South Carolina Regional Transmission Planning

Stakeholder Meeting

Hilton Garden Inn

North Charleston, SC

November 6, 2008

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Stakeholder Meeting – November 2008

- Review the FERC Order on SCE&G's Attachment K
- Review, discuss and receive input from the stakeholder group on the initial results of requested Economic Transmission Planning Studies
  - Impacted facilities
  - Solution options
  - Cost and time estimates

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Stakeholder Meeting – November 2008

- Review how to acquire all data and study assumptions used to conduct the Economic Transmission Planning Studies
- Review SIRPP activities
- Review new features of the SCRTP website

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Overall Planning Cycle

Tom Abrams

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Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar

Santee Cooper Transmission Planning Process

9/10/2007

A D B D A

Internal Model Updating

SERC Regional Model Development

Final LTSG cases

ERAG/MMWG Model Development

Final ERAG/ MMWG Cases → B

Final LTSG Cases

SERC Coordinated Regional Studies

Study Results → C

Sub-Regional Coordinated Studies

Study Results → C

C Results from Studies

Local Planning Process

D Current Transmission Plan → **Perform Initial Assessment** → **Study Alternative Projects** → **Perform Additional Studies** → **Finalize Plan For Budgeting** → Current Transmission Plan D

Present initial results

Provide input on Alternative projects

Present assessment of alternative projects

Provide input on Additional Studies

Present Results Of Additional Studies

Present Approved Transmission Plan

Stakeholder Interaction

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SCE&G Attachment K – FERC Order

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FERC Directives

- Describe the review and comment process for
  - reliability planning studies
  - two-party studies
  - multiple-party studies
- Describe the review process for finalizing and approving the transmission plan
- Describe the transmission plan(s) being reviewed in the quarterly stakeholder meeting
- Describe the process for stakeholders to submit alternatives and consideration of those alternatives
- Develop a mechanism to manage access to confidential planning-related information that is not CEII

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FERC Directives

- Identify the information customers and other stakeholders are to provide
- Include guidelines for submittal of planning-related information or to post these guidelines on SCRTP website, provided they have been developed in consultation with stakeholders
- Describe how SCE&G will treat demand resources comparably
- Revise dispute resolution provision to preserve the rights of a party to exercise its rights under section 206 of the FPA
- Describe process for coordinating with interconnected systems to share system plans to ensure that they are simultaneously feasible and otherwise use consistent assumptions and data and identify system enhancements that could relieve congestion or integrate new resources

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FERC Directives

- Provide additional information regarding how stakeholders can participate in those activities
- Identify how SCSG will cluster or batch economic studies in its economic planning process and to clearly identify the processes being used to perform Economic planning studies on a local and subregional basis
- Provide for participation by any interested party in the SIRPP stakeholder group
- Distribute information to be discussed at a stakeholder meeting sufficiently in advance of that meeting to provide for meaningful stakeholder review
- Ability of the SIRPP stakeholder to cluster or batch requests for economic studies.

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FERC Directives

- Demonstrate how the dispute resolution provision of Attachment K can be used to address and resolve disputes related to SIRPP planning activities or, alternatively, propose different dispute resolution provisions that can be used to address and resolve such disputes and implement agreements reached through such dispute resolution.
- Allocation of costs for upgrades identified through the SIRPP economic planning process
- How planning costs will be recovered

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Stakeholder Input to Attachment K Changes

- Web Conference for stakeholders in approximately two weeks
- SCRTP Email Alerts List will receive Web Conference notice and DRAFT document

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Economic Transmission Planning Principle

Clay Young

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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 (e.g., wind developers)

- 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 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

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Economic Transmission Planning Study 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 Study Selection

- Economic power transfer sensitivities with sources or sinks outside the SCRTP area will be advanced to the Southeast Inter-Regional Participation Process (SIRPP)

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Stakeholder Selected Studies

- SCE&G to Duke 600 MW
- SCE&G to Duke 1200 MW
- Santee Cooper to Progress-Carolinas 600 MW

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Economic Transmission Planning Study
Initial Results

Johnny Martin and William Gaither

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Study Methodology

- Study Analyses Performed
  - Detailed thermal and voltage analysis using PTI's PSS/E Power Flow Software. Analysis of SCE&G and Santee Cooper internal transmission systems including single and double contingencies.
  - Linear transfer analysis using PTI's MUST Software. Analysis includes single contingencies and the monitoring of the Duke, Progress Energy Carolinas, SCE&G and Santee Cooper Transmission Systems. In accordance with the requirements of NERC Standards FAC-012-1 and FAC-013-1, the transfer capability in this study was developed consistent with Transfer Capability Methodology as documented in the SERC LTSG Procedure Manual.

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Study Methodology

- Overloaded facilities that had a low response to the requested transfer were excluded and problems or issues identified that are local area in nature were also excluded.

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Power Flow Base Case Discussion

• 2012 Summer Peak Base case from SERC LTSG 2008 model development process

• Use available SCE&G and Santee Cooper generation to make transfers. Additional generation needed to make transfers came from Southern Company Area to create flows across the SCRTP area.

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Economic Transmission Planning Scenarios Study
Initial Results

Santee Cooper to Progress Energy Carolinas
600 MW

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Study Request Details

- 600 MW Transfer from Santee Cooper to Progress Energy Carolinas
- 2012 Summer Peak Conditions
- Impact on transmission facilities in South Carolina
- Use generation in the Southern Company area to make up the difference in the transfer

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Study Assumptions

- 2012 Summer Peak Base case from SERC LTSG 2008 model development process

- 600 MW Transfer Breakdown
  - 0 MW from Santee Cooper Area
  - 600 MW from Southern Company Area

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Initial Study Results
Santee Cooper to Progress 600 MW
Detailed Thermal and Voltage Analysis

SCE&G Area Results

No SCE&G facilities exceeded their thermal or voltage limits for the detailed thermal and voltage analysis.

Santee Cooper Area Results

No Santee Cooper facilities exceeded their thermal or voltage limits for the detailed thermal and voltage analysis.

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Initial Study Results
Santee Cooper to Progress 600 MW
Linear Transfer Analysis

No transmission facilities in SCE&G or Santee Cooper were identified as a limit at the 600 MW transfer level for this study.

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Initial Conclusions
Santee Cooper to Progress 600 MW

• There are No Single or Double Contingencies in the SCE&G or Santee Cooper areas that limit this transfer.

•The linear transfer analysis shows that there are no transfer limitations in the SCE&G or Santee Cooper areas.

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Economic Transmission Planning Scenarios Study
Initial Results

SCE&G to Duke 600 MW

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Study Request Details

- 600 MW Transfer from SCE&G to Duke
- 2012 Summer Peak Conditions
- Impact on transmission facilities in the SCRTP area
- Use generation in the Southern Company area to make up the difference in the transfer

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Study Assumptions

- 2012 Summer Peak Base case from SERC LTSG 2008 model development process

- 600 MW Transfer Breakdown
  - 102 MW from SCE&G Area
  - 498 MW from Southern Company Area

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Initial Study Results
SCE&G to Duke 600 MW
Detailed Thermal and Voltage Analysis

SCE&G Area Results

No SCE&G facilities exceeded their thermal or voltage limits for the detailed thermal and voltage analysis.

Santee Cooper Area Results

No Santee Cooper facilities exceeded their thermal or voltage limits for the detailed thermal and voltage analysis.

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Initial Study Results
SCE&G to Duke 600 MW
Linear Transfer Analysis

No transmission facilities in SCE&G or Santee Cooper were identified as a limit at the 600 MW transfer level for this study.

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Initial Conclusions
SCE&G to Duke 600 MW

• There are No Single or Double Contingencies in the SCE&G or Santee Cooper areas that limit this transfer.

•The linear transfer analysis shows that there are no transfer limitations in the SCE&G or Santee Cooper areas.

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Economic Transmission Planning Scenarios Study
Initial Results

SCE&G to Duke 1200 MW

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Study Request Details

- 1200 MW Transfer from SCE&G to Duke
- 2012 Summer Peak Conditions
- Impact on the SCE&G side of the transfer
- Identify threshold point at which transfer becomes a problem
- Use generation in the Southern Company area to make up the difference in the transfer

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Study Assumptions

- 2012 Summer Peak Base case from SERC LTSG 2008 model development process

- 1200 MW Transfer Breakdown
  - 102 MW from SCE&G Area
  - 1098 MW from Southern Company Area

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Initial Study Results
SCE&G to Duke 1200 MW
Detailed Thermal and Voltage Analysis

SCE&G Area Results

Scenario	Constrained Facility	Percent Loading	Percent Increase	Contingencies
SCEG – Duke 1200 MW	SRS 230-115kV autotransformer #1	101.4	9.5	Urquhart-Graniteville 230kV line
				SRS 230-115kV autotransformer #2
SCEG – Duke 1200 MW	SRS 230-115kV autotransformer #2	101.4	9.5	Urquhart-Graniteville 230kV line
				SRS 230-115kV autotransformer #1

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Initial Study Results
SCE&G to Duke 1200 MW
Detailed Thermal and Voltage Analysis

Santee Cooper Area Results

No Santee Cooper facilities exceeded their thermal or voltage limits for the detailed thermal and voltage analysis.

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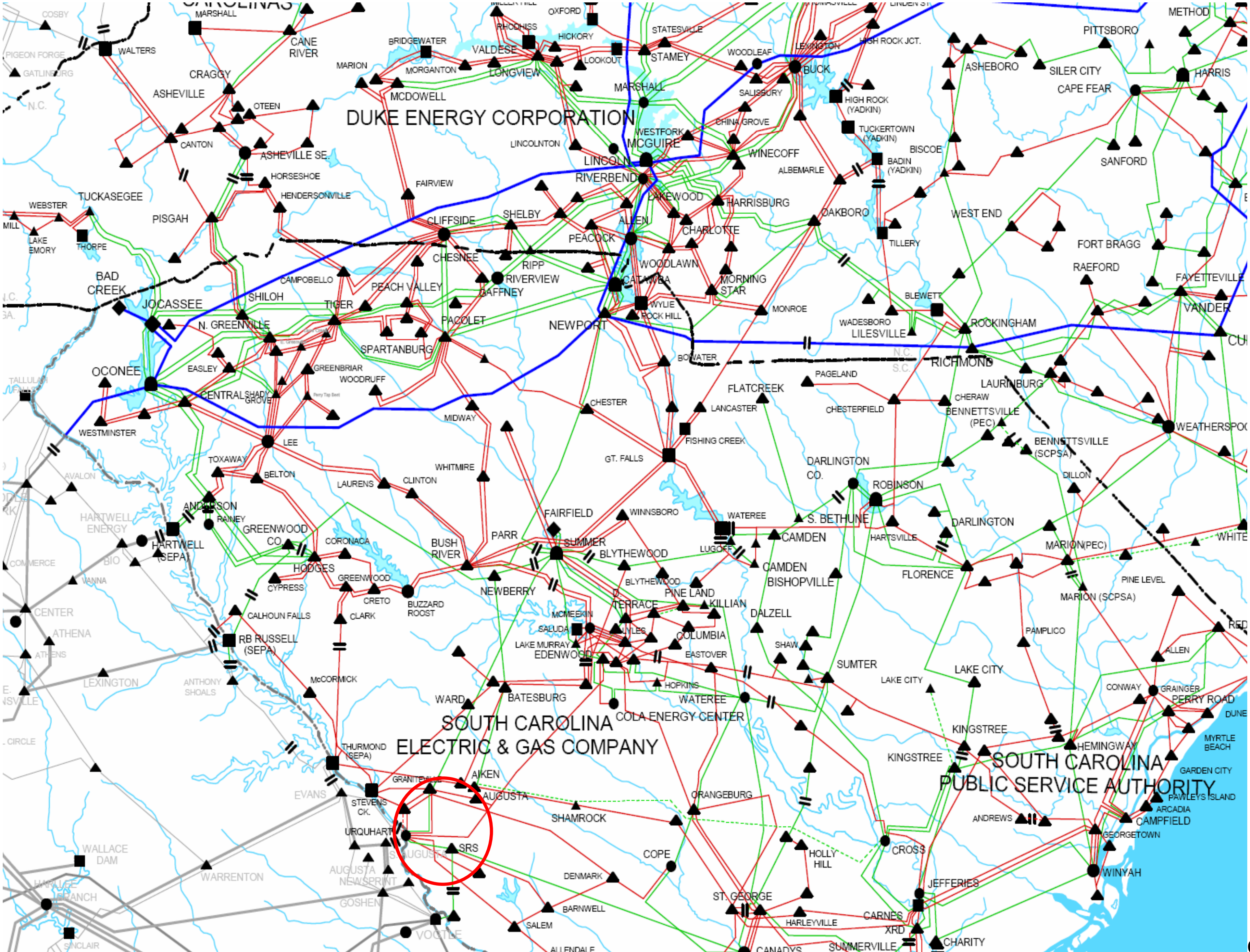
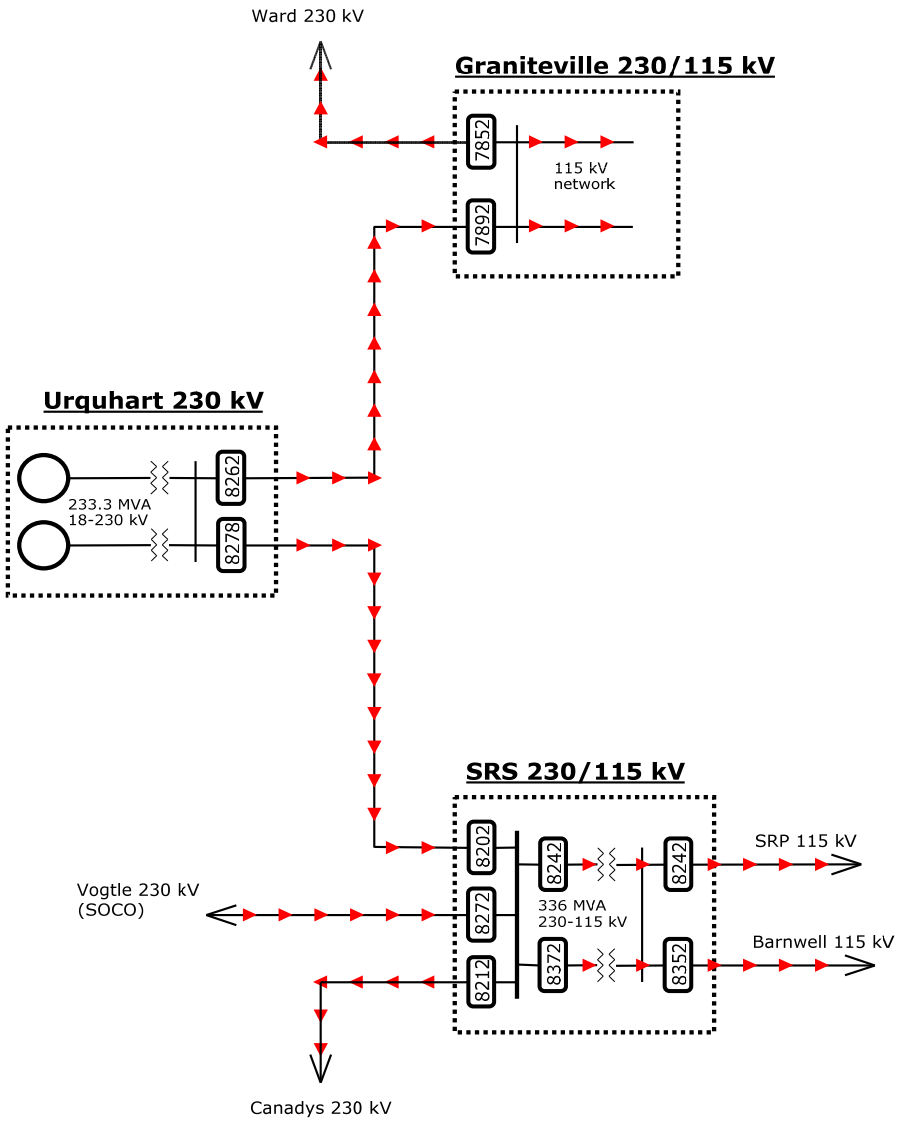
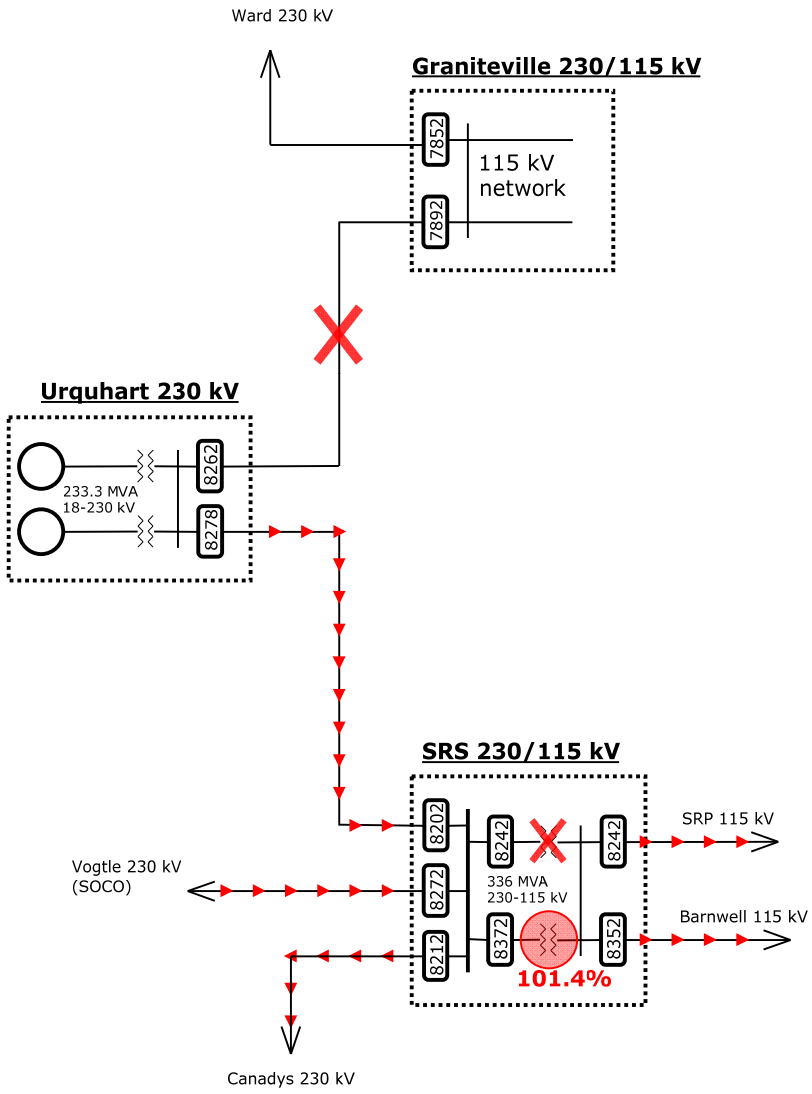

DUKE ENERGY CORPORATION
SOUTH CAROLINA ELECTRIC & GAS COMPANY
SOUTH CAROLINA PUBLIC SERVICE AUTHORITY
MARSHALL
CANE RIVER
WALTERS
CRAGGY
ASHEVILLE
OTEEN
CANTON
ASHEVILLE SE.
HORSESHOE
HENDERSONVILLE
TUCKASEGEE
WEBSTER
PISGAH
THORPE
BAD CREEK
JOCASSEE
N. GREENVILLE
OCONEE
EASLEY
CENTRAL
WESTMINSTER
LEE
TOXAWAY
BELTON
ANDERSON
HARTWELL (SEPA)
GREENWOOD CO.
HODGES
CYPRESS
CALHOUN FALLS
RB RUSSELL (SEPA)
McCORMICK
THURMOND (SEPA)
STEVENS CK.
URQUHART
BRIDGEWATER
MARION
MORGANTON
MCDOWELL
VALDESE
LONGVIEW
HICKORY
OXFORD
LOOKOUT
RHODHISS
STATESVILLE
STAMEY
MARSHALL
WOODLEAF
LEXINGTON
BUCK
SALISBURY
HIGH ROCK (YADKIN)
TUCKERTOWN (YADKIN)
BADIN (YADKIN)
CHINA GROVE
WESTFORK
MCGUIRE
LINCOLNTON
LINCOLN
RIVERBEND
WINECOFF
ALBEMARLE
LAKEWOOD
HARRISBURG
ALLEN
CHARLOTTE
PEACOCK
OAKBORO
WOODLAWN
CATAWBA
MORNING STAR
WYLIE
ROCK HILL
MONROE
NEWPORT
FAIRVIEW
CLIFFSIDE
SHELBY
CHESNEE
RIPP
RIVERVIEW
GAFFNEY
PEACH VALLEY
CAMPOBELLO
SHILOH
TIGER
PACOLET
SPARTANBURG
GREENBRIAR
WOODRUFF
MIDWAY
BOWATER
FLATCREEK
LANCASTER
CHESTER
FISHING CREEK
GT. FALLS
WHITMIRE
LAURENS
CLINTON
FAIRFIELD
WINNSBORO
PARR
BUSH RIVER
SUMMER
BLYTHEWOOD
NEWBERRY
BUZZARD ROOST
CRETO
CLARK
SALUDA
LAKE MURRAY
EDENWOOD
MCMEEKIN
COLUMBIA
KILLIAN
PINE LAND
EASTOVER
HOPKINS
WATEREE
COLA ENERGY CENTER
BATESBURG
WARD
AIKEN
AUGUSTA
GRANITEVILLE
SRS
SHAMROCK
ORANGEBURG
COPE
DENMARK
BARNWELL
SALEM
ALLENDALE
ST. GEORGE
CANADYS
HARLEYVILLE
HOLLY HILL
CROSS
JEFFERIES
CARNES
SUMMERVILLE
XRD
CHARITY
WATEREE
CAMDEN
LUGOFF
BISHOPVILLE
DALZELL
SHAW
SUMTER
S. BETHUNE
HARTSVILLE
DARLINGTON CO.
ROBINSON
DARLINGTON
FLORENCE
LAKE CITY
KINGSTREE
HEMINGWAY
ANDREWS
GEORGETOWN
WINYAH
CAMPFIELD
ARCADIA
PAWLEYS ISLAND
GARDEN CITY
MYRTLE BEACH
PERRY ROAD
GRAINGER
CONWAY
ALLEN
PAMPLICO
MARION (SCPSA)
MARION(PEC)
PINE LEVEL
BENNETTSVILLE (SCPSA)
BENNETTSVILLE (PEC)
CHERAW
LAURINBURG
RICHMOND
ROCKINGHAM
LILESVILLE
WADESBORO
BLEWETT
TILLERY
PAGELAND
CHESTERFIELD
DILLON
WEATHERSPOON
FAYETTEVILLE
VANDER
RAEFORD
FORT BRAGG
WEST END
SANFORD
CAPE FEAR
SILER CITY
ASHEBORO
PITTSBORO
HARRIS
METHOD
HIGH ROCK JCT.
BISCOE
N.C.
S.C.
HARTWELL ENERGY
ANTHONY SHOALS
LEXINGTON
EVANS
WALLACE DAM
WARRENTON
AUGUSTA NEWSPRINT
GOSHEN
VOGTLE
SINCLAIR

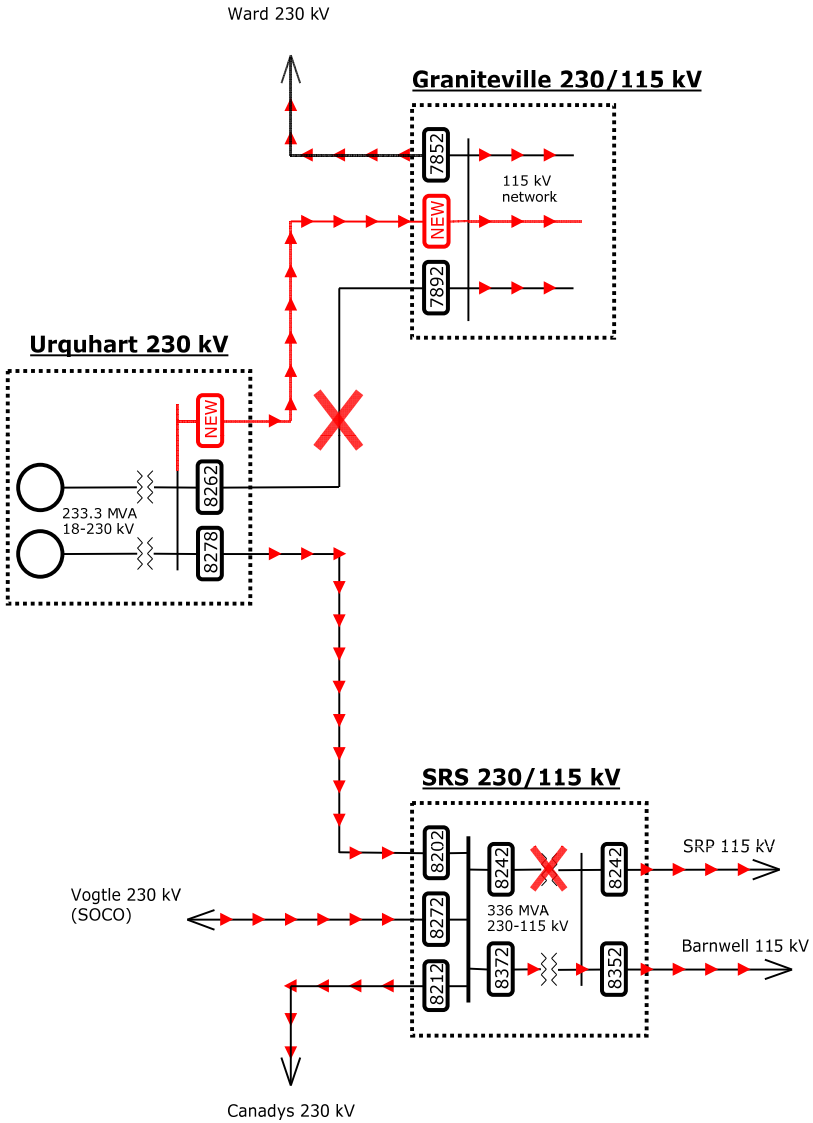
Basecase Conditions



Transfer with Identified Event



Initial Recommendation



Initial Study Results
SCE&G to Duke 1200 MW
Linear Transfer Analysis

The linear transfer analysis shows that there are no transfer limitations in the SCE&G or Santee Cooper areas

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Initial Conclusions
SCE&G to Duke 1200 MW

- There are No Single Contingencies in the SCE&G and Santee Cooper areas that limit this transfer.
- For a double contingency of the Urquhart-Graniteville 230kV line and one of the SRS 230-115kV autotransformers, the remaining SRS 230-115kV autotransformer is above its thermal rating at the 1200 MW transfer level. Further analysis shows that this facility is just below its thermal rating at an 1100 MW transfer level.
- The linear transfer analysis shows that there are no transfer limitations in the SCE&G or Santee Cooper areas.

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Initial Recommendations, Cost Estimates and Schedules

One of the contingencies contributing to the limitation on the SRS 230-115kV autotransformers is the Urquhart-Graniteville 230kV line. SCE&G presently has a plan in place to construct a second Urquhart-Graniteville 230kV line in 2016. Accelerating this project from 2016 to 2012 will remove the limitation identified in this study.

The cost to accelerate this project is estimated to be $8,400,000.

The time to complete this project once it is initiated is estimated to be 28 months.

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Stakeholder Input on Initial Results

- Study Refinements
- Other Solution Options
- Future Conference Call

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Access to Reports and Power Flow Base Cases

- Reports on the SCRTP Secure Website
- Power Flow Base Cases
  - Base Case content
  - FERC 715 Filing
    - April 1 every year
  - TOs in the southeast develop updated base cases in May
    - Used in the SCRTP Economic Transmission Planning Studies
  - SERC/FERC meeting yesterday
  - Currently, last year's (2007 series) base cases are posted on the SCRTP Secure Website

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Southeast Inter-Regional Participation Process (SIRPP)

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Overview of Process

- Provides expanded Economic Planning studies
- Provides transmission information to market participants
- Extends the Regional Participation principle to an Inter-Regional level
- Additional coordination among transmission owners
- Annual cycle of Economic Planning studies

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Participating Transmission Owners

- Alabama Electric Cooperative
- Duke Energy Carolinas
- Dalton Utilities
- Entergy Operating Companies
- Georgia Transmission Corporation
- Municipal Electric Authority of Georgia
- Progress Energy Carolinas
- Santee Cooper
- South Carolina Electric & Gas
- South Mississippi Electric Power Assoc.
- Southern Companies
- Tennessee Valley Authority

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Next Meeting (Web Conference) of SIRPP

- November 13, 2008 2:00 - 5:00 PM EST
- Review and provide comment on the draft SIRPP Economic Planning Study Scope Document
- Stakeholders to provide input on proposed revisions to the SIRPP due to FERC's Attachment K Orders

If you would like to participate in the web conference please RSVP by November 11, 2008 to g2seirpp@southernco.com

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SCRTP Website

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SCRTP Website

- Live demonstration of new features
- CEII and Non-Disclosure Agreement (NDA)
  - Agreement
  - Application
- SCRTP Secure Site
  - Reports
  - Power Flow Base Cases

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Stakeholder Input on the SCRTP Process
First Year

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Next Meeting Activities

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Next SCRTP Meeting

- Date / location not set
- You will be notified by email
- Register online
- SCE&G and Santee Cooper will review the Reliability Transmission Planning processes and initial results

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South Carolina Regional Transmission Planning

Stakeholder Meeting

Hilton Garden Inn

North Charleston, SC

November 6, 2008

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