

South Carolina Regional Transmission Planning

Stakeholder Meeting

Web Conference

April 18, 2017 2:00 – 3:30 PM

Purpose and Goals for Today's Meeting

- Identify Economic Power Transfer Sensitivities to be Studied
- Update on Regional Planning Process
- Discussion on Multi-Party Studies

Economic Transmission Planning Power Transfer Sensitivities

Jeff Neal

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

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

Economic Transmission Planning Sensitivity Selection

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

Current Voting Stakeholder Group Members

- Cooperatives
 - John Boyt, Central Electric
 - Vacant
- Municipals
 - Alan Loveless, City of Georgetown
 - Vacant
- Network and PTP Transmission Customers
 - J. W. Smith, Southeastern Power Administration
 - Vacant

Current Voting Stakeholder Group Members

- Generation Owners / Developers
 - Tim Daniels, Hudson Energy Development LLC
 - Vacant
- Marketers
 - Eddie Folsom, SCE&G Power Marketing
 - Glenda Horne, Santee Cooper Power Marketing
- Transmission Owners
 - Bob Pierce, Duke Energy-Carolinas
 - Kerry Sibley, Georgia Transmission

Current Voting Stakeholder Group Members

- ISO / RTO
 Vacant
 Vacant

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**

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

Previous Economic Planning Studies

Year	Source	Sink	Study Year	Transfer
2016	Southern Company	Santee Cooper	2017 Winter	500 MW
2016	Santee Cooper	GTC	2017 Summer	200 MW
2016	Santee Cooper	GTC	2017 Winter	200 MW
2016	Santee Cooper	CPL (DEP)	2017 Winter	300 MW
2016	Southern Company	Santee Cooper/SCE&G	2020 Summer	500 MW

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #1:	
Source Area:	Santee Cooper
Sink Area:	DEC (Duke)
Transfer (MW):	300 MW
Study Year:	2020
Study Conditions:	Summer
Other Information:	Gen to Load
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #2:	
Source Area:	Santee Cooper
Sink Area:	DEP (CPL&E)
Transfer (MW):	300 MW
Study Year:	2020
Study Conditions:	Summer
Other Information:	Gen to Load
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #3:	
Source Area:	Southern Company (SOCO)
Sink Area:	Santee Cooper
Transfer (MW):	500 MW
Study Year:	2021
Study Conditions:	Summer
Other Information:	Gen to Load
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #4:	
Source Area:	SOCO
Sink Area:	SCE&G
Transfer (MW):	300
Study Year:	2020
Study Conditions:	Summer
Other Information:	
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #5:	
Source Area:	DEC
Sink Area:	SCE&G
Transfer (MW):	300
Study Year:	2020
Study Conditions:	Summer
Other Information:	
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #6:	
Source Area:	SOCO
Sink Area:	SCE&G
Transfer (MW):	300
Study Year:	2021
Study Conditions:	Winter
Other Information:	
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #7:	
Source Area:	SOCO
Sink Area:	SCE&G
Transfer (MW):	300
Study Year:	2021
Study Conditions:	Summer
Other Information:	
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #8:	
Source Area:	DEC
Sink Area:	SCE&G
Transfer (MW):	300
Study Year:	2021
Study Conditions:	Summer
Other Information:	
Benefits of Study and Other Comments:	Market Transfer Analysis Limitations

2016 Economic Planning Proposed Scenarios

#	Source	Sink	Amount (MW)	Year	Study Conditions	Requestor
1	SC	DEC	300	2020	Summer	SCPSA PM
2	SC	DEP	300	2020	Summer	SCPSA PM
3	SOCO	SC	500	2021	Summer	SCPSA PM
4	SOCO	SCE&G	300	2020	Summer	SCE&G PM
5	DEC	SCE&G	300	2020	Summer	SCE&G PM
6	SOCO	SCE&G	300	2021	Winter	SCE&G PM
7	SOCO	SCE&G	300	2021	Summer	SCE&G PM
8	DEC	SCE&G	300	2021	Summer	SCE&G PM

Transmission Planning Base Cases

2017 MMWG and SERC Series

2017 Light Load

2017 Spring Peak

2017 Summer Peak

2017 Fall Peak

2017/18 Winter Peak

2018 Light Load

2018 Spring Peak

2018 Summer Peak

2018/19 Winter Peak

2021 Light Load

2021 Summer Shoulder

2021 Summer Peak

2022 Summer Peak

2021/22 Winter Peak

2026 Summer Peak

2026/27 Winter Peak

2017 Economic Planning Scenarios

Selected by Stakeholders During the April 18, 2017 Meeting

#		Source	Sink	Amount (MW)	Year	Study Conditions
1	SC	DEC	300	2020	Summer	SCPSA PM
2	SC	DEP	300	2020	Summer	SCPSA PM
3	SOCO	SCE&G	300	2020	Summer	SCE&G PM
4	SOCO	SCE&G	300	2021	Winter	SCE&G PM
5	DEC	SCE&G	300	2021	Summer	SCE&G PM

SCRTP Regional and Inter-regional Processes

Clay Young

SCRTP Regional and Public Policy Planning

- Biennial Process (currently in year 1, Meeting #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

During this meeting:

- Stakeholders may submit local solutions to identified Transmission Needs driven by Public Policy Requirements.
- Proposed Regional Projects may be submitted to be evaluated for inclusion in the Regional Transmission Plan.
- The Transmission Providers and Stakeholders may discuss the proposed Regional Projects.

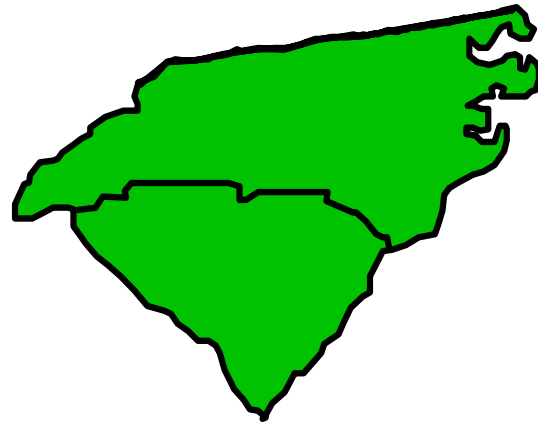
Reliability Assessment and Multi-Party Studies

Weijian Cong

Multi-Party Assessments

- **Carolina Transmission Coordination Arrangement (CTCA) Assessments**
- **Southeastern Electric Reliability Corporation (SERC) Assessments**

CTCA Future Year Assessments



CTCA Purpose

- **Collection of agreements developed concurrently by the Principals, Planning Representatives, and Operating Representatives of multiple two-party Interchange Agreements**
- **Establishes a forum for coordinating certain transmission planning assessment and operating activities among the specific parties associated with the CTCA**

CTCA Power Flow Study Group

- Duke Energy Carolinas (“Duke”)
- Duke Energy Progress (“Progress”)
- South Carolina Electric & Gas (“SCEG”)
- South Carolina Public Service Authority (“SCPSA”)

CTCA Studies

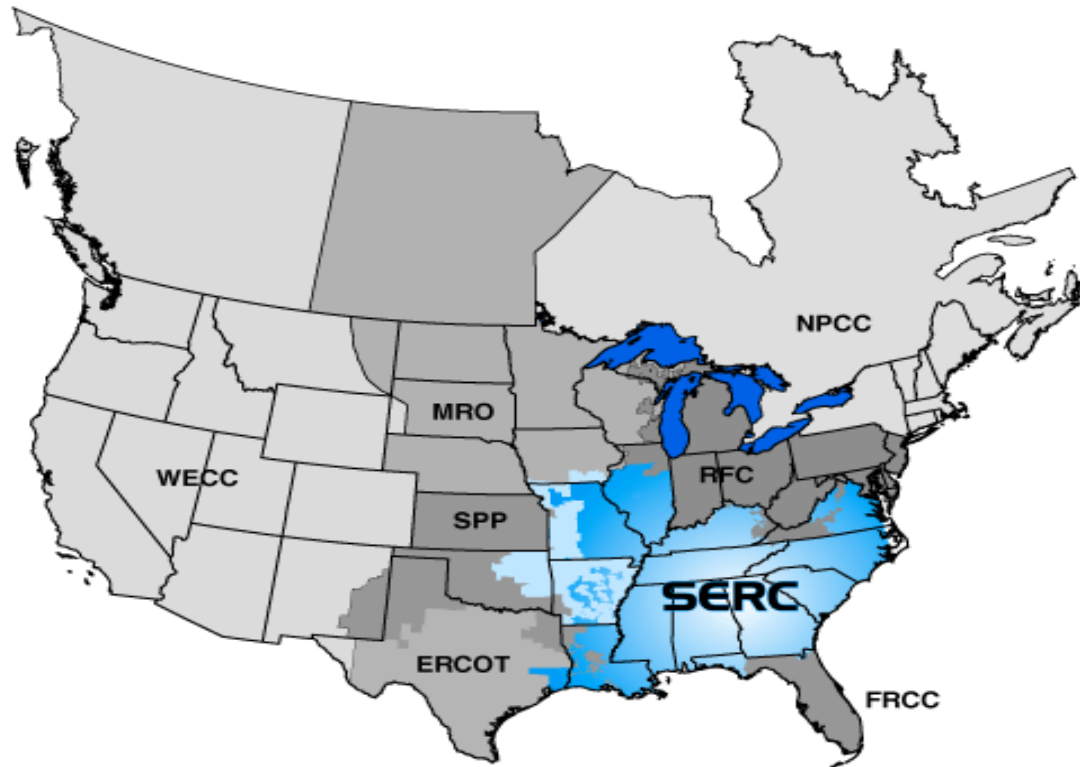
- Assess the existing transmission expansion plans of Duke, Progress, SCEG, and SCPSA to ensure that the plans are simultaneously feasible.
- Identify any potential joint solutions that are more efficient or cost-effective than individual company plans, which also improve the simultaneous feasibility of the Participant companies' transmission expansion plans.
- The Power Flow Study Group ("PFSG") , performs the technical analysis outlined in this study scope under the guidance and direction of the Planning Committee ("PC").

CTCA Studies 2017 PFSG Study

- TBD during meeting/web conference
- Report completion usually in December

SERC LTSG Assessments

SERC Future Year Assessments Long Term Study Group (LTSG)



SERC LTSG Study Purpose

- Analyze the performance of the members' transmission systems and identify limits to power transfers occurring non-simultaneously among the SERC members.
- Evaluate the performance of bulk power supply facilities under both normal and contingency conditions for future years.
- Focus on the evaluation of sub-regional and company-to-company transfer capability.

SERC Long Term Study Group 2017 Work Schedule

- LTSG Data Bank Update on May 23-24
- Power flow cases to be finalized by June 13, 2017
- Study Case: 2022 Summer Peak Load
- Study to be completed by LTSG June thru October
- Final Report in December

Questions?

Next SCRTP Meeting

- Discuss initial study results (for Stakeholder input) of RTP studies (NERC TPL and internal criteria)
- Discuss any revisions to the Local Transmission Plan based on the RTP studies.
- Discuss major transmission projects focusing on the next 5 years
- Review and discuss Multi-Party Assessment Studies
- SCRTP Email Distribution List will be notified
- Register online

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