South Carolina Regional Transmission Planning

Stakeholder Meeting

Web Conference

March 16, 2016 - 10 AM

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Agenda

1.	Welcome & Introduction	Clay Young & Tom Abrams
2.	Agenda Review	Clay Young
3.	Identify Economic Power Transfer Sensitivities to be Studied	
	a) Review Economic Power Transfer Sensitivity Rules	Chris Wagner
	b) Submit and Discuss Economic Transfer Sensitivity Candidates	Jeff Neal
	c) Select up to Five Sensitivities	Stakeholders
4.	Regional Planning Process	Clay Young
5.	Discussion on Multi-Party Studies	
	a) Proposed New Tie Lines Under Study	Wade Richards
6.	Next Meeting Activities	Clay Young
7.	Closing Comments	Clay Young & Tom Abrams
8.	Adjourn	

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Economic Transmission Planning
Power Transfer Sensitivities

Chris Wagner & Jeff Neal

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Economic Transmission Planning Principles

The purpose of Order 890's Economic Transmission Planning Principle is to:

- ensure that customers may request studies that evaluate potential upgrades or other investments that could reduce congestion or integrate new resources and loads on an aggregated or regional basis
- allow customers, not the transmission provider, to identify those portions of the transmission system where they have encountered transmission problems due to congestion or whether they believe upgrades and other investments may be necessary to reduce congestion and to integrate new resources

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Economic Transmission Planning Principles

(continued)

- allow customers to request that the transmission provider study enhancements that could reduce such congestion or integrate new resources on an aggregated or regional basis without having to submit a specific request for service

This approach ensures that the economic studies required under this principle are focused on customer needs and concerns

Economic Transmission Planning Sensitivity Selection

- All requested sensitivities will be considered except sensitivities that specify specific generation resources
- Up to 5 sensitivities will be identified for study
- If more than 5 are requested, Stakeholder voting members will vote to select the top five
- Sensitivities that are not selected by the voting process as one of the 5 studied sensitivities will be studied only if the requestor(s) pays for the additional study efforts

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Economic Transmission Planning Sensitivity Selection

- SCRTP economic power transfer sensitivity studies will identify congestion and required improvements only inside the SCRTP footprint

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Previous Economic Planning Studies

Year	Source	Sink	Study Year	Transfer
2010	SCE&G	CPLE	2015 Summer	500 MW
2010	SCE&G	Duke	2015 Summer	500 MW
2010	SCE&G	CPLE	2020 Summer	500 MW
2010	SCE&G	Duke	2020 Summer	500 MW
2010	SCE&G	Southern	2020 Summer	500 MW
2011	SCE&G	CPLE	2022 Summer	200 MW
2011	Santee Cooper	CPLE	2015 Summer	500 MW
2011	Santee Cooper	Southern	2015 Summer	500 MW
2011	Santee Cooper	Duke	2015 Summer	500 MW
2011	SCRTP (Coast)	Southern/PJM	2020 Summer	1000 MW (500 Each)
2012	Santee Cooper	Georgia Transmission Company	2017 Summer	100 MW
2012	SCE&G	Progress Energy Carolinas	2017 Summer	200 MW
2012	SCE&G	Southern	2017 Summer	200 MW
2012	SCE&G	Progress Energy Carolinas	2022 Summer	200 MW

Previous Economic Planning Studies

Year	Source	Sink	Study Year	Transfer
2012	SCRTP (Coast)	Southern/PJM	2022 Summer	1000 MW (500 Each)
2013	Southern	Santee Cooper	2014 Summer	500 MW
2013	Southern	Santee Cooper	2014 Winter	500 MW
2013	SCE&G	Progress Energy Carolinas	2018 Summer	200 MW
2013	SCE&G	Southern	2018 Summer	200 MW
2013	SCE&G	Southern	2023 Summer	200 MW
2013*	NC/SC Onshore Collection Site	Duke/Progress	2024 (S, H, W)	600MW/400 MW
2013*	NC/SC Onshore Collection Site	SCE&G/Santee Cooper	2024 (S, H, W)	500MW/500 MW
2013*	NC/SC Onshore Collection Site	Duke/Progress	2024 (S, H, W)	940MW/620 MW
2013*	NC/SC Onshore Collection Site	SCE&G/Santee Cooper	2024 (S, H, W)	220MW/220 MW
2013*	NC/SC Onshore Collection Site	Duke/Progress	2024 (S, H, W)	940MW/620 MW
2013*	NC/SC Onshore Collection Site	SCE&G/Santee Cooper	2024 (S, H, W)	220MW/220 MW

***2013 CTCA 2024 Summer/Shoulder/Winter Carolinas Wind Study**

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Previous Economic Planning Studies

Year	Source	Sink	Study Year	Transfer
2014	Duke Energy Carolinas (DEC)	Santee Cooper	2015 Winter	250 MW
2014	Offshore Wind Injection (115 kV)	Santee Cooper/SCE&G	2019 Winter	300 MW
2014	Southern Company	SCE&G	2015 Summer	300 MW
2014	SCE&G	Duke	2019 Summer	200 MW
2015	Southern Company	SCE&G	2016 Winter	300 MW
2015	Southern Company	SCE&G	2018 Summer	300 MW
2015	Duke Energy Carolinas (DEC)	SCE&G	2018 Summer	200 MW
2015	Southern Company	SCE&G	2018 Winter	350 MW
2015	Duke Energy Carolinas (DEC)	SCE&G	2018 Winter	250 MW

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Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #1:	
Source Area:	Southern Company (SOCO)
Sink Area:	Santee Cooper
Transfer (MW):	500 MW
Study Year:	2019
Study Conditions:	Summer
Other Information:	N/A
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

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Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #2:	
Source Area:	Southern Company (SOCO)
Sink Area:	Santee Cooper
Transfer (MW):	500 MW
Study Year:	2019
Study Conditions:	Winter
Other Information:	N/A
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #3:	
Source Area:	Santee Cooper
Sink Area:	Georgia Transmission Corporation (GTC)
Transfer (MW):	200 MW
Study Year:	2019
Study Conditions:	Summer
Other Information:	N/A
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #4:	
Source Area:	Santee Cooper
Sink Area:	Georgia Transmission Corporation (GTC)
Transfer (MW):	200 MW
Study Year:	2019
Study Conditions:	Winter
Other Information:	N/A
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #5:	
Source Area:	Santee Cooper
Sink Area:	CPLE (Duke Energy Progress)
Transfer (MW):	300 MW
Study Year:	2019
Study Conditions:	Winter
Other Information:	N/A
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #6:	
Source Area:	Southern Company (SOCO)
Sink Area:	SCE&G/Santee Cooper
Transfer (MW):	200 MW
Study Year:	2020
Study Conditions:	Summer
Other Information:	Interface Share (100 MW SCE&G/100 MW SC)
Benefits of Study and Other Comments:	Analyze the ability to transfer some output from Plains & Eastern HVDC project through Southern Company area to SCRTP footprint. Goal is to determine the transfer limit that triggers significant facility upgrades.

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #7:	
Source Area:	Southern Company (SOCO)
Sink Area:	SCE&G/Santee Cooper
Transfer (MW):	350 MW
Study Year:	2020
Study Conditions:	Summer
Other Information:	Interface Share (175 MW SCE&G/175 MW SC)
Benefits of Study and Other Comments:	Analyze the ability to transfer some output from Plains & Eastern HVDC project through Southern Company area to SCRTP footprint. Goal is to determine the transfer limit that triggers significant facility upgrades.

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Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #8:	
Source Area:	Southern Company (SOCO)
Sink Area:	SCE&G/Santee Cooper
Transfer (MW):	500 MW
Study Year:	2020
Study Conditions:	Summer
Other Information:	Interface Share (250 MW SCE&G/250 MW SC)
Benefits of Study and Other Comments:	Analyze the ability to transfer some output from Plains & Eastern HVDC project through Southern Company area to SCRTP footprint. Goal is to determine the transfer limit that triggers significant facility upgrades.

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #n:	
Source Area:	
Sink Area:	
Transfer (MW):	
Study Year:	
Study Conditions:	
Other Information:	
Benefits of Study and Other Comments:	

2016 Economic Planning Proposed Scenarios

#	Source	Sink	Amount (MW)	Year	Study Conditions	Requestor
1	SOCO	SC	500	2019	Summer	Santee Cooper PM
2	SOCO	SC	500	2019	Winter	Santee Cooper PM
3	SC	GTC	200	2019	Summer	Santee Cooper PM
4	SC	GTC	200	2019	Winter	Santee Cooper PM
5	SC	CPLE (DEP)	300	2019	Winter	Santee Cooper PM
6	SOCO	SC/SCE&G	200	2020	Summer	Clean Line Energy
7	SOCO	SC/SCE&G	350	2020	Summer	Clean Line Energy
8	SOCO	SC/SCE&G	500	2020	Summer	Clean Line Energy

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Transmission Planning Base Cases
2015 MMWG and SERC Series

2016 Light Load
2016 Summer Peak
2016 Fall Peak
2016 Winter Peak
2017 Spring Peak
2017 Light Load
2017 Summer Peak
2017 Winter Peak
2020 Summer Peak
2021 Light Load
2021 Shoulder
2021 Summer Peak
2021 Winter Peak
2026 Summer Peak
2026 Winter Peak

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2016 Economic Planning Scenarios

Selected by Stakeholders During the March 16, 2016 Meeting

#	Source	Sink	Amount (MW)	Year	Study Conditions	Requestor
2	SOCO	SC	500	2017	Winter	Santee Cooper PM
3	SC	GTC	200	2017	Summer	Santee Cooper PM
4	SC	GTC	200	2017	Winter	Santee Cooper PM
5	SC	CPLE (DEP)	300	2017	Winter	Santee Cooper PM
8	SOCO	SC/SCE&G	500	2020	Summer	Clean Line Energy

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SCRTP Regional Planning and Public Policy

Clay Young

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SCRTP Regional and Public Policy Planning

- Biennial Process (currently in year 2)
- Restarts in 4th quarter of even years
- Regional Projects – Proposed, Evaluation and Selection
  - Must be submitted by January 15 of odd years
  - None received in current Regional Planning cycle
  - *This meeting* - Qualified Developers may request Regional Cost Allocation for Regional Projects that have met the Initial Screening Criteria
- Public Policy – Proposed, Evaluation and Selection
  - Must be submitted by January 15 of odd years
  - None received in current Public Policy Planning cycle
  - *This Meeting* - Local solutions for Transmission Needs driven by Public Policy Requirements are announced

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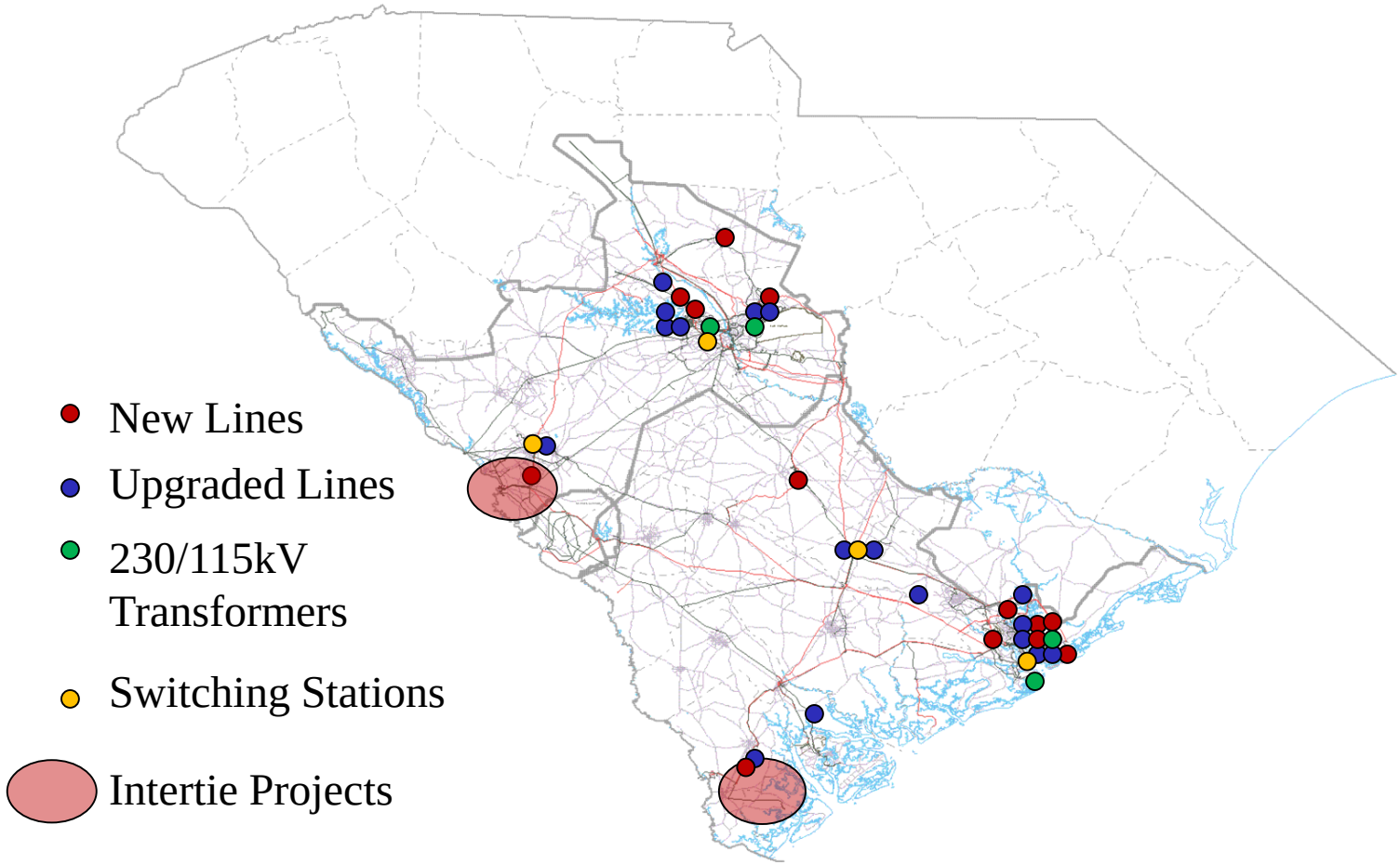
Multi-Party Studies

Wade Richards

- The projects described in these presentations represent the current transmission plans within the SCRTP footprint.
- The expansion plan is continuously reviewed and may change due to changes in key data and assumptions.
- This presentation does not represent a commitment to build.

SCE&G Planned Intertie Projects



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SOCO-SCE&G Interface Upgrade

Studies indicate high flows beginning in 2019 as a result of new nuclear installations at SOCO's Vogtle Plant

The interface affected the most by these new nuclear installations is the existing Vogtle – SRS 230 kV SOCO (Southern Company) – SCE&G Tieline

Plan already in place: Urquhart – Graniteville 115 kV Rebuild SPDC 230 kV and 115 kV. The scope of this project can be modified to reduce the impact of these new nuclear installations

SOCO-SCE&G Interface Upgrade

Currently exploring and discussing options with SOCO.

The most feasible solution includes the following.

- Two new tie lines (one 230 kV, one 115 kV) with SOCO, from their South Augusta 230/115 kV substation to Graniteville. Lines would utilize the proposed path of the Urquhart – Graniteville 115 kV rebuilt line and use existing R/W from SCE&G's Urquhart Generation Plant to South Augusta (SOCO)
- 1% series reactor (inductor) on Vogtle – SRS 230 kV Tieline

Completion: May 31, 2019

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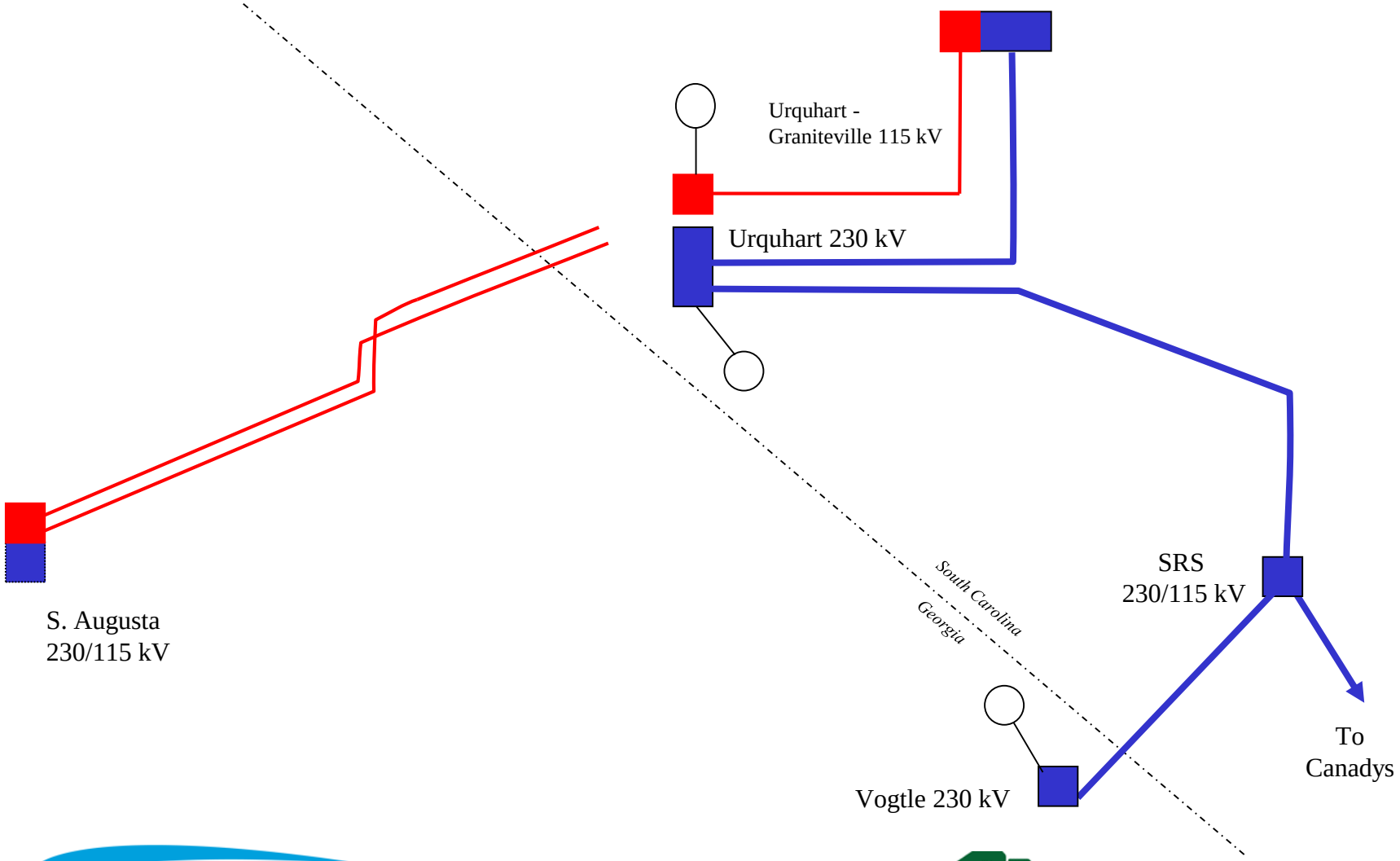
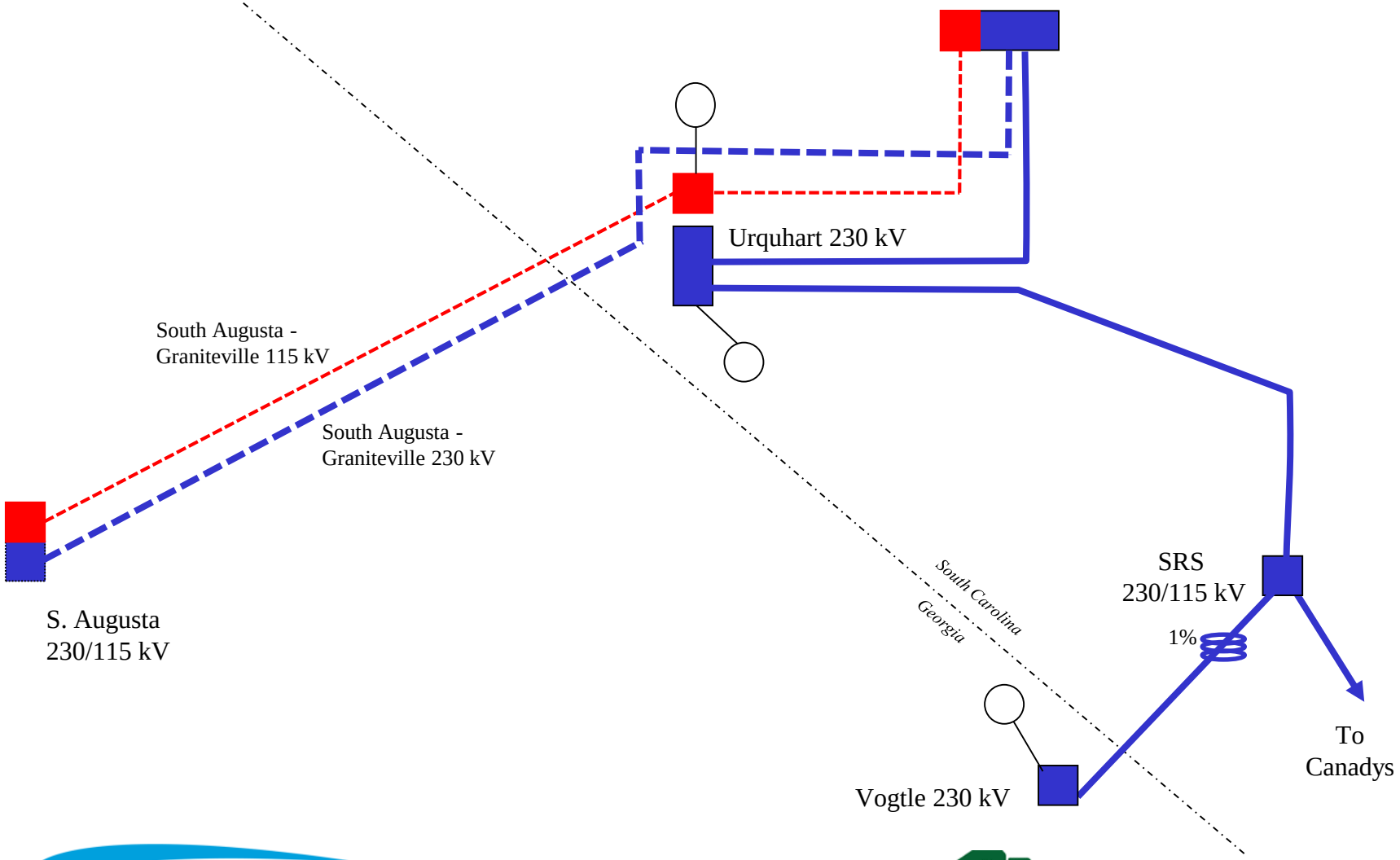
Augusta & Vogtle - SRS Area Existing Transmission



Augusta & Vogtle - SRS Area Proposed Transmission



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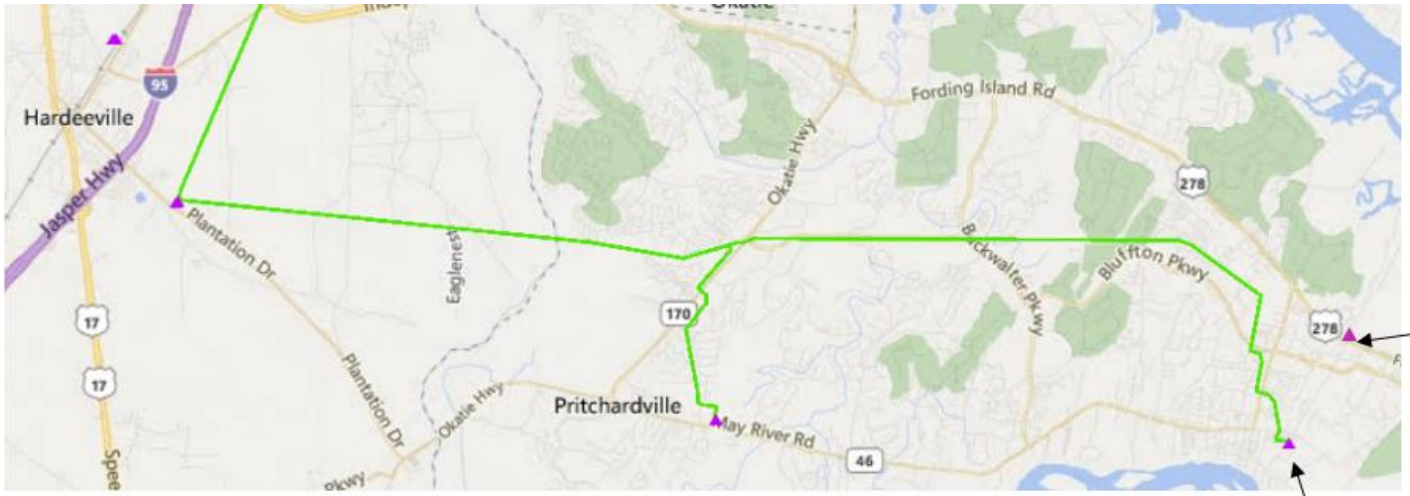
SCE&G-SCPSA Interface Addition

~80 MW of SCE&G load fed radially in the Bluffton area

New N.O. (normally open) tieline from SCE&G Bluffton to SCPSA

- Route to be studied through a public workshop
- Completion: Circa 2018



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Questions?

Next SCRTP Meeting

- Review of near-term Major Transmission Expansion Plans (Annual SCE&G Proforma Rate Filing at FERC)
- Review results of recent Reliability Planning studies (NERC TPL requirements) and potential plan changes
- SCRTP Email Distribution List will be notified
- Register online

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