

# South Carolina Regional Transmission Planning

## Stakeholder Meeting

Hilton Garden Inn Charleston Airport

Charleston, SC

February 10, 2014

## Purpose and Goals of Today's Meeting

- FERC Order 1000 Update
- Review Key Data and Assumptions for Next Planning Cycle
- Elect Stakeholder Group Voting Members
- Stakeholders Select Economic Transfer Sensitivities
- Review and Discuss Assessment and Planning Studies
  - CTCA
  - ERAG
  - SERC
  - Other
- EIPC Stakeholder Group Activities

# FERC Order 1000 Transmission Planning and Cost Allocation

Clay Young

# FERC Order 1000

- Planning Requirements (Regional and Interregional)
  - Reliability
  - Economics
  - Public Policy
- Cost Allocation Requirements
- Non-incumbent Developer Requirements
- Compliance

# Order 1000 Update



- **Milestones - Regional**
  - July 21, 2011 FERC issued Order 1000
  - Oct. 11, 2012 SCE&G filed a revised Attachment K including proposed Order 1000 Regional Processes
  - April 18, 2013 FERC issued Order Accepting SCE&G filing but requiring additional revisions
  - Oct. 15, 2013 SCE&G filed a revised Attachment K including proposed additional revisions
  - FERC is reviewing

# Order 1000 Update



- Milestones - Interregional
  - July 10, 2013 SCE&G filed a revised Attachment K including proposed Order 1000 Interregional Processes
  - FERC is reviewing

# FERC Order 1000

## Stakeholder Input, Comments and Questions

**SCE&G**

# Transmission Planning Key Assumptions and Data

Phil Kleckley



# Modeling Assumptions and Data

## Dispersed Substation Load Forecast

- Summer/Winter Peak, Off-Peak and Seasonal Load Levels
- Resource Planning provides 10 Year system load forecasts
- Transmission Planning creates dispersed substation load forecasts

# Load Forecast Process

## Resource Planning Input

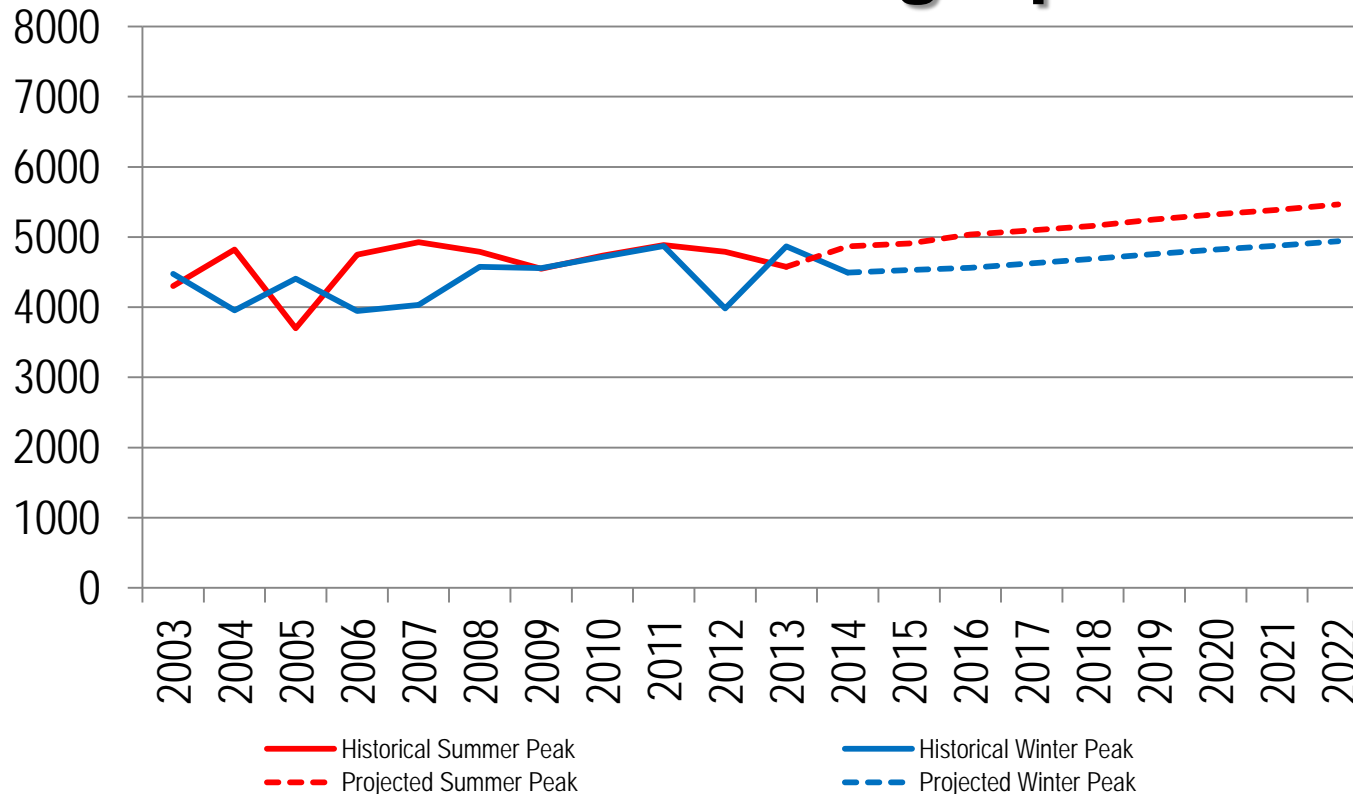
- Develop 10 year projected forecast based on:
  - 10 year historical load summer and winter loads
  - Load factors by customer class
  - Considers weather, personal income, population growth, economic conditions, load management, energy efficiency, etc
  - Applies regression analysis to historical data to develop models
  - Applies forecasted growth rates to develop future projections

# SCE&G 10 Year Load Forecast

	<u>Summer</u>		<u>Winter</u>
2013	4,574 MW	2012/2013	3,984 MW
2014	4,868 MW	2013/2014	4,866 MW
2015	4,909 MW	2014/2015	4,495 MW
2016	5,034 MW	2015/2016	4,530 MW
2017	5,096 MW	2016/2017	4,561 MW
2018	5,161 MW	2017/2018	4,625 MW
2019	5,248 MW	2018/2019	4,688 MW
2020	5,325 MW	2019/2020	4,759 MW
2021	5,388 MW	2020/2021	4,820 MW
2022	5,463 MW	2021/2022	4,874 MW

# Load Forecast Process

## Resource Planning Input



# Load Forecast Process

## Transmission Planning Input

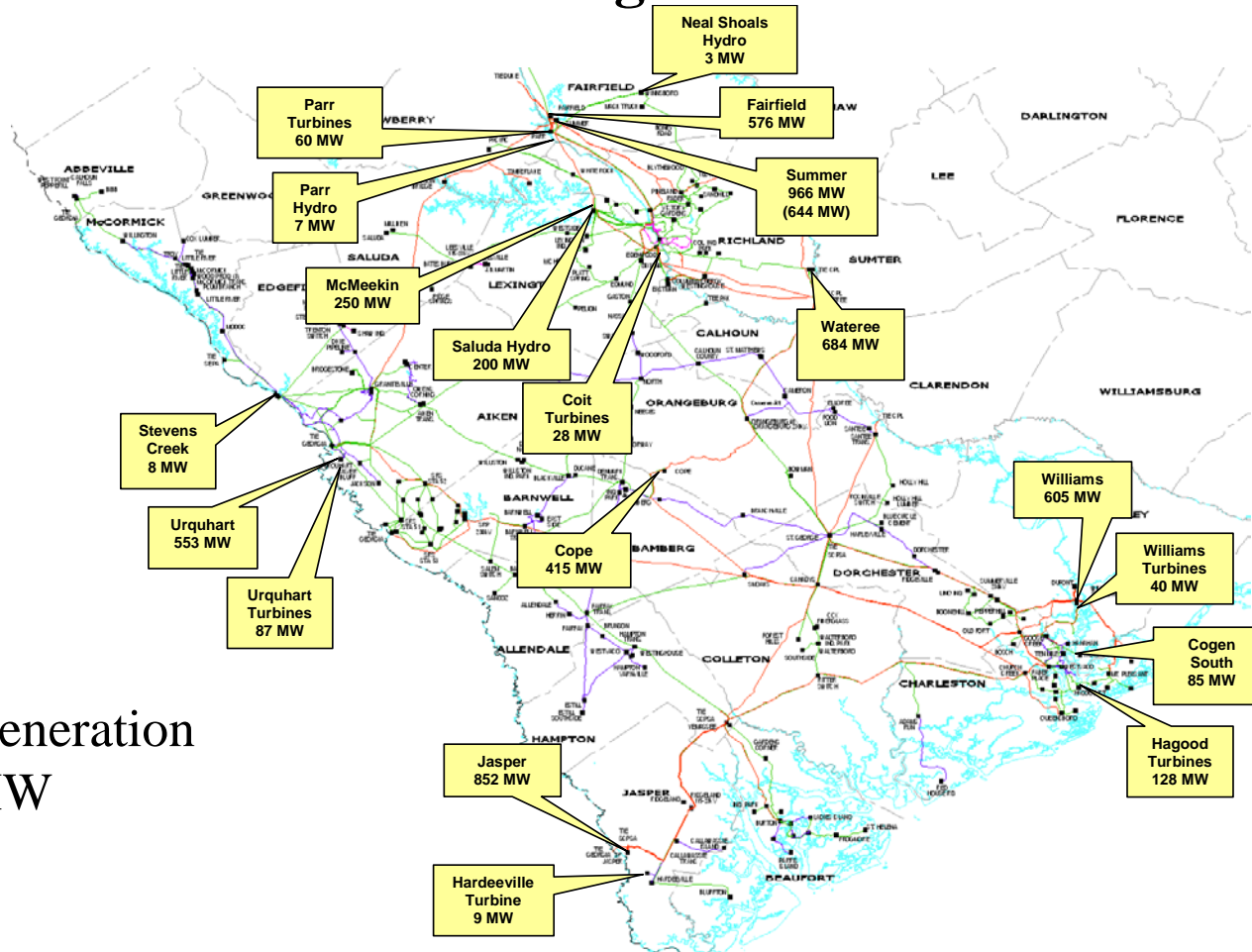
- Obtain summer and winter snapshot meter data from most recent seasons and adjust for load switching
- Develop 10 year projected forecast based on:
  - 10 year historical loading
  - Feedback from Distribution Planning, Local Managers, Large Industrial Group and Transmission Services Manager
- Wholesale loads are modeled as provided by the customer
- Dispersed forecasted load points are integrated into Corporate forecasted load

# Modeling Assumptions and Data

## Generation

- Annual generator ratings used
- Input from Generation Expansion Plan – Reductions/Additions
- Input from Generation Maintenance Schedule
- Generators dispatched economically
- Merchant Generators included, modeled at contracted output

## Existing Generation



Rated Generation  
5,234 MW

# Generation Plan

## Reductions

- 385 MW Coal 2013
- 345 MW Coal 2018



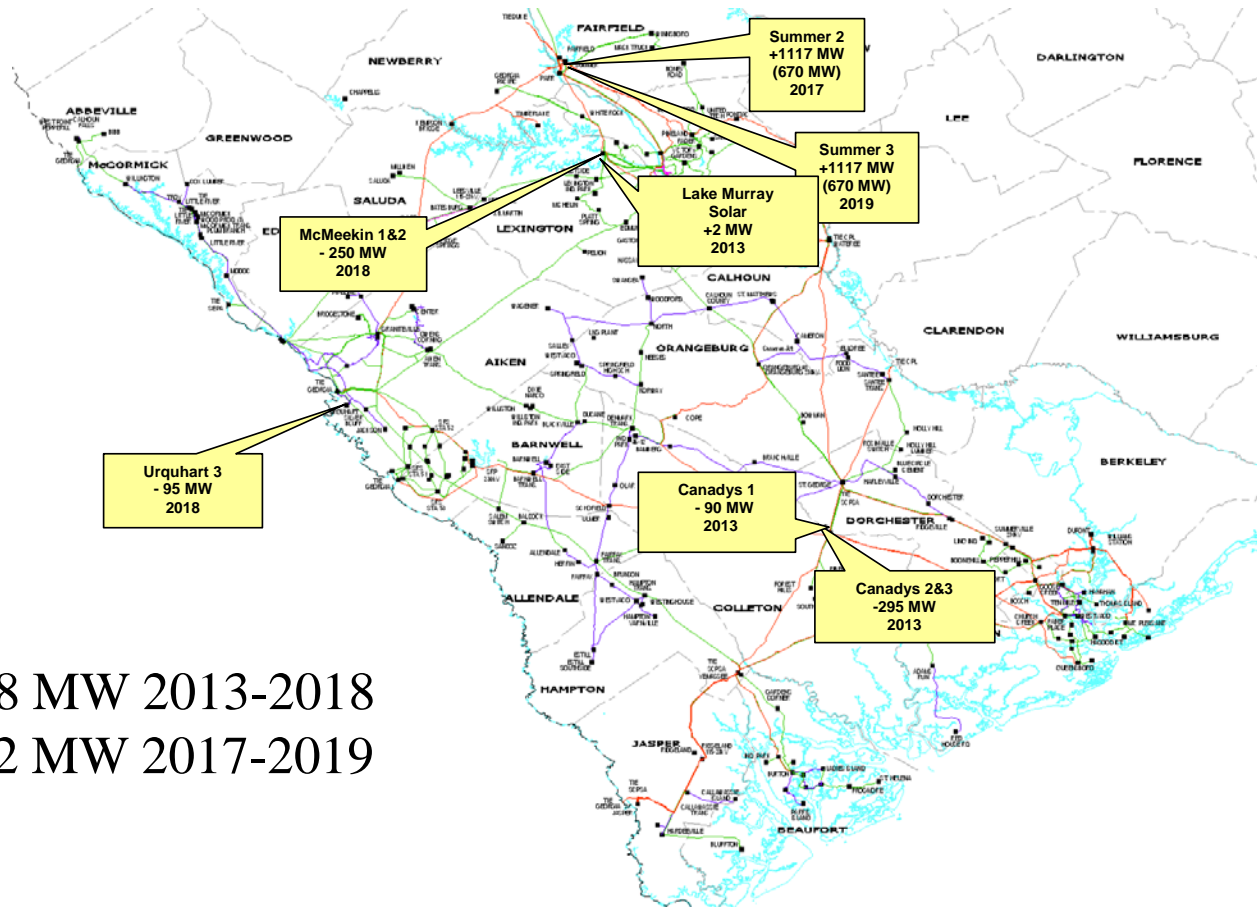
# Generation Plan

## Additions

- 2 MW solar farm near Lake Murray planned for 2014
- 10 MW solar farms (unsited) planned for 2015-2016)
- 1117 MW of SCE&G/Santee Cooper Base Load Nuclear Generation planned for 2018 (V. C. Summer)
- 1117 MW of SCE&G/Santee Cooper Base Load Nuclear Generation planned for 2019 (V. C. Summer)

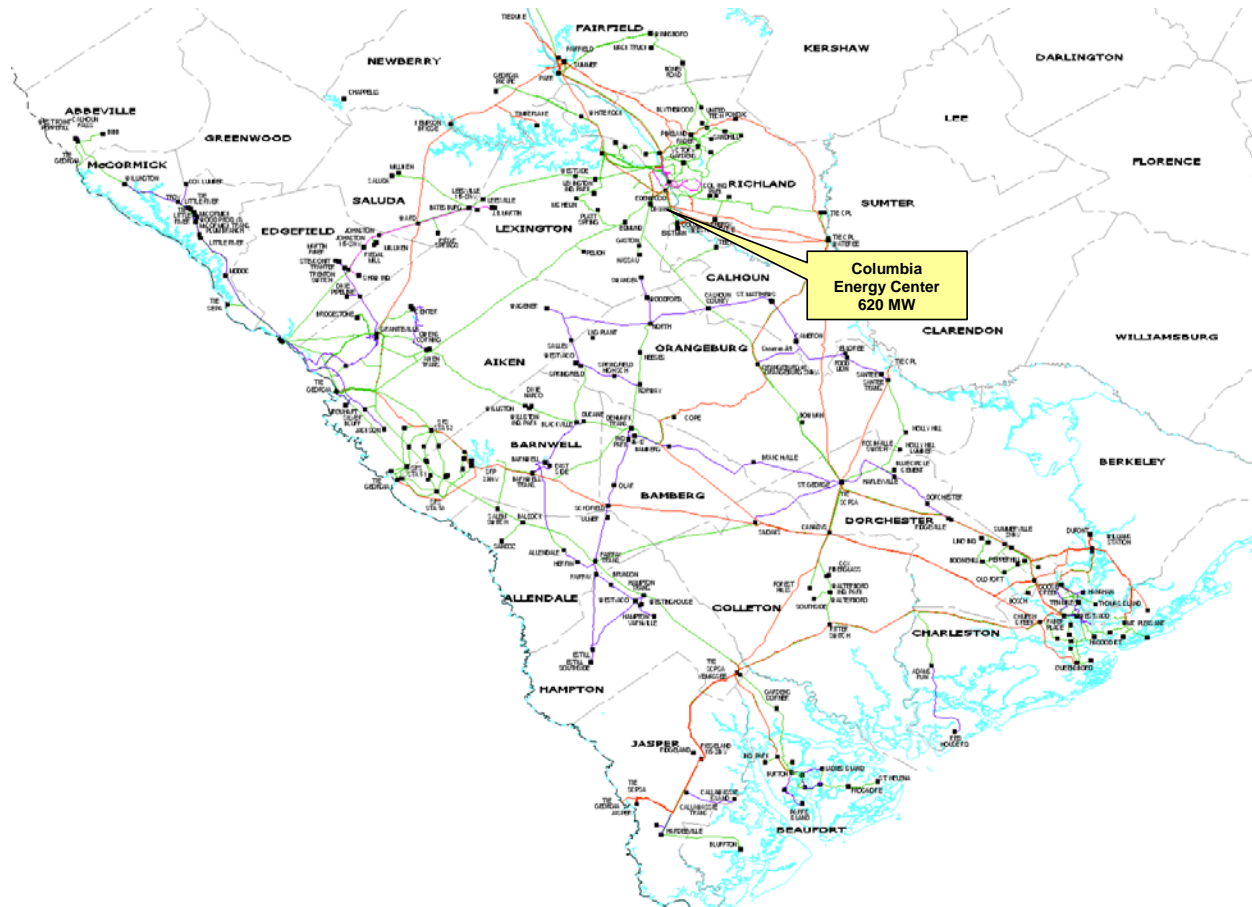


# Generation Changes



- 718 MW 2013-2018  
 + 1352 MW 2017-2019

## Merchant Generation



# Modeling Assumptions and Data

## Transmission Network

- Input from Transmission Plan
- Neighboring Transmission Systems Modeled

# Modeling Assumptions and Data

## Planned Transmission Facilities

7/23/2013

South Carolina Electric & Gas Planned Transmission Facilities	
Planned Project	Tentative Completion Date
Faber Place Replace Switch House	Mar-13
VCS1 add Back-to-Back Bus Tie Breakers Buses 1 and 2	Apr-13
VCS2 230 kV Switchyard Construct	Apr-13
Lake Murray 230/115 kV Sub Add 2nd Autobank	May-13
VCS2-Denny Terrace 230 kV Re-terminate	May-13
Eutawville 115 kV Line Construct	May-13
Charlotte St - Hagood 115 kV Line Construct	May-13
Edenwood - Columbia Industrial Park 115 kV Upgrade	May-13
Eastover - Wateree 115 kV Line Improve	May-13
Belvedere - Stevens Ck 115 kV Line Rebuild as Double Circuit	May-13
Callawassie Line Convert from 46 kV to 115 kV	Aug-13
VCS2 - Lake Murray 230 kV #2 Line Construct	Oct-13

# Modeling Assumptions and Data

## System Interchange

- Firm scheduled transfers included
- Coordinated with Neighbors

**Santee Cooper**

# **Transmission Planning Key Assumptions and Data**

**Rick Thornton**

## Components

- Demand Forecast
- Transmission Network
- Generation Resources
- Actual System Operations



## Demand Forecast

Load forecast is developed with contributions from:

- Santee Cooper (retail, industrial)
- Central Electric Power Cooperative, Inc. (retail, industrial)
- Cities of Bamberg and Georgetown (municipal)

# Santee Cooper 10 Year Load Forecast

	<u>Summer</u>		<u>Winter</u>
2013	4,908 MW	2012/2013	5,029 MW
2014	5,264 MW	2013/2014	5,673 MW
2015	5,170 MW	2014/2015	5,759 MW
2016	5,112 MW	2015/2016	5,690 MW
2017	5,040 MW	2016/2017	5,614 MW
2018	4,965 MW	2017/2018	5,543 MW
2019	4,937 MW	2018/2019	5,526 MW
2020	4,980 MW	2019/2020	5,582 MW
2021	5,041 MW	2020/2021	5,640 MW
2022	5,109 MW	2021/2022	5,716 MW

## Transmission Network

Models include:

- Existing transmission system as well as committed Santee Cooper additions (uncommitted facilities are subject to change in scope or date).
- Confirmed firm PTP transmission service reservations
- Neighboring transmission system representations.
- All facilities assumed to be available for service.
- Normal operating status (in-service or OOS) of facilities is represented.

## Transmission Network

- Uniform rating methodology is applied to transmission facilities.
- Base case models are updated annually.
- Study models may be updated prior to any study effort.

# Planned Transmission Facilities

- Winnsboro 230-69 kV Substation 05/01/2014
- VC Summer-Winnsboro 230 kV Line 05/01/2014
- VC Summer-Pomaria 230 kV #2 Line 06/01/2014
- Bucksville 230-115 kV Substation 06/01/2014
- Richburg 230-69 kV Substation 03/31/2015
- Winnsboro-Richburg 230 kV Line 03/31/2015
- Winyah - Bucksville 230 kV Line 06/01/2015
- Purrysburg 230-115kV Substation 06/01/2015
- Purrysburg-McIntosh #2 230 kV Line 06/01/2015
- Richburg-Flat Creek 230 kV Line 05/01/2016
- Bucksville-Garden City 115kV Line 06/01/2016
- Sandy Run 230-115 kV Substation 05/01/2017
- Pomaria-Orangeburg 230 kV Line 05/01/2017

## Generation Resources

### Existing Connected Generation

Cross 1- 4

J.S. Rainey Power Block 1

Winyah 1-4

J.S. Rainey 2A, 2B

Hilton Head Turbines 1- 3

J.S. Rainey 3-5

Myrtle Beach Turbines 1-5

Spillway (Hydro)

Jefferies 1, 2, 3, 4, 6 (Hydro)

St. Stephen 1-3 (Hydro)

Jefferies 1, 2 (Steam)

V.C. Summer #1

# Generation Resources

## Projected Capacity in Models

V. C. Summer #2 (04/2018)

V. C. Summer #3 (04/2019)

# Stakeholder Comments and Input

## Planning Key Assumptions and Data



# SCRTP Stakeholder Group Voting Member Elections

Tom Abrams

## Stakeholder Group Sectors

- Transmission Owners/Operators
- Transmission Service Customers
  - PTP and Network
- Cooperatives
- Municipals
- Marketers
- Generation Owners/Developers
- ISO/RTO
- State Regulatory Representatives

# Key Features of Stakeholder Group

- Stakeholder participants determine sector affiliation
- Each sector will have two voting members
- One vote per member
- Majority Rule
- Voting members determined by sector members annually at the Fall meeting
- Each company will have one voting member in the stakeholder group
- Stakeholder meetings are open to non-stakeholder members
- Stakeholder group will identify and request economic transfers to be studied (if more than five requested, stakeholders will vote to select the top five)
- Stakeholder group can change the number and timing of meetings with agreement by SCPSA and SCE&G

## 2013 Voting Stakeholder Group Members

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

## 2013 Voting Stakeholder Group Members

- Generation Owners / Developers
  - Victor Shaw, Calpine, Columbia Energy Center
  - 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

## 2013 Voting Stakeholder Group Members

- ISO / RTO
  - Vacant
  - Vacant

# Annual Election of SCRTP Stakeholder Group

## Stakeholder Breakout Sessions to Select Voting Representatives

# Economic Transmission Planning Sensitivities

Tom Abrams



# Economic Transmission Planning Principle

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 Principle

(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 (Sensitivity #1 was completed as the NC/SC Wind Study conducted last year)
- 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

# Transmission Planning Base Cases

## 2013 MMWG Series

2015 Spring	SERC-ERAG-MMWG
2015 Summer	SERC-ERAG-MMWG
2015/16 Winter	SERC-ERAG-MMWG
2019 Spring Light Load	SERC-ERAG-MMWG
2019 Summer	SERC-ERAG-MMWG
2019/20 Winter	SERC-ERAG-MMWG
2024 Summer	SERC-ERAG-MMWG

# Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #1:	
Source Area:	Duke
Sink Area:	Santee Cooper
Transfer (MW):	250 MW
Study Year:	2015
Study Conditions:	Load to load, <b>Season?</b>
Other Information:	
Benefits of Study and Other Comments:	Market review of interface capabilities

# Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #2	
Source Area:	Santee Cooper
Sink Area:	Duke
Transfer (MW):	250 MW
Study Year:	2016
Study Conditions:	Increased Gen to <b>Increased Load, Season?</b>
Other Information:	
Benefits of Study and Other Comments:	Market review of interface capabilities

# Economic Transmission Planning Sensitivity Selection

<b>Economic Sensitivity #3</b>	
<b>Source Area:</b>	Coastal – North Myrtle Beach
<b>Sink Area:</b>	Santee Cooper 1/3, SCE&G 1/3 and Duke 1/3
<b>Transfer (MW):</b>	500 MW
<b>Study Year:</b>	2019
<b>Study Conditions:</b>	Summer Peak
<b>Other Information:</b>	
<b>Benefits of Study and Other Comments:</b>	Economic development project to analyze the impact of an offshore wind project coming ashore and injecting into North Myrtle Beach.



# Economic Transmission Planning Sensitivity Selection

<b>Economic Sensitivity #4</b>	
<b>Source Area:</b>	Coastal – North Myrtle Beach
<b>Sink Area:</b>	Santee Cooper 1/3, SCE&G 1/3 and Duke 1/3
<b>Transfer (MW):</b>	400 MW
<b>Study Year:</b>	2019
<b>Study Conditions:</b>	Summer Peak
<b>Other Information:</b>	
<b>Benefits of Study and Other Comments:</b>	Economic development project to analyze the impact of an offshore wind project coming ashore and injecting into North Myrtle Beach.

# Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #5	
Source Area:	Coastal – North Myrtle Beach
Sink Area:	Santee Cooper 1/3, SCE&G 1/3 and Duke 1/3
Transfer (MW):	300 MW
Study Year:	2019
Study Conditions:	Summer Peak
Other Information:	
Benefits of Study and Other Comments:	Economic development project to analyze the impact of an offshore wind project coming ashore and injecting into North Myrtle Beach.

# Economic Transmission Planning Sensitivity Selection

<b>Economic Sensitivity #6</b>	
<b>Source Area:</b>	Coastal – North Myrtle Beach
<b>Sink Area:</b>	Santee Cooper 1/3, SCE&G 1/3 and Duke 1/3
<b>Transfer (MW):</b>	200 MW
<b>Study Year:</b>	2019
<b>Study Conditions:</b>	Summer Peak
<b>Other Information:</b>	
<b>Benefits of Study and Other Comments:</b>	Economic development project to analyze the impact of an offshore wind project coming ashore and injecting into North Myrtle Beach.

# Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #7:	
Source Area:	Cherry Grove 115KV Sub-Station
Sink Area:	Santee Cooper 1/2, SCE&G 1/2
Transfer (MW):	200 MW
Study Year:	2020
Study Conditions:	Summer Peak – Generation to Generation
Other Information:	
Benefits of Study and Other Comments:	Determine the max increase of energy that the N. Myrtle Beach 115KV system can handle and what the initial costs will be for upgrades. This is for future marketing opportunities.

# Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #8:	
Source Area:	SOCO
Sink Area:	SCE&G
Transfer (MW):	300 MW
Study Year:	2015
Study Conditions:	Summer Peak
Other Information:	
Benefits of Study and Other Comments:	Will provide analysis of flows between SCE&G and adjacent systems for future period based on the most current models and assumptions

# Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #9:	
Source Area:	SOCO
Sink Area:	SCE&G
Transfer (MW):	300 MW
Study Year:	2015/16
Study Conditions:	Winter
Other Information:	
Benefits of Study and Other Comments:	Will provide analysis of flows between SCE&G and adjacent systems for future period based on the most current models and assumptions

# Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #10:	
Source Area:	SCE&G
Sink Area:	SOCO
Transfer (MW):	200 MW
Study Year:	2019
Study Conditions:	Summer Peak
Other Information:	
Benefits of Study and Other Comments:	Will provide analysis of flows between SCE&G and adjacent systems for future period based on the most current models and assumptions

# Economic Transmission Planning Sensitivity Selection

Economic Sensitivity #11:	
Source Area:	SCE&G
Sink Area:	Duke
Transfer (MW):	200 MW
Study Year:	2019
Study Conditions:	Summer Peak
Other Information:	
Benefits of Study and Other Comments:	Will provide analysis of flows between SCE&G and adjacent systems for future period based on the most current models and assumptions



# 2014 Economic Planning Scenarios

#	Source	Sink	Amount (MW)	Year	Study Conditions
1	Santee Cooper	Duke	250	2015	Summer Peak
2	Duke	Santee Cooper	250	2016	Summer Peak
3	Coastal - NMB	Santee Cooper /SCE&G/Duke	500	2019	Summer Peak
4	Coastal - NMB	Santee Cooper /SCE&G/Duke	400	2019	Summer Peak
5	Coastal - NMB	Santee Cooper /SCE&G/Duke	300	2019	Summer Peak
6	Coastal - NMB	Santee Cooper /SCE&G/Duke	200	2019	Summer Peak
7	Cherry Grove 115 kV Substation	Santee Cooper /SCE&G	200	2020	Summer Peak

# 2014 Economic Planning Scenarios

#	Source	Sink	Amount (MW)	Year	Study Conditions
8	SOCO	SCE&G	300	2015	Summer Peak
9	SOCO	SCE&G	300	2015/16	Winter Peak
10	SCE&G	SOCO	200	2019	Summer Peak
11	SCE&G	Duke	200	2019	Summer Peak

# 2014 Economic Planning Scenarios

*Selected by Stakeholders During the February 10, 2014 Meeting*

#	Source	Sink	Amount (MW)	Year	Study Conditions
2	Duke	Santee Cooper	250	2015	Winter Peak
7	Cherry Grove 115 kV Substation	Santee Cooper /SCE&G	300	2019	Winter Peak
8	SOCO	SCE&G	300	2015	Summer Peak
11	SCE&G	Duke	200	2019	Summer Peak

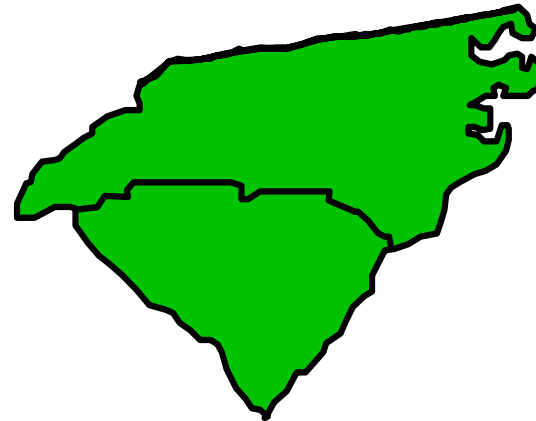
# Reliability Assessment Studies

Glenn Stephens

# Multi-Party Assessments

- Carolina Transmission Coordination Arrangement (CTCA) Assessments
- SERC Assessments
- ERAG Assessments
- Two Party or Multi-Party 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 and assessment and operating activities among the specific parties associated with the CTCA

# CTCA Purpose

## Interchange Agreements associated with the CTPCA

Duke Energy Carolinas (“Duke”) and Duke Energy Progress (“Progress”)

Duke Energy Carolinas (“Duke”) and South Carolina Electric & Gas Company (“SCE&G”)

Duke Energy Carolinas (“Duke”) and South Carolina Public Service Authority (“SCPSA”)

Duke Energy Progress (“Progress”) and South Carolina Electric & Gas Company (“SCE&G”)

Duke Energy Progress (“Progress”) and South Carolina Public Service Authority (“SCPSA”)

South Carolina Electric & Gas Company (“SCE&G”) and South Carolina Public Service Authority (“SCPSA”)



# 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

## Purpose

- 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") will perform the technical analysis outlined in this study scope under the guidance and direction of the Planning Committee ("PC").

# CTCA Studies

## 2013 Scope

- NERC Reliability Standards, SERC Requirements, and individual company study criteria.
- Cases are developed with detailed internal models with current transmission expansion plans from each participating company.
- Generation down cases are developed from starting point cases with internal generation redispatch and Transmission Reserve Margin (TRM) import(s) implemented.

# CTCA Studies

## 2013 Scope (continued)

- Study results are obtained by use of PTI's MUST and Siemens PSS/E programs.
- Report on thermal loading(s) above 90% and voltage(s) violating individual company criteria.
- Study year will be 2019 Summer peak (2019S).

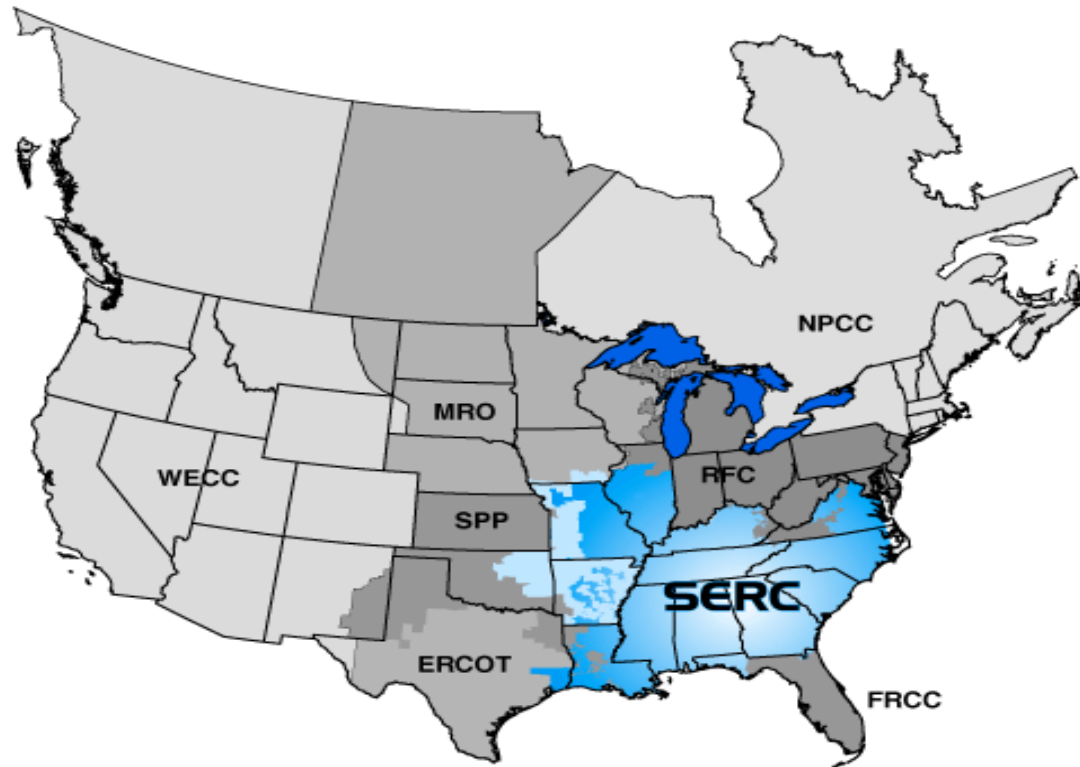
# CTCA Studies 2013 Schedule

- Planning Committee approved Scope document –June 2013.
- Base Case development and revisions- June-July 2013.
- Individual companies run thermal and voltage assessments—August and early September 2013
- Draft report completed by September 2013.
- Final Report Published mid October 2013.

# CTCA Studies

## Questions?

## SERC Future Year Assessments Long Term Study Group (LTSG)



# SERC LTSG 2017 Summer Study Purpose

- Analysis of the performance of the members' transmission systems that identifies limits to power transfers occurring non-simultaneously among the SERC members.
- Analysis of the performance of the members' transmission systems under normal conditions and loss of a single element.



# SERC LTSG 2017 Summer Study Scope

- Assess the strength of the SERC interconnected network by determining its ability to support power transfers.
- NERC Reliability Standards and SERC Requirements.
- Case is developed by the SERC LTSG Modeling Group.

# SERC LTSG 2017 Summer Study Scope (continued)

- Study results are obtained by use of PTI's MUST and Siemens PSS/E programs.
- Identify Significant Facilities under transfer analysis.
- Study scheduled to be completed and report published December 2013.

# SERC LTSG 2017 Summer Study

## Significant Facilities

- If the facility is a hard limit to a transfer
- The level at which it limits a transfer compared to the test level
- The response of the facility to the transfer
- The number of different transfers/companies impacted

# SERC LTSG 2017 Summer Study Significant Facilities (continued)

- If the facility requires the use of an operating guide
- If the outage of the facility results in the overload of numerous major transmission elements
- If an actual TLR has been called on the facility

# SERC LTSG 2017 Summer Study Variable Factors

- Load forecasts and generation availability
- Anticipated drought conditions in the SERC area
- Geographic distribution of load and generation

# SERC LTSG 2017 Summer Study Variable Factors (continued)

- Transmission system configuration
- Simultaneous inter-system power transfers
- Operation based on regional requirements to respect additional contingencies

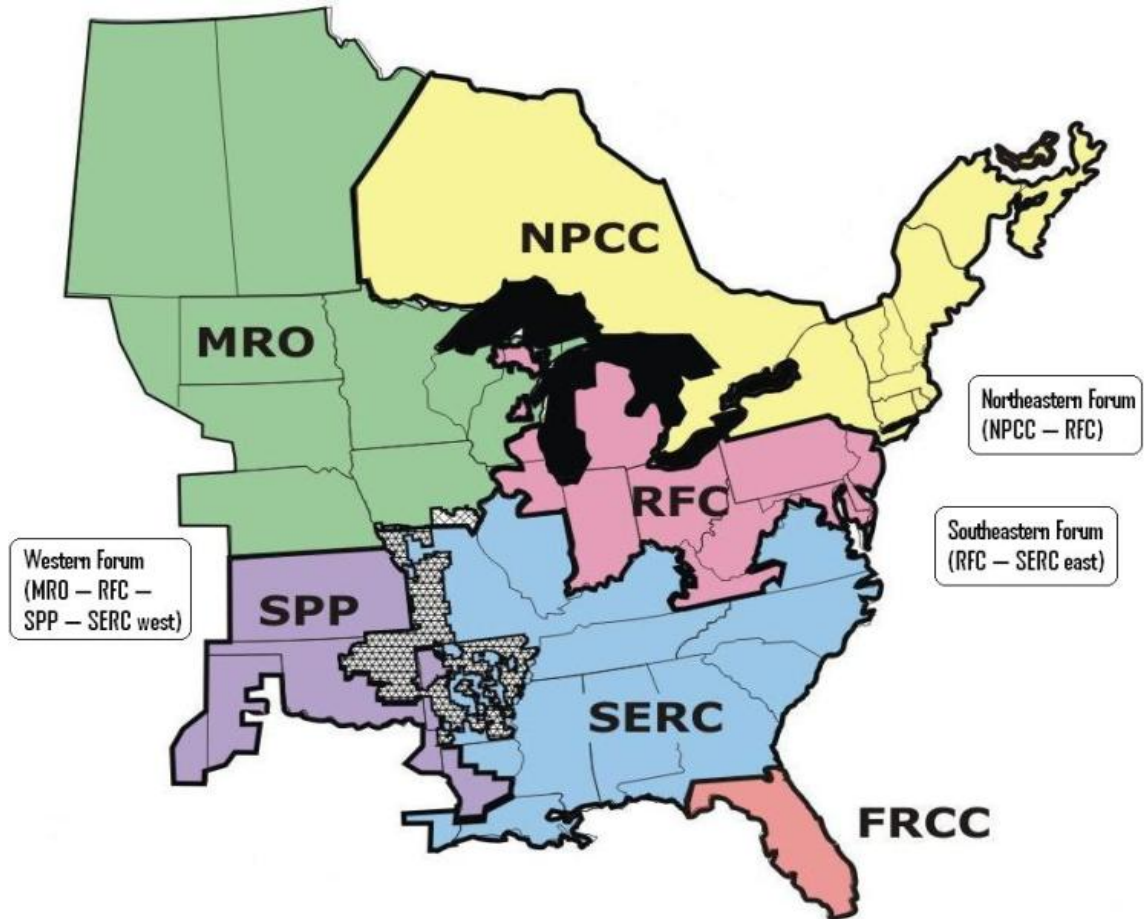
# SERC Assessments

Questions?

# ERAG Assessments

Glenn Stephens





## SERC East-RFC-NPCC

- SERC East
  - ✓ VACAR (Duke, DVP, Progress, SCE&G, SCPSA)
  - ✓ Central (TVA, EON U.S., EKPC, BREC)
- Reliability First Corporation
  - ✓ PJM (Pennsylvania, New Jersey, Maryland)
  - ✓ MISO (Midwest Independent System Operator)

# SERC East-RFC-NPCC (CONT.)

- Northeast Power Coordinating Council
  - ✓ Northeast United States
  - ✓ Southeast Canada

# SERC East-RFC-NPCC Studies

- Seasonal and Near Term/Long Term Studies are to be prepared on a 4-year rotation.
- Rotation will consist of two assessments being performed each year.

# SERC East-RFC-NPCC Studies

- Year A Summer Year A Winter/ Year A/Year B
- Year B Summer Year B Summer - Near Term
- 2013 2013 Summer Near Term
- Year C Summer Year C Winter Year C/Year D
- Year D Summer Year D Summer - Long Term
- 2013 2018 Summer Long Term

# SERC East-RFC-NPCC

## 2013 Summer Transmission System Assessment Scope

- Develop 2013 summer base case with all scheduled firm capacity backed transactions
- Determine thermal regional and sub-regional FCITCs
- Determine FCITCs for regional and sub-regional transfers
- Study work completed Jan-March 2013
- Final Report issued May 2013

# SERC East-RFC-NPCC

## 2013 Summer Final Results

- No SCE&G facilities were identified to limit transfers in the 2013 Summer Assessment
- No Santee Cooper facilities were identified to limit transfers in the 2013 Summer Assessment.

# SERC East-RFC-NPCC

## 2018 Summer Transmission System Assessment Scope

- Develop 2018 summer base case with all scheduled firm capacity backed transactions
- Determine thermal regional and sub-regional FCITCs
- Determine FCITCs for regional and sub-regional transfers
- Study work completed July-October 2013
- Final Report issued November 2013



# ERAG Reliability Assessments

## Questions?

# Introduction to EIPC Studies 2014

Phil Kleckley

SCRTP Regional Stakeholder Meeting  
February 10, 2014

# About the EIPC



- Eastern Interconnection Planning Collaborative (EIPC)
- 23 Planning Authority (Planning Coordinator) members including ISOs/RTOs, non-ISO regions, municipals, cooperatives, ...
- Members are from the U.S. and Canada
- Approximately 95% of the Eastern Interconnection customers covered
- Formed in the Spring of 2009

# Planning Authority Members of EIPC

- Alcoa Power Generating
- American Transmission Co.
- Duke Energy Carolinas
- Duke Energy Florida
- Duke Energy Progress
- Electric Energy Inc.
- LG&E/KU
- Florida Power & Light
- Georgia Transmission Corp.
- IESO (Ontario, Canada)\*
- ISO-New England \*
- JEA
- MAPPCOR \*
- Midcontinent ISO \*
- Municipal Electric Authority of Georgia
- New York ISO \*
- PJM Interconnection \*
- PowerSouth Energy Coop.
- South Carolina Electric & Gas
- Santee Cooper
- Southern Company \*
- Southwest Power Pool
- Tennessee Valley Authority \*

\*Primary participants on portions of the DOE funded project.

# EIPC Activities



1. DOE Interconnection Studies Grant
  - ARRA funded
  - EIPC selected in fall of 2009
  - Study continues into 2015
2. EIPC Model Development and Analysis (non-grant) - funded by EIPC members

Remainder of presentation focuses on activity #2

# EIPC Scope of Activities (non-grant)

- Non-grant work in 2013-2014:
  - Roll-up analysis of the PA's plans to find possible changes that will improve their efficiency and effectiveness
  - Result of this analysis available for consideration in regional and inter-regional planning processes
  - Perform a defined number of scenarios/sensitivities against the rolled-up model

# EIPC Work Plan 2013-2014



- Late 2013 through 2014
  - Provide results of updated roll-up analysis to stakeholders
  - With stakeholder input, develop resource expansion scenarios to be studied in 2014 on 2013 roll-up models
  - Perform inter-regional transmission analysis to support selected scenarios
  - Provide cost estimate for incremental transmission improvements and build-out required to support selected scenarios
  - Discuss interim results with Stakeholders and receive feedback
  - Revise analysis as appropriate
  - Hold Stakeholder meeting(s) to present final results of analysis
  - Publish results
  - Develop a work plan for 2015 and beyond

# EIPC Work Plan 2014 (cont'd)

- Supporting Activities
  - CEII: Continue to make EIPC models available to those who have completed the EIPC CEII process (based on regional clearance)
  - Website: [www.eipconline.com](http://www.eipconline.com)
    - Continue to host the EIPC website
    - Review current EIPC website and recommend modifications as appropriate
    - Post material from both grant and non-grant EIPC activities



# Stakeholder Process Overview



- Existing stakeholder groups previously created for other purposes such as compliance with FERC Order 890 will be used to facilitate stakeholder input
- Ensure a regional focus:
  - Present roll-up models and results
  - Receive stakeholder feedback, input, comments and suggestions on specific scenarios to be studied
  - Present the results of scenario studies
  - Seek stakeholder feedback on reports that are created

# Stakeholder Process Overview (cont'd)

- EIPC plans to hold two to three interconnection-wide stakeholder webinars each year
- These webinars provide transparency and coordination between the regions and to seek additional stakeholder input
- Webinars will be open to all stakeholders including federal and state (EISPC) representatives
- If necessary, interconnection-wide in-person stakeholder meetings could be held in place of or in addition to the webinars

# Planning Authority Responsibility



- Ensure appropriate communication with regional stakeholder processes
- Coordinate with EISPC to ensure they have the opportunity to provide input and feedback
- Develop potential scenarios to be presented to stakeholders for input
- Solicit, organize, and review input from stakeholders

# Planning Authority Responsibility (cont'd)

- Work with stakeholders through webinars (and meetings, if necessary) to provide transparency and resolve disagreements if possible
- Determine which scenarios will be studied based on input from stakeholders and guidance from the EIPC Executive Committee
- Post chosen scenarios and explanations for why those scenarios were chosen
- Report back to each region on interim and final study results

# Stakeholder Role



- Participate in regional processes and meetings
- Provide input on the roll-up models and results
- Provide input on potential scenarios developed by the PAs
- Suggest other scenarios of interest that should be considered
- Work with other stakeholders in determining which scenarios would be of most value
- Participate in interconnection-wide webinars (and meetings, if necessary) to provide input on the interim results, draft conclusions, and recommendations

# Schedule for 2014

# SC RTP

- EIPC Webinar March 25, 2014
  - Discuss scenario options for 2018 and 2023 study cases
- Stakeholder final comments due March 28, 2014
- EIPC to finalize scenario selection April 2, 2014
- EIPC to post final scenarios and 2014 schedule April 4, 2014
- SSMLFWG to begin studies April 7, 2014

# Principles for Scenario Development

- All scenarios will be run as changes to a Base Plan created by the EIPC ...
- Scenarios will be identified for the purpose of developing high-level transmission build outs ...
- Scenarios should not be duplicative of any other local or regional planning efforts ...
- The assumptions defining a scenario should be provided by the stakeholder sponsors ...
- Changes to the base plan resulting from the scenario assumptions will be determined by the EIPC members ...

# Guidelines for Scenario Definition

- A general narrative description of the scenario, including the overall objective should be provided ...
- For transfer studies, the source and sink of power transferred should be identified ...
- The addition or removal of resources must be identified ...
- Scenarios that include storage technologies must identify on-peak contribution and off-peak demand ...
- Changes to the peak demand forecast should be specified as a change to the aggregate demand in the Base Plan ...



# For More Information

# SCRTP

Contact Phil Kleckley

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# Questions and Discussion



## Next SCRTP Meeting

- Update on FERC Order 1000
- Review of Major Transmission Expansion Plans
- Not Scheduled
- SCRTP Email Distribution List will be notified
- Register online

# South Carolina Regional Transmission Planning

## Stakeholder Meeting

Hilton Garden Inn Charleston Airport

Charleston, SC

February 10, 2014