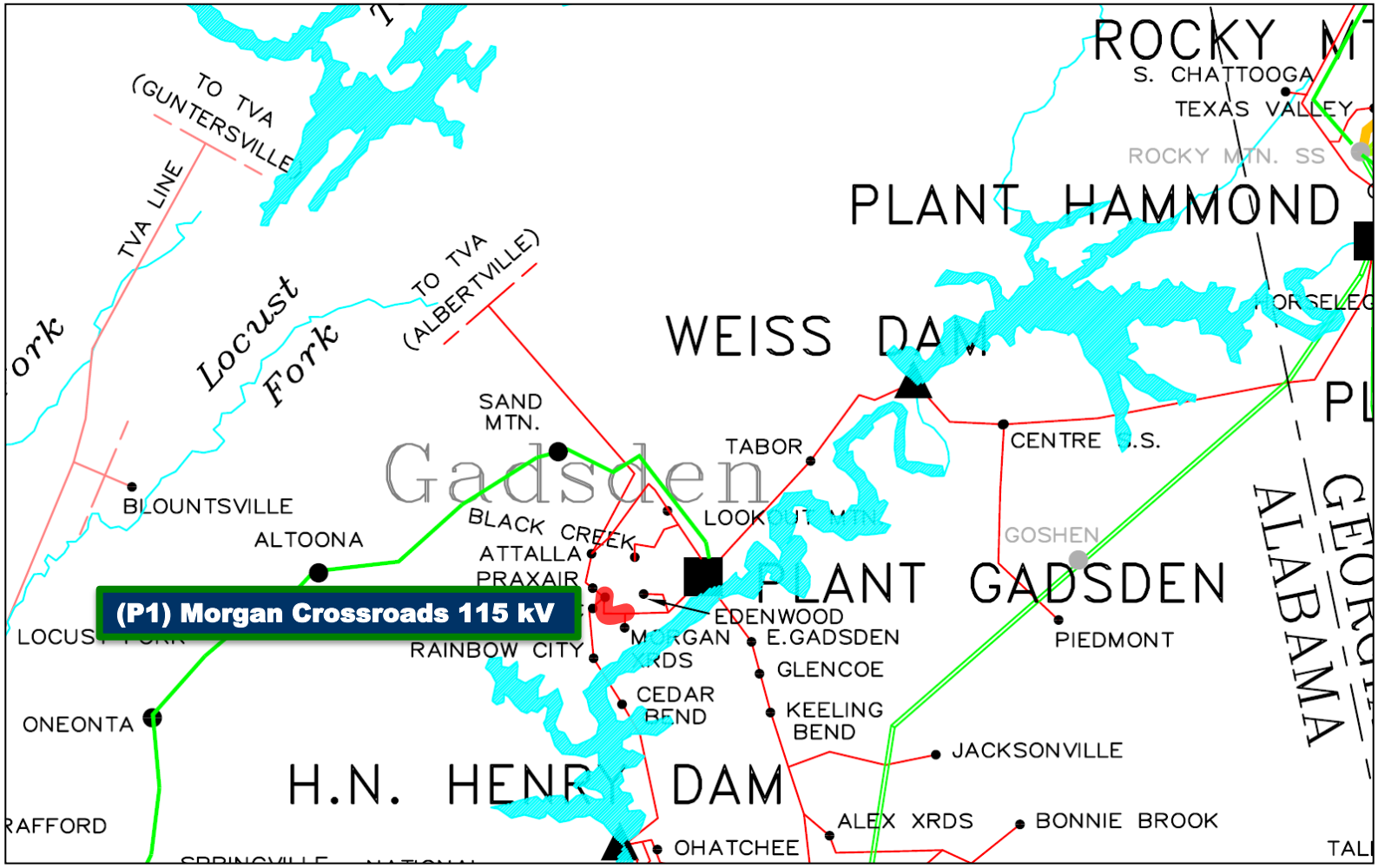
Southern to PJM 1000 MW

Significant Constraints – Pass 0



Southern to PJM 1000 MW

Significant Constraints – Pass 0



Southern to PJM 1000 MW

Projects Identified

Item	Proposed Enhancements	Cost ($)
P1	**Morgan Crossroads – GS Steel 115 kV T.L.** - Upgrade 2.5 miles from 75°C to 100°C	**$920,000**

Total Cost (2013$) = $920,000

FRCC Coordination Update

FRCC Coordination Update

- **Exchanged the latest transmission models for the ten year planning horizon.**

- **Models will be incorporated into subsequent base cases.**

SERC Regional Model Development Update

SERC Regional Model Development

- **Data Bank Update ("DBU")**
  - May 20th – May 23rd
  - 2013 Series SERC LTSG Models Completed
- **Linear Transfers and AC verification performed**
- **Currently compiling the results into the SERC LTSG report**

SIRPP

Update

Shelby to TVA/Southern 3500 MW

Transmission System Impacts for the SIRPP

- Three (3) 500 kV Lines
- One (1) 500/230 kV XFMR
- Three (3) 230 kV Lines
- One (1) 230/115 kV XFMRs
- Thirteen (13) 161 kV Lines
- One (1) 115 kV Line

Total Cost (2013$) = $400,605,000

Sullivan to PJM/VACAR 3500 MW

Transmission System Impacts for the SIRPP

- Five (5) 230 kV Lines
- One (1) 230/115 kV XFMR
- Eleven (11) 161 kV Lines
- One (1) 115 kV Line
- One (1) 115 kV SS
- One (1) 115/100 kV XFMR
- Two (2) 100 kV Lines

Total Cost (2013$) = $247,610,000

TVA to LG&E/KU 500 MW

Transmission System Impacts for the SIRPP

- None

Total Cost (2013$) = $0

SIRPP Update

- More detailed information concerning these studies is available on the Southeast Inter-Regional Participation Process website at the following link:

http://www.southeastirpp.com/

Next Meeting Activities

Next Meeting Activities

- **Annual Transmission Planning Summit**

  Location: TBD

  - Date: December 2013
  - Purpose:
    - Final Economic Planning Study Results
    - 10 Year Transmission Expansion Plan
    - Assumptions Input Session

Questions?